



**TRANSPORT
SCOTLAND**
CÒMHDHAIL ALBA

Airdrie-Bathgate Rail Link Improvement Stage 1 Outcome Evaluation Report

CH2M Hill

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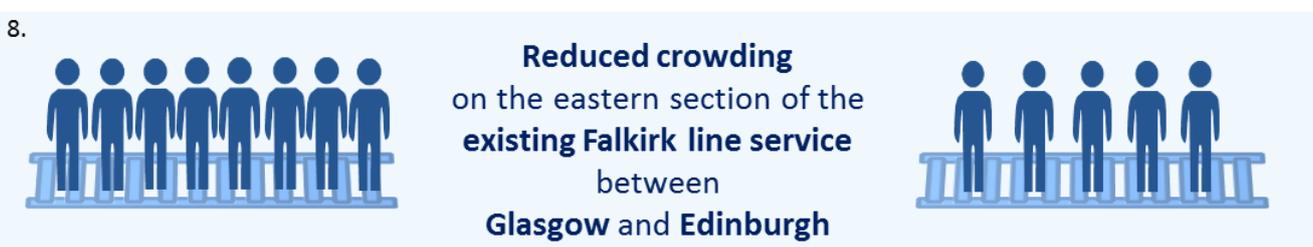
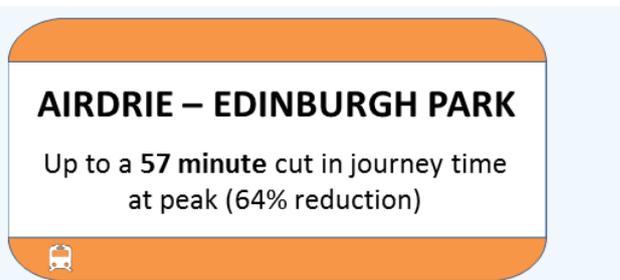
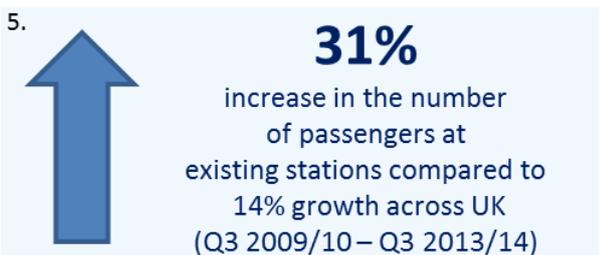
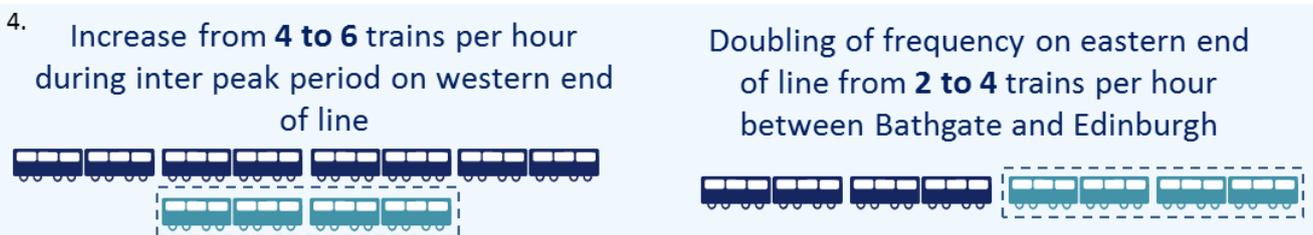
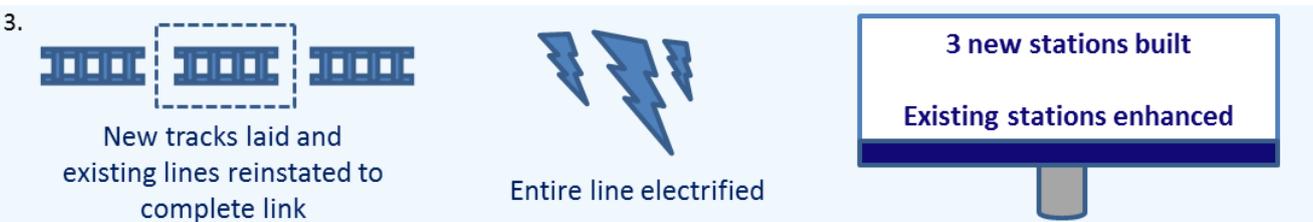
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INFOGRAPHIC PAGE

Evaluation of the Airdrie to Bathgate Rail Link Improvement



1 EXECUTIVE SUMMARY

Summary

1.1 In January 2003, Scottish Ministers accepted the recommendations of the Central Scotland Transport Corridor Study (CSTCS) to introduce a 15 minute frequency rail service between Glasgow and Edinburgh, via Airdrie and Bathgate. Shortly afterwards work on the project began which involved reinstating existing railway lines, electrifying track along the route, laying new track and also constructing new stations. A reduced service began on the route in December 2010, with full service beginning to operate by May 2011, at a cost of £300 million.

1.2 The Transport Scotland objectives for the project were:

- To improve direct access to labour markets in Glasgow and Edinburgh for people living in North Lanarkshire and West Lothian;
- To encourage inward investment to and therefore stimulate economic growth in North Lanarkshire and West Lothian;
- To assist in promoting social inclusion to communities in North Lanarkshire and West Lothian;
- To increase the number of people using public transport in Central Scotland;
- To offer a sustainable public transport alternative to the M8 and therefore reduce road congestion; and
- To allow existing services to be connected and create an alternative to the Edinburgh - Glasgow main line, reducing congestion at peak times.

1.3 In 2013, Transport Analytical Services produced draft guidance on the evaluation of major rail projects in Scotland. This evaluation forms part of a three-project pilot of the new guidance, used to test how appropriate the guidance is to projects at various times since their delivery.

Stage 1 Outcome Evaluation

1.4 The aim of the Airdrie-Bathgate Stage 1 Outcome Evaluation is to provide an early assessment of the extent to which the project is on track to reach its objectives, through the examination of relevant monitoring data.

1.5 This has shown that the project has achieved many of its objectives. At the same time it was not possible to determine the link between opening the rail link and a number of project objectives. Below we list the objectives along with the main findings associated with them.

1.6 *Objective 1: Improve direct access to labour markets in Glasgow and Edinburgh for people living in North Lanarkshire and West Lothian.*

Direct access to labour markets in Glasgow and Edinburgh has been improved for local communities. Journey times from Bathgate to Glasgow and from Airdrie to Edinburgh have significantly reduced since the service has been in operation improving access to Glasgow from the east and to Edinburgh from the west. In particular, weekday journey times between those destinations have seen a 3 time reduction in 2014, in comparison with 2006.

1.7 Objective 2: Encourage inward investment to and therefore stimulate economic growth in North Lanarkshire and West Lothian.

Whilst GVA for North Lanarkshire has been fairly consistent and that for West Lothian has increased in the period coinciding with the operation of the Airdrie to Bathgate rail link, it is not possible to attribute any change in GVA values for the North Lanarkshire and West Lothian Local Authority areas directly to the Airdrie to Bathgate rail improvement at this early stage. The data shows that the GVA for North Lanarkshire has been fairly consistent since 2007 and that for West Lothian is generally rising in line with the level of increases seen prior to the link opening.

1.8 Objective 3: Assist in promoting social inclusion to communities in North Lanarkshire and West Lothian.

In the short term, the Airdrie to Bathgate rail link improvement is unlikely to have significantly influenced employment patterns and, subsequently, the number of benefit claimants (which included persons claiming Job Seekers allowance) within North Lanarkshire and West Lothian. Whilst its impact on employment may materialise over a longer period, it is recognised that it may be difficult to attribute any change directly to the improvement as other external factors are likely to have a greater influence on local employment patterns.

1.9 Objective 4: Increase the number of people using public transport in Central Scotland.

The rail link has created better links to the national rail network from Central Scotland with trip destinations data indicating that the number of journeys has not only increased to stations on the Airdrie-Bathgate line but also to destinations further afield. As an example, the evaluation has found that the percentage of journeys to work using rail in North Lanarkshire and West Lothian in 2012 was higher than it had been in previous years, against a backdrop of reducing bus usage.

1.10 Objective 5: Offer a sustainable public transport alternative to the M8 and therefore reduce road congestion.

By providing a rail link between Airdrie and Bathgate, a public transport alternative to the M8 has been created although it is not possible to confirm whether this has removed traffic from the M8. The link has likely contributed to the increase in journeys to work by rail in North Lanarkshire and West Lothian Local Authority areas, providing a viable alternative to the motorway.

1.11 Objective 6: Allow existing services to be connected and create an alternative to the Edinburgh-Glasgow main line, reducing congestion at peak times.

It appears from the data that the number of passengers abstracted from to the Airdrie to Bathgate line from other Glasgow to Edinburgh services is limited, although this might begin to change as people adjust their travel behaviour. On the other hand, evidence suggests that the Airdrie to Bathgate line may have reduced crowding on Falkirk line services on the eastern section of the line. There is little to suggest that the Airdrie to Bathgate link has reduced crowding on the Falkirk line in and out of Glasgow.

Recommendations for the Rail Evaluation Guidance

1.12 A number of recommendations were made as a result of the draft rail guidance being used in the Stage 1 Outcome Evaluation of the project.

1.13 The main comments referred to the need to provide a toolkit setting out a range of indicators that can be used against the STAG objectives; including a requirement for an Evaluation Plan to be prepared at an early stage; providing advice on assessing the accuracy of predictions; building in assessments of environmental mitigation measures into the evaluations; providing advice on incorporating stakeholder feedback. It has also been noted that roles and responsibilities of the project team as well as details of the reporting structure to be used need to be more clearly defined. Uncertainty around the role of the Gateway 5 review and Lessons Learned document's role in the evaluation process were highlighted, as was the need to include advice on how lessons learned are to be disseminated.

2 INTRODUCTION

Background

2.1 The Airdrie to Bathgate rail link improvement project originated from the Central Scotland Transport Corridor Study (CSTCS) which was carried out on behalf of the Scottish Executive from 2001 until 2003 to assess solutions for easing transport problems in central Scotland. In January 2003, the Scottish Ministers decided to accept the recommendations of the CSTCS to introduce a 15 minute frequency rail service between Glasgow and Edinburgh, via Airdrie and Bathgate.

2.2 As a result, the Airdrie to Bathgate Rail Link Improvement Project was created and became operational as a reduced service in December 2010, with full service beginning to operate by May 2011, at a cost of £300 million. 2012 was the first calendar year of full services.

2.3 The service was designed to deliver a double-track electrified railway with a nominal minimum design speed of 80mph, although where reasonably practical 90mph is the target speed. The line was intended to be capable of supporting a minimum operation of four passenger trains per hour in each direction using modern electric multiple unit rolling stock.

2.4 This was achieved by reopening 22km of closed route from Drumgelloch, near Airdrie, to Bathgate as an electrified, double track railway. A second track was constructed for 2km between Airdrie and Drumgelloch and for 10km between Bathgate and Newbridge Junction. The existing 26km between Bathgate and Haymarket East Junction was electrified.

2.5 New stations were built at Caldercruix, Blackridge and Armadale. The existing stations at Airdrie, Livingston North and Uphall were developed to provide additional platforms and improved car parking.

2.6 The evaluation of rail projects in the UK has typically had less focus than ex ante appraisal and also when compared to other public policy areas. Transport Scotland is, however, developing rail evaluation guidance which is being tested and refined through three pilot evaluations.

2.7 CH2M Hill was commissioned by Transport Scotland in 2014 to carry out a Stage 1 Outcome Evaluation of the Airdrie to Bathgate rail link improvement project, which represents one of the pilots, and provide feedback to inform further development of the guidance. This project is one of three pilot evaluations commissioned by Transport Scotland to assess whether projects have met or are meeting their objectives, and also to test new evaluation guidance drafted by Transport Scotland.

2.8 The Stage 1 evaluation involves a 'light touch' review, the purpose of which is to provide an initial indication of the project's impact and confirm how the project is progressing towards achieving its objectives. The aim is that a more in-depth, Stage 2 evaluation will be undertaken five years after opening when enough time has passed for impacts relating to these objectives to work through.

2.9 The Stage 2 evaluation is conducted once the project has been in existence for a sufficient period to enable a comprehensive examination to be undertaken of actual performance against identified targets. If undertaken too soon, final impacts may not have had time to “work through”, but if undertaken too late, evaluation results may lose relevance. To ensure a balance between the two, it is considered that Stage 2 Outcome Evaluation should take place approximately three to five years after opening.

2.10 The process evaluation of projects related to the Airdrie to Bathgate rail link worked in a different way to that associated with other work. It had been undertaken before this contract was commissioned and it was the responsibility of the contractors to pull the evidence together into a coherent entity, making sure that any main findings were pulled out.

2.11 The general location of the Airdrie to Bathgate improvements is shown in Figure 2.1.

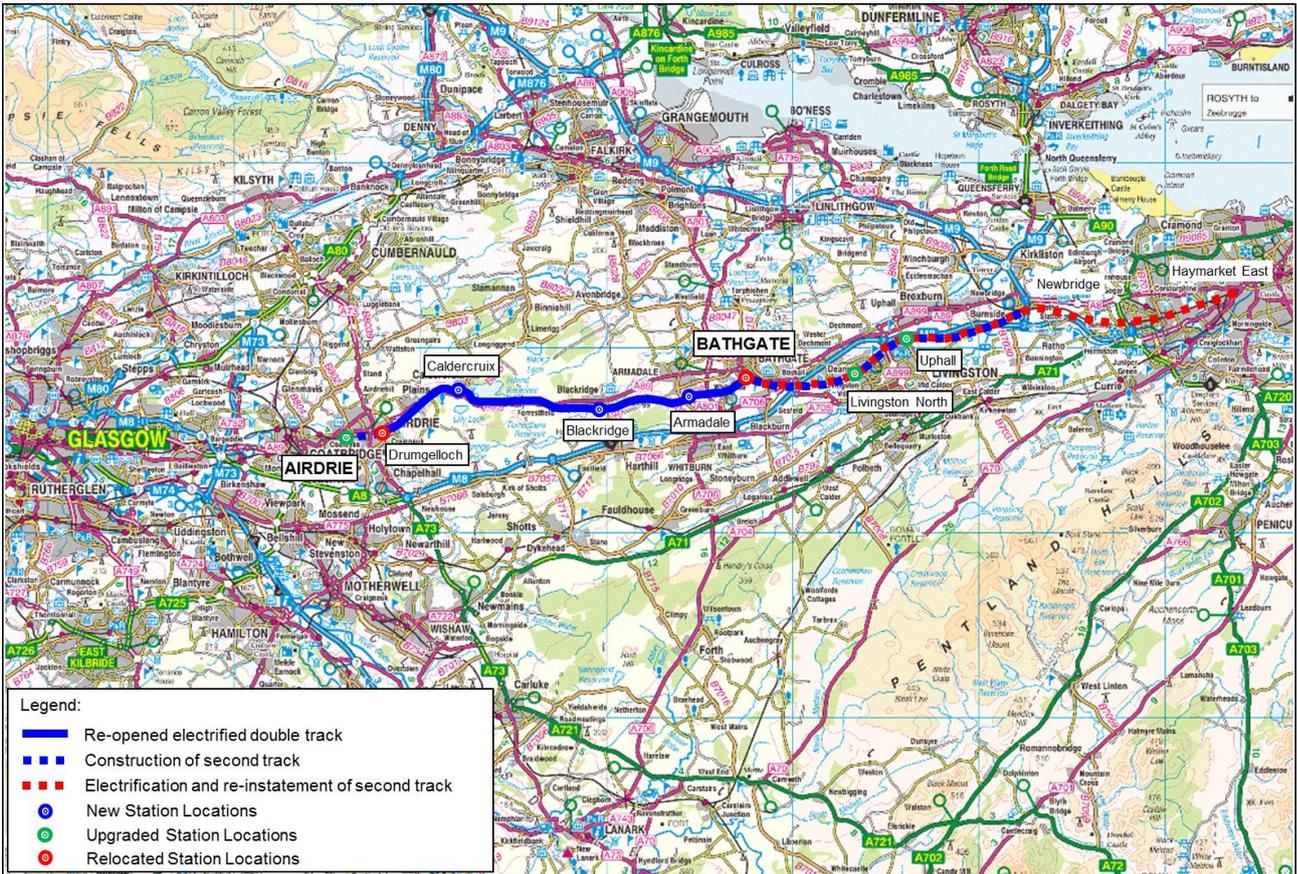


Figure 2.1: Airdrie to Bathgate Improvement Locations

Project Objectives

2.12 The objectives of the Airdrie to Bathgate rail link improvement were set as follows:

- Improve direct access to labour markets in Glasgow and Edinburgh for people living in North Lanarkshire and West Lothian;
- Encourage inward investment to and therefore stimulate economic growth in North Lanarkshire and West Lothian;
- Assist in promoting social inclusion to communities in North Lanarkshire and West Lothian;
- Increase the number of people using public transport in Central Scotland;
- Offer a sustainable public transport alternative to the M8 and therefore reduce road congestion; and
- Allow existing services to be connected and create an alternative to the Edinburgh - Glasgow main line, reducing congestion at peak times.

Evaluation Objectives

2.13 The evaluation undertaken by CH2M Hill included the following objectives:

- To undertake a Stage 1 Outcome Evaluation¹ of the scheme.
- To consider the practicality of the draft Rail Evaluation Guidance drawn up by Transport Scotland.

2.14 The aim of the Airdrie-Bathgate Stage 1 Outcome Evaluation was to provide an early assessment of the extent to which the project is on track to reach its objectives, through the examination of relevant monitoring data.

Data Sources Used

2.15 A number of data sources was used to inform this evaluation. These included LENNON (Latest Earnings Networked Nationally Overnight) to inform revenue/pricing data, patronage and trip destinations by station figures; ScotRail Passenger Rail counts to provide the figures on the numbers of boarders as well as the Scottish Neighbourhood Statistics (SNS) to inform the economic activity data for the local authorities affected by the development of the line.

2.16 As LENNON data were only available from 2009/10 onwards, ORR (Office of Rail Regulation) Station Usage Data were also used to provide information on the years preceding the operation of the link.

¹ The purpose of a Stage 1 Outcome Evaluation is to provide a high level assessment of the extent to which a project is on track to meet its objectives. Stage 1 Outcome Evaluation may also provide an opportunity to assess mitigation measures to prevent, reduce, remedy or offset any emerging adverse impacts of the project.

Report Structure

2.17 Chapter 3 gives an overview of how the Airdrie to Bathgate service is operating. An initial indication of how the Airdrie to Bathgate rail link improvement is progressing towards achieving its objectives is provided in Chapter 4, based on the evidence available at the time of preparing the report. Chapter 5 presents comments on the draft rail evaluation guidance based on experience of using it to undertake the Stage 1 Outcome Evaluation.

3 OPERATION OF THE AIRDRIE TO BATHGATE SERVICE

3.1 This chapter outlines the operation of the Airdrie to Bathgate service before and after the rail link improvements, in terms of the following:

- Services Using the Route;
- Patronage and Revenue;
- Travel Patterns;
- Journey Times; and
- Train Loadings.

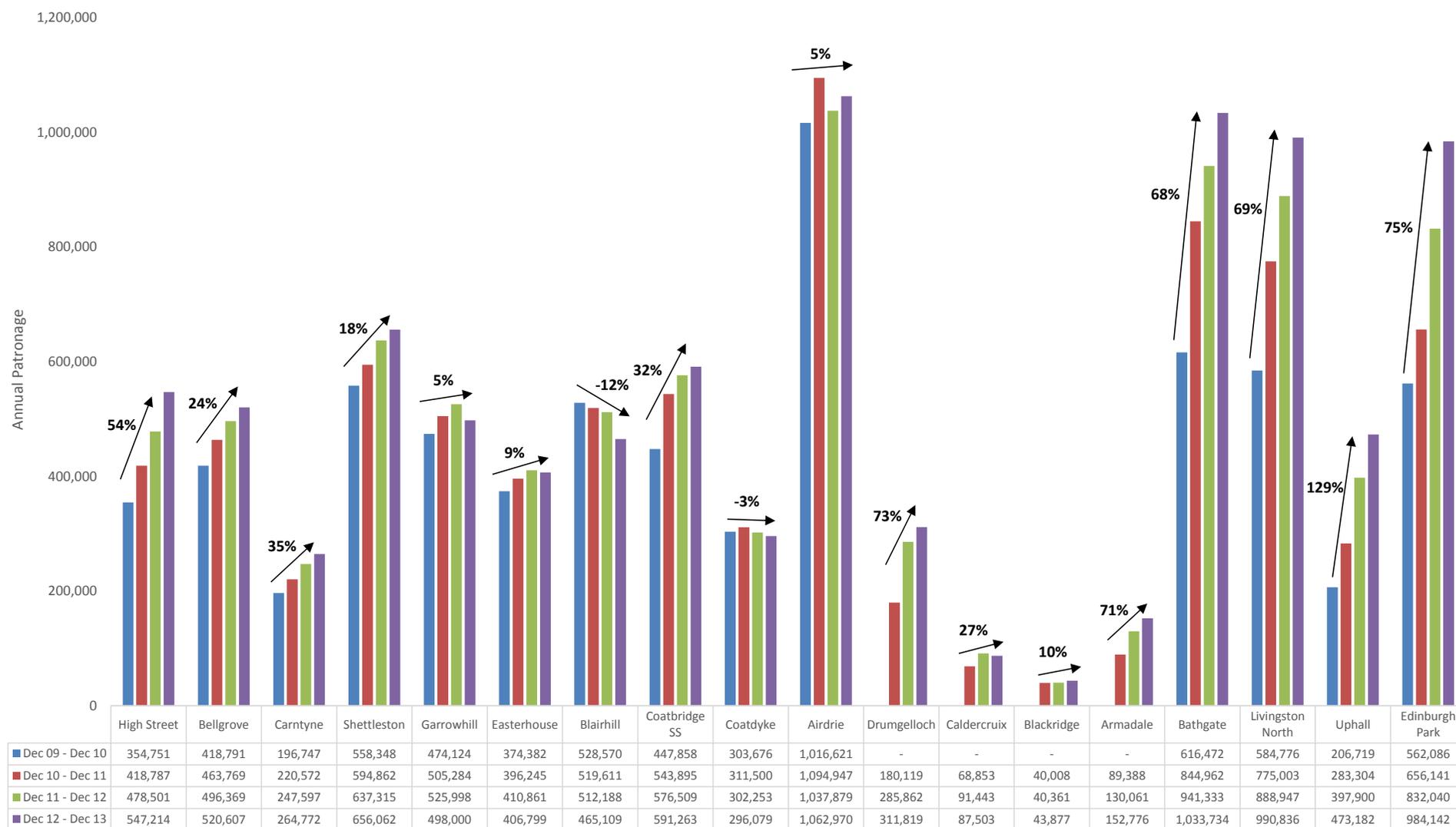
Services Using the Route

3.2 Details of the post opening services using the Airdrie to Bathgate line are contained in the May 2013 timetable contained in Appendix A.

Patronage and Revenue

3.3 Figure 3.1 and Figure 3.2 show the annual patronage (boarders and alighters) and revenue respectively from the LENNON (Latest Earnings Networked Nationally Overnight) database for stations between High Street and Edinburgh Park. The revenue data has been converted to 2013/14 prices to remove the impact of inflation and show real increases over time.

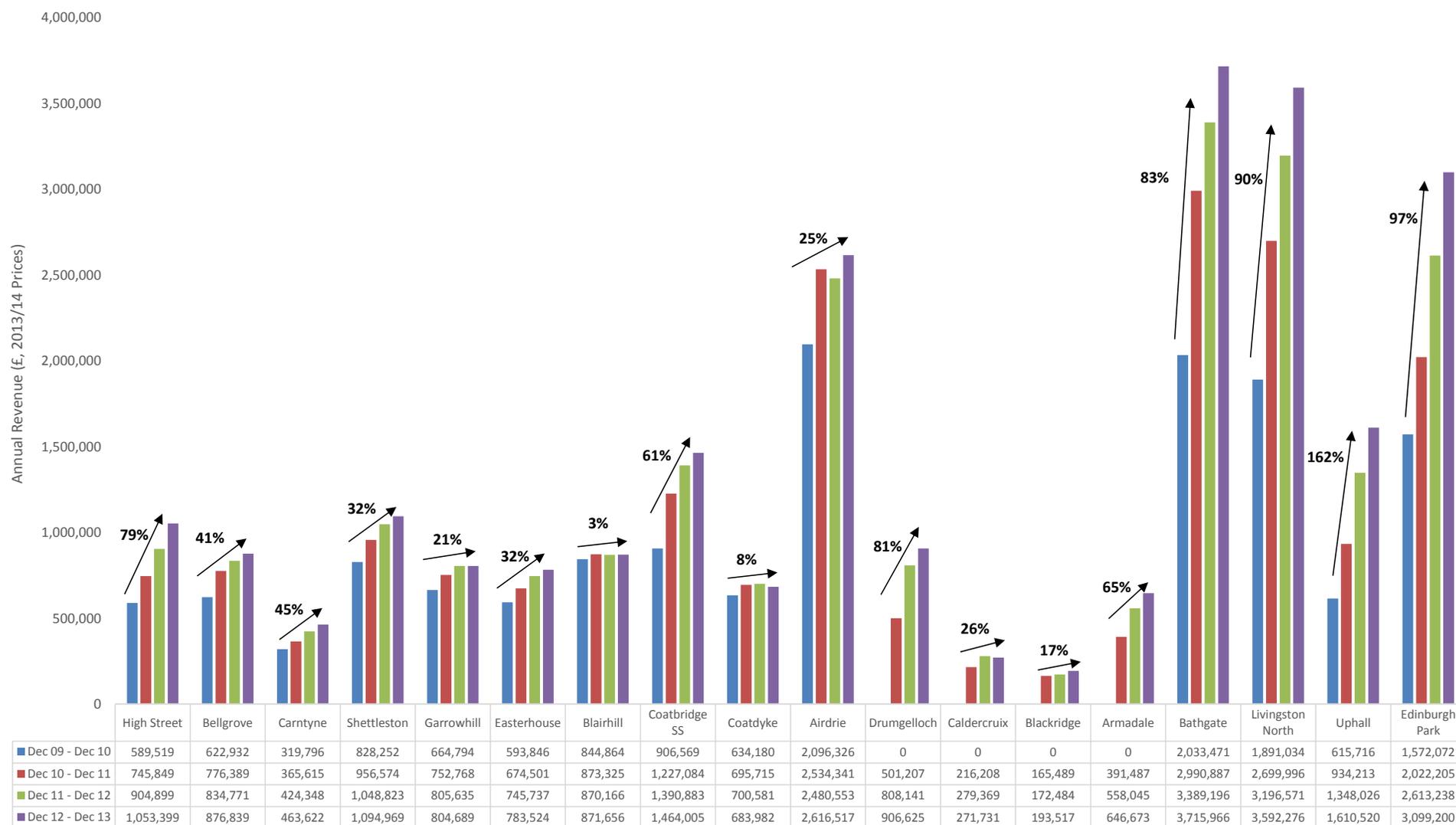
Figure 3.1: Annual Patronage by Station (December 2009 – December 2013)



Source: LENNON

Note: Drumgelloch, Caldercruix and Armadale stations didn't open until March 2011. The Drumgelloch data for Dec 09 – Dec 10 has been excluded from the chart as the existing Drumgelloch station closed in May 2010 and train services were replaced by bus services until the new Drumgelloch station opened in March 2011.

Figure 3.2: Annual Revenue (£, 2013/14 prices) by Station (December 2009 – December 2013)



Source: LENNON

Note: Drumgelloch, Caldercruix and Armadale stations didn't open until March 2011. Drumgelloch data for Dec 09 – Dec 10 has been excluded from the chart as the existing Drumgelloch station closed in May 2010 and train services were replaced by bus services until the new Drumgelloch station opened in March 2011.

- 3.4 As can be seen in Figure 3.1, the patronage at the majority of existing stations appear to have increased between the year prior to the Airdrie to Bathgate rail link opening in December 2010 and December 2013. This equates to a total increase in patronage of 31% over the same period. This can be compared with growth of 14% across all UK regional franchise operators between the years ending 2009-10 Q3 and 2013-14 Q3².
- 3.5 Many of the largest patronage increases have been at stations between Edinburgh and Bathgate where the frequency of services has doubled from two to four trains per hour (tph). Patronage increased by 75%, 69% and 68% respectively at Edinburgh Park, Livingston North and Bathgate in the first three years since the Rail Link opened, with the largest increase at Uphall where patronage increased by 129%.
- 3.6 The significant increase at Drumgelloch may be a result of a new car park which was constructed as part of the Airdrie to Bathgate rail link improvement. It is possible that the impact of this new car park can also be seen in the initial fall in patronage at Airdrie after opening, as passengers switched to using Drumgelloch. The car parks at Uphall and Coatbridge Sunnyside have also been extended which may have had a positive impact on patronage at these stations.
- 3.7 The growth in patronage on the western section of the line towards Glasgow has been particularly strong with growth of 54%, 35% and 24% at High Street, Carntyne and Bellgrove respectively in the first three years of operation since December 2010. Patronage at existing stations between High Street and Airdrie increased by 32% overall in the first three years.
- 3.8 Patronage fell at Blairhill (-12%) and Coatdyke (-3%) over the same period but demand at these stations may have been impacted by the new car park at Coatbridge Sunnyside (referred to as Coatbridge SS in Figure 3.1) where patronage increased by 32%.
- 3.9 Figure 3.2 shows that the highest yields on the line between Glasgow and Edinburgh are at Bathgate, Livingston North, Edinburgh Park and Airdrie.
- 3.10 Figure 3.2 also shows that the changes in revenue have shown similar trends to the changes in patronage. The percentage increases are generally larger than patronage as average ticket prices have increased by more than inflation, which explains why patronage at Coatdyke and Blairhill has declined over the last three years but revenue has increased over the same time period. The largest increases in revenue have been on the eastern section of the line between Bathgate and Edinburgh Park where revenue increased by at least 83% at each of these stations. This may be due, in part, to the higher rail fares charged for travel between Bathgate and Edinburgh on the eastern section of the route when compared to the Airdrie to Glasgow section.
- 3.11 Average yield is calculated by dividing total revenue by total patronage to give the average price of a one-way journey. The average yield by station for the year prior to the opening of the Airdrie to Bathgate rail link and the three years following opening are shown in Table 3.1.

² <https://dataportal.orr.gov.uk/>

Table 3.1: Average Yield (£, 2013/14 Prices) by Station (December 2009 to December 2013)

Station	Time Period				% Growth
	Dec 09 – Dec 10	Dec 10 – Dec 11	Dec 11 – Dec 12	Dec 12 – Dec 13	
High Street	1.66	1.78	1.89	1.93	16%
Bellgrove	1.49	1.67	1.68	1.68	13%
Carntyne	1.63	1.66	1.71	1.75	8%
Shettleston	1.48	1.61	1.65	1.67	13%
Garrowhill	1.40	1.49	1.53	1.62	15%
Easterhouse	1.59	1.70	1.82	1.93	21%
Blairhill	1.60	1.68	1.70	1.87	17%
Coatbridge Sunnyside	2.02	2.26	2.41	2.48	22%
Coatdyke	2.09	2.23	2.32	2.31	11%
Airdrie	2.06	2.31	2.39	2.46	19%
Drumgelloch†	Not Applicable	2.78	2.83	2.91	4%
Caldercruix†	Not Applicable	3.14	3.06	3.11	-1%
Blackridge	Not Applicable	4.14	4.27	4.41	7%
Armadalet†	Not Applicable	4.38	4.29	4.23	-3%
Bathgate	3.30	3.54	3.60	3.59	9%
Livingston North	3.23	3.48	3.60	3.63	12%
Uphall	2.98	3.30	3.39	3.40	14%
Edinburgh Park	2.80	3.08	3.14	3.15	13%

Source: LENNON

Note: † Drumgelloch, Caldercruix and Armadale stations didn't open until March 2011. Drumgelloch data for Dec 09 – Dec 10 has been excluded from the table as the existing Drumgelloch station closed in May 2010 and train services were replaced by bus services until the new Drumgelloch station opened in March 2011.

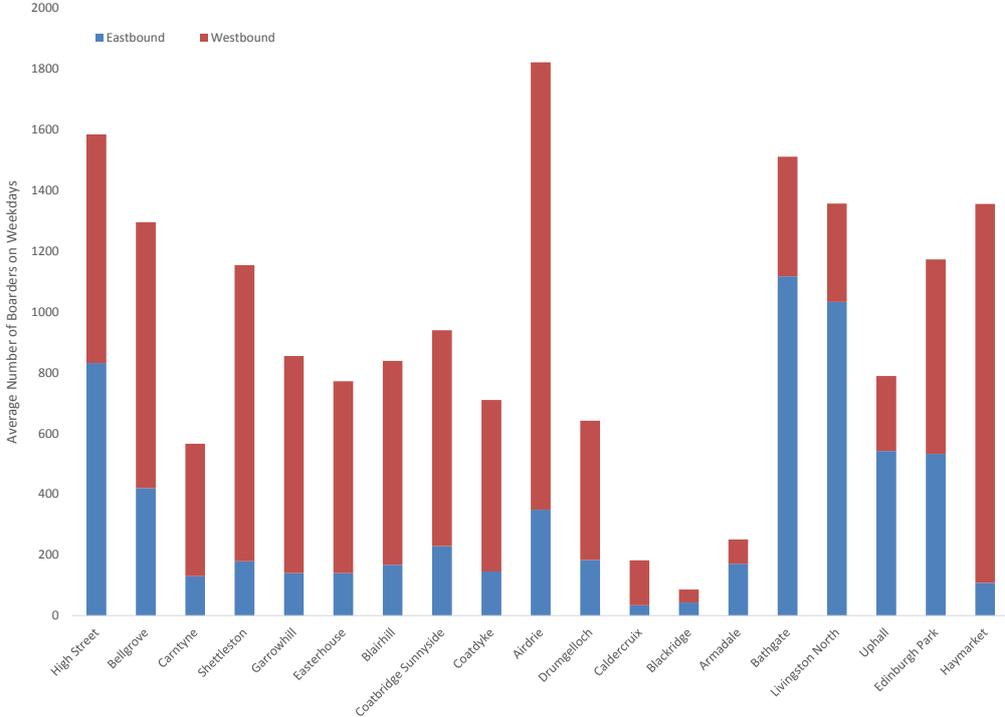
3.12 The data presented in Table 3.1 indicates that the highest average yields on the line between Glasgow and Edinburgh are at Blackridge, Armadale, Livingston North, Bathgate and Uphall. Average yield is given by the fares people pay and is affected by the mix of ticket types purchased (e.g. anytime, advanced, off-peak etc) and any discounts received (e.g. for children, railcard holders etc).

Travel Patterns

Direction of Passenger Travel

3.13 Passenger count data collected in November 2013 has been analysed to provide an indication of the direction of passenger travel. The average number of boarders on weekdays by direction for each station between Glasgow and Edinburgh via Airdrie/Bathgate is shown in Figure 3.3.

Figure 3.3: Post Opening – Average Weekday Number of Boarders by Direction



Source: Scotrail Passenger Rail Counts 2013

3.14 The data presented in Figure 3.3 indicates that the majority of passengers boarding at stations to the west of the Airdrie to Bathgate rail link travel in the westbound direction towards Glasgow during weekdays, and passengers from stations to the east of the Airdrie to Bathgate rail link are more likely to travel in the eastbound direction towards Edinburgh. This suggests that the line may be predominantly used by local commuters travelling to Glasgow and Edinburgh.

3.15 This is confirmed by passenger surveys undertaken on board services operating between Edinburgh and Helensburgh in March 2014, which included information on the Origin-Destination (O-D) of passenger trips. The results of the passenger surveys indicate that of the over 4,000 passengers who were interviewed, approximately 69% made a journey wholly within the western section of the line between Helensburgh and Blackridge and approximately 20% made a journey within the section between Armadale and Edinburgh.

3.16 Analysis of the O-D surveys suggests that a limited number of passengers are using the new line to travel between the west of Glasgow City Centre and Edinburgh. Of the 1,287 interviewees who boarded services west of Glasgow City Centre, only 13 alighted at stations between Bathgate and Haymarket and

20 at Edinburgh Waverley. This pattern is mirrored in the opposite direction with only 38 of the 1,036 interviewees who boarded services at stations between Bathgate and Edinburgh Waverley alighting at stations west of Glasgow City Centre.

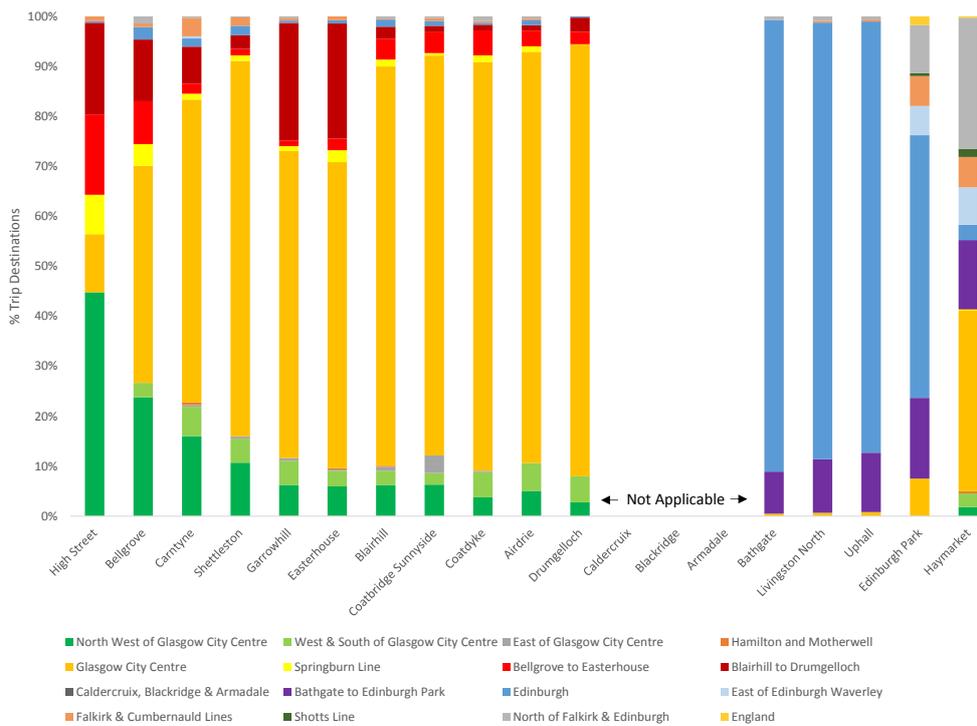
Trip Distribution (Percentage – From Popular Stations)

3.17 Pre and post opening data from LENNON has been examined to understand the impact of the scheme on trip distributions. Trip destinations for key stations of relevance were assigned to one of the following 16 zones:

- North-west of Glasgow City Centre;
- Glasgow City Centre;
- West and south of Glasgow City Centre;
- East of Glasgow City Centre;
- Bellgrove to Easterhouse;
- Blairhill to Drumgelloch;
- Caldercruix, Blackridge & Armadale;
- Falkirk and Cumbernauld lines;
- Shotts line;
- Springburn line;
- Bathgate to Edinburgh Park;
- North of Falkirk and Edinburgh;
- Edinburgh;
- East of Edinburgh Waverley;
- Hamilton and Motherwell lines; and
- England.

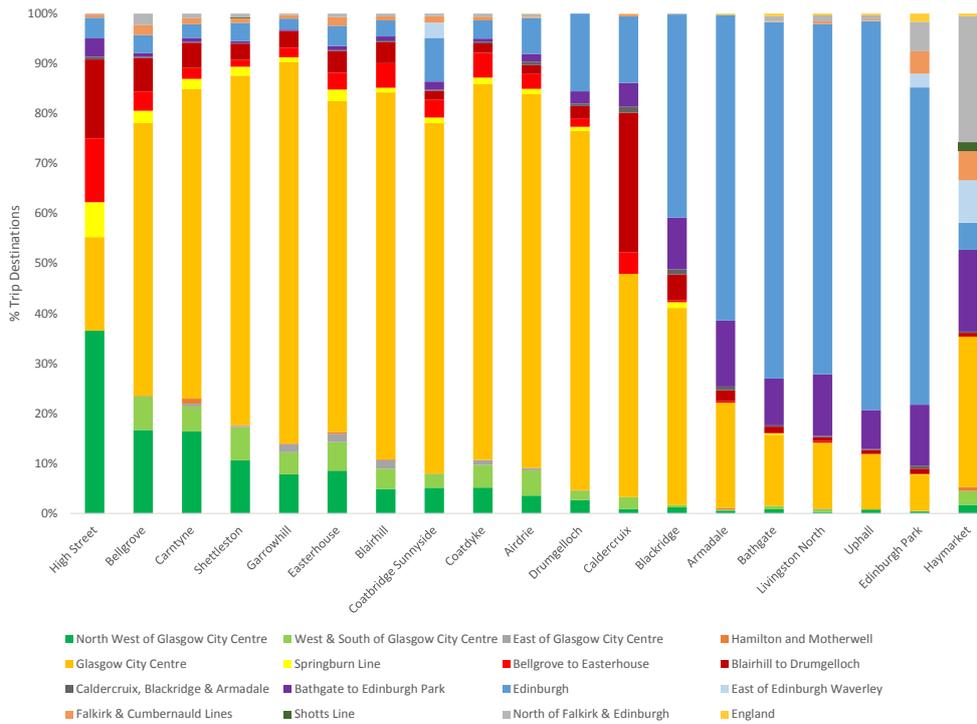
3.18 Figure 3.4a presents the trip destinations by zone for Period 8 in 2010/11 before the Airdrie to Bathgate rail link was opened and Figure 3.4b presents trip destinations for Period 8 in 2013/14 following the opening of the Airdrie to Bathgate rail link. It should be noted that the data includes all trip destinations from each station and not only those of journeys which use the Glasgow to Edinburgh via Airdrie line. As a result the pattern of destinations originating from Edinburgh Park and Haymarket may not represent the distribution of destinations of passengers who board Airdrie line services.

Figure 3.4a: % Trip Destinations by Station for 2010/11 Period 8



Source: LENNON

Figure 3.4b: % Trip Destinations by Station for 2013/14 Period 8

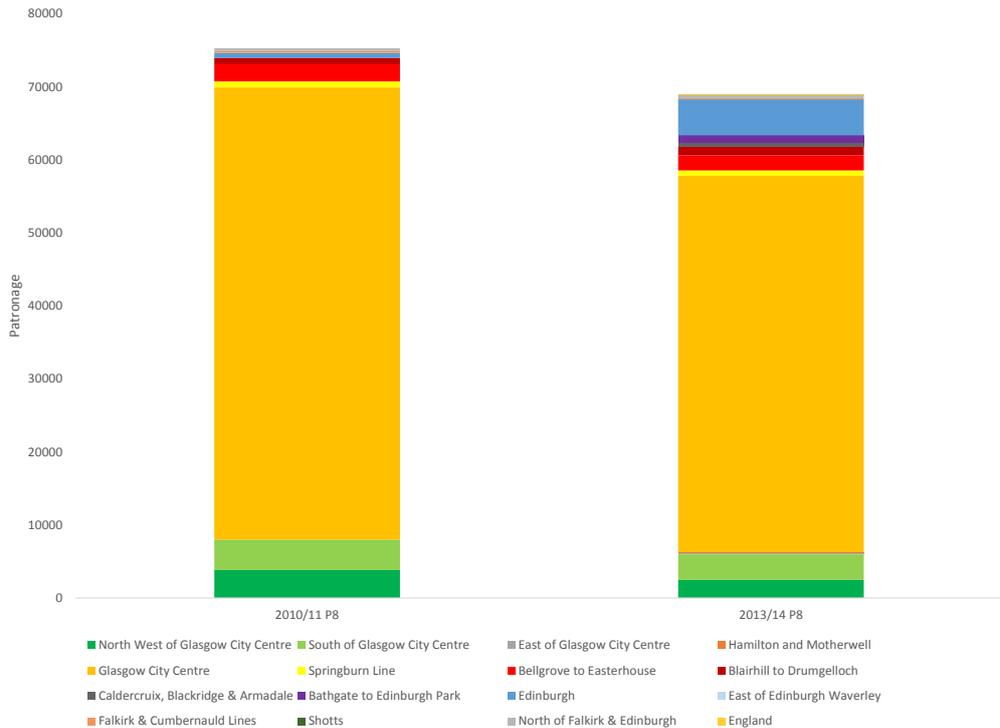


Source: LENNON

3.19 The pre-opening data presented in Figure 3.4a shows that the majority of journeys to the west of Airdrie are to Glasgow, and to the east of Bathgate are to Edinburgh before the construction of the Airdrie to Bathgate rail link.

- 3.20 The post-opening data presented in Figure 3.4b shows that the scheme has had an impact on the distribution of trip destinations of all stations on the line. Stations on the eastern section have been most affected with trips to Glasgow City Centre from Bathgate, Livingston North and Uphall rising from just above zero in 2010/11 Period 8 to between 11% and 13% in 2013/14 Period 8. The greater extent of the change in trip destinations from stations on the eastern part of the line may also help to explain the larger growth in average yields from the stations shown in Table 3.1 as the proportion of passengers travelling to destinations further away with higher fares has increased.
- 3.21 The trip destinations of the three new stations (Caldercruix, Blackridge and Armadale) varied, with the proportion of trips to Edinburgh increasing the further east the station is located.
- 3.22 The proportion of trips from Garrowhill and Easterhouse to stations between Blairhill and Drumgelloch fell significantly between 2010/11 and 2013/14. This change is due to scholar season tickets which used to be issued for travel to and from St. Ambrose High School which is located in Blairhill but were withdrawn following the relocation of the school as they were no longer needed.
- 3.23 Further analysis of trip destinations from Airdrie was undertaken to understand the impact of the Airdrie to Bathgate link on trip distribution. The absolute number of trip destinations between Period 8 in 2010/11 and 2013/14 is shown in Figure 3.5.

Figure 3.5: Absolute Number of Trip Destinations for Airdrie in Period 8 for 2010/11 and 2013/14

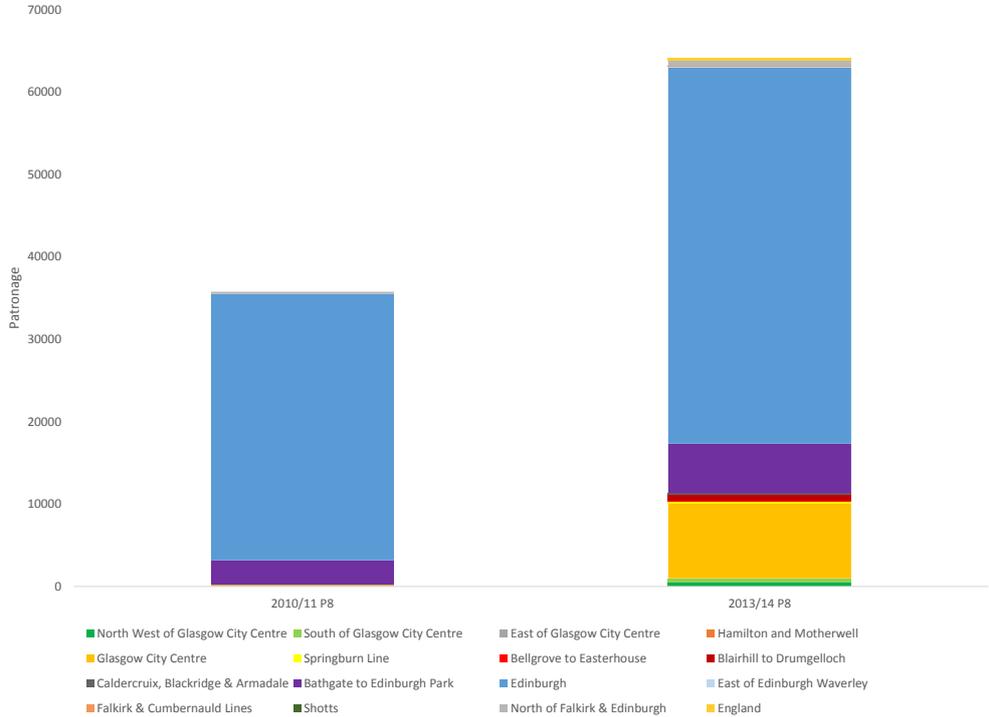


- 3.24 Figure 3.5 shows that there has been a decrease in the number of trips originating from Airdrie in Period 8 between 2010/11 and 2013/14. This is likely to be explained by the closure of Drumgelloch station in May 2010 before its relocation which will have caused many passengers who previously used Drumgelloch to switch to Airdrie inflating the passenger numbers there in Period 8 in 2010/11.
- 3.25 The data also shows that there has been a significant increase in the number of trips to destinations in the east. The number of trips to Edinburgh increased six fold between Period 8 in 2010/11 and 2013/14 and the number of trips to stations between Bathgate and Edinburgh Park increased from only 2 to 1,016 over the same time period.

Trip Distribution (Absolute Numbers – From Bathgate)

- 3.26 One of the stations with the largest change in the distribution of trip destinations was Bathgate and the absolute change in the number of trip destinations between Period 8 in 2010/11 and 2013/14 is shown in Figure 3.6.

Figure 3.6: Absolute Number of Trip Destinations from Bathgate in Period 8 for 2010/11 and 2013/14

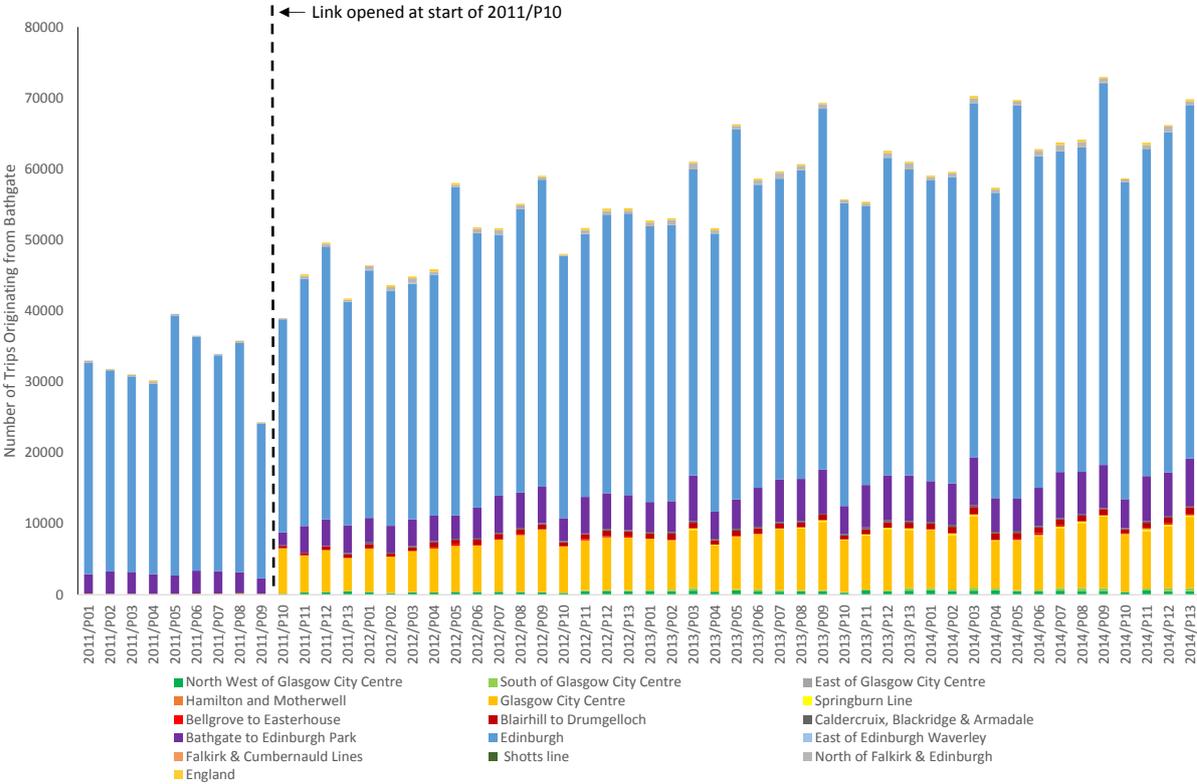


Source: LENNON

- 3.27 The data presented in Figure 3.6 shows that the opening of the Airdrie to Bathgate rail link has had a significant impact on both the number and distribution of trips originating from Bathgate. The total number of trips from Bathgate in Period 8 increased by 79% from 35,747 in 2010/11 Period 8 to 64,134 in 2013/14 Period 8. Trips to Edinburgh Waverley and Haymarket accounted for 47% of this increase with 32% to Glasgow City Centre and 8% to Edinburgh Park.

- 3.28 The number of individual trip destinations from Bathgate also rose sharply from 99 in 2010/11 Period 8 to 204 in 2013/14 Period 8 largely explained by the new opportunities provided for travelling to Glasgow. There was also an increase in the number of trip destinations to the east and the number of journeys to some destinations reached by interchanging in Edinburgh increased significantly such as to Stirling (367%), Newcastle (131%) and Aberdeen (37%).
- 3.29 The increase in trips to destinations to the east is likely to be explained by the doubling of train frequencies on the Bathgate to Edinburgh section of the line which will have reduced interchange times for connecting services at Haymarket and Edinburgh Waverley, making longer distance trips more viable. Passengers making these longer trips may also help to explain some of the increases in average yields from stations on the eastern section of the line shown in Table 3.1.
- 3.30 The Bathgate data was analysed over time to see how quickly the change in trip distribution took place. Figure 3.7 presents the number of trips originating from Bathgate by destination from 2010/11 to 2013/14.

Figure 3.7: Number of Trips Originating from Bathgate by Destination 2010/11 to 2013/14



Source: LENNON

- 3.31 The data presented in Figure 3.7 shows that the opening of the new rail link had a significant and immediate impact on the distribution of trips originating from Bathgate. Although the absolute number of trips to Edinburgh increased over the period, as a proportion, the total trips fell from around 90% before the rail link opened to less than 75% within the first year of the rail link opening.

3.32 The largest increase in the proportion of Bathgate trip destinations was to Glasgow city centre which increased from a few hundred trips per period before the link opened to average more than 8,000 trips per period in 2013/14. The data also showed increases to destinations which previously had very few trips originating from Bathgate such as the north, west and south of Glasgow city centre.

Journey Times

3.33 The journey time information³ presented in the *Economic Activity and Location Impacts Analysis Report* (MVA, 2006) showed journey times for all types of public transport trips before the Airdrie to Bathgate rail link was opened. The analysis was repeated as part of this evaluation for a selection of rail trips using the Airdrie-Bathgate line and the comparison of journey times is shown in Tables 3.2a and 3.2b.

Table 3.2a: Pre & Post Opening Journey Times from Bathgate to Glasgow

Travel Times	Duration	Changes
<i>Pre Opening - 2006 Weekday AM Peak⁴</i>		
07:15 - 08:50	1 hr 35 mins	1
07:20 - 08:56	1 hr 36 mins	2
<i>Post Opening - 2014 Weekday AM Peak⁵</i>		
07:43 - 08:37	54 mins	0
07:58 - 08:44	46 mins	0

Table 3.2b: Pre & Post Opening Journey Times from Airdrie to Edinburgh Park

Travel Times	Duration	Changes
<i>Pre Opening - 2006 Weekday AM Peak⁶</i>		
06:56 - 08:31	1 hr 35 mins	2
07:19 - 08:48	1 hr 29 mins	2
<i>Post Opening - 2014 Weekday AM Peak⁷</i>		
07:55 - 08:38	43 mins	0
08:15 - 08:47	32 mins	0

³ Based on information from the Traveline Scotland website - <http://www.travelinescotland.com>

⁴ Economic Activity and Location Impacts Analysis, MVA (2006) – page 19

⁵ <http://www.travelinescotland.com>

⁶ Economic Activity and Location Impacts Analysis, MVA (2006) – page 19

⁷ <http://www.travelinescotland.com>

3.34 The comparison of pre and post opening journey times presented in Tables 3.3a and 3.3b indicate that the Airdrie to Bathgate rail link has significantly reduced journey times from Bathgate to Glasgow and from Airdrie to Edinburgh, with fewer changes of mode required as a direct impact of the direct rail service enabled by the new section of the line.

3.35 Journey times have also been analysed for key trips which were possible by rail before the Airdrie to Bathgate rail link opened. The key trips are as follows:

- Westbound towards Glasgow in the AM peak and inter peak periods;
- Eastbound from Glasgow in the PM peak;
- Eastbound to Edinburgh in the AM peak and inter peak periods; and
- Westbound from Edinburgh in the PM peak.

3.36 Table 3.3a presents journey times in the AM peak between selected stations and Glasgow Queen Street Low Level in the December 2009 and December 2013 timetables.

Table 3.3a: Pre & Post Opening Journey Times to Glasgow Queen St Low Level (AM Peak 07:00-10:00)

Service Origin	tph ⁸	Journey Time (mins) to Glasgow Queen St Low Level		
		Airdrie	Blairhill	Garrowhill
<i>Pre Opening - December 2009 Timetable</i>				
Drumgelloch (Stopper)	2	25.0	18.0	12.0
Airdrie (Stopper)	2	25.0	18.0	12.0
Airdrie (Semi-Fast)	1	20.0	13.0	Not Applicable
<i>Post Opening - December 2013 Timetable</i>				
Edinburgh (Stopper)	2	26.3	18.5	12.0
Airdrie (Stopper)	2	25.8	18.0	12.0
Edinburgh (Semi-Fast) [†]	2	23.0	16.7	Not Applicable

Sources: National Rail Timetable (Sunday 13th December 2009 – Saturday 22nd May 2010) & Electronic National Rail Timetable (Sunday 8th December 2013 – Saturday 17th May 2014)

Note: † The 07:14, 09:14 & 09:44 arrivals at Glasgow Queen St Lower Level do not call at Blairhill.

Note: the morning peak as defined for the current ScotRail franchise is 07:30-09:30 into Glasgow.

3.37 The comparison of pre and post opening journey times presented in Table 3.3a indicates that average journey times for local commuter trips into Glasgow have increased except for passengers who use the all station stopping services starting at Airdrie.

⁸ Trains per hour.

3.38 The increase in journey times for some services may be due to changes in train paths in order to integrate the timetable with Argyle line services.

3.39 Table 3.3b presents journey times from stations to the east of Glasgow arriving at Glasgow Queen Street Low Level in the inter-peak.

Table 3.3b: Pre & Post Opening Journey Times to Glasgow Queen St Low Level (Inter Peak 10:00-16:00)

Service Origin	tph	Journey Time (mins) to Glasgow Queen St Low Level		
		Airdrie	Blairhill	Garrowhill
<i>Pre Opening - December 2009 Timetable</i>				
Drumgelloch (Stopper)	2	25.1	18.1	12.1
Airdrie (Stopper)	2	25.0	18.0	12.0
<i>Post Opening - December 2013 Timetable</i>				
Edinburgh (Stopper)	2	26.3	18.3	12.3
Airdrie (Stopper)	2	26.0	18.0	12.0
Edinburgh (Semi-Fast)	2	23.2	Not Applicable	Not Applicable

Sources: National Rail Timetable (Sunday 13th December 2009 – Saturday 22nd May 2010) & Electronic National Rail Timetable (Sunday 8th December 2013 – Saturday 17th May 2014)

Note: the end of the morning peak, which implies the start of the inter peak period, as defined for the current ScotRail franchise is 09:30 into Glasgow.

3.40 The comparison of pre and post opening journey times presented in Table 3.3b indicates that in the inter peak period, there has been a significant increase in train frequency from four to six trains per hour since the Airdrie to Bathgate rail link opened and train frequencies are now comparable with those in the AM peak. As in the AM peak some journey times have increased slightly to integrate the timetable with other services.

Table 3.3c presents the journey times on eastbound services from Glasgow Queen St in the PM peak.

Table 3.3c: Pre & Post Opening Journey Times from Glasgow Queen St Low Level (PM Peak 16:00-19:00)

Service Origin	tph	Journey Time (mins) from Glasgow Queen St Low Level		
		Airdrie	Blairhill	Garrowhill
<i>Pre Opening - December 2009 Timetable</i>				
Drumgelloch (Stopper)	2	25.8	18.8	11.8
Airdrie (Stopper)	2	27.0	19.0	12.0
Airdrie (Semi-Fast)	1	23.3	13.3	Not Applicable
<i>Post Opening - December 2013 Timetable</i>				
Edinburgh (Stopper)	2	27.0	19.0	13.0
Airdrie (Stopper)	1.7^	28.0	19.0	12.2
Edinburgh (Semi-Fast)†	1.7^	21.4	14.3	Not Applicable

Sources: National Rail Timetable (Sunday 13th December 2009 – Saturday 22nd May 2010) & Electronic National Rail Timetable (Sunday 8th December 2013 – Saturday 17th May 2014)

Note: † The 17:54 & 18:24 departures from Glasgow Queen St Lower Level don't call at Blairhill

Note: ^ 1.7 tph is based on 5 services operating in the three hour period

Note: the evening peak as defined in the current ScotRail franchise is 16:00-18:00 out of Glasgow.

3.41 The comparison of pre and post opening journey times presented in Table 3.3c indicates that there is one additional service in the PM peak overall and there are now five rather than three semi-fast services which run non-stop between High Street and Blairhill or Coatbridge Sunnyside. The number of all station stopping services has decreased, which will have reduced train frequencies for passengers using stations between Bellgrove and Blairhill. As in the other time periods journey times have increased for many services since the Airdrie to Bathgate rail link opened which is partly offset by the increases in train frequencies.

3.42 The journey times into Edinburgh Waverley pre and post opening of the Airdrie to Bathgate rail link were also analysed. A comparison of journey times from stations to the west of Edinburgh and Edinburgh Waverley in the AM peak and inter peak is shown in Table 3.4a.

Table 3.4a: Pre & Post Opening Journey Times to Edinburgh Waverley (AM Peak 07:00-10:00 and Inter Peak 10:00-16:00)

Time Period	tph	Journey Time (mins) to Edinburgh Waverley			
		Bathgate	Livingston N	Uphall	Edinburgh Pk
Pre Opening - December 2009 Timetable					
AM Peak	2	31.5	26.5	22.3	12.2
Interpeak	2	31.8	27.8	23.8	12.8
Post Opening - December 2013 Timetable					
AM Peak	4	27.3	23.3	20.3	11.9
Interpeak	4	26.8	22.8	19.8	11.3

Sources: National Rail Timetable (Sunday 13th December 2009 – Saturday 22nd May 2010) & Electronic National Rail Timetable (Sunday 8th December 2013 – Saturday 17th May 2014)

3.43 The comparison of pre and post opening journey times presented in Table 3.4a indicates that in addition to the doubling of frequency from two to four tph there have also been significant improvements in journey times. The largest reductions in journey times were from Bathgate and Livingston North to Edinburgh Waverley in the inter peak which have both decreased by 5 minutes.

3.44 The significant improvement in the level of service provided at these stations since the opening of the Airdrie to Bathgate rail link suggest that the benefits of the Airdrie to Bathgate scheme were greatest on the eastern section of the line. This may help to explain why patronage and revenue increased significantly more at stations on this section of the line than in the west (shown in Figures 3.1 and 3.2).

3.45 Journey times from Edinburgh Waverley in the PM peak pre and post opening of the Airdrie to Bathgate rail link are shown in Table 3.4b.

Table 3.4b: Pre and Post Opening Journey Times from Edinburgh Waverley (PM Peak 16:00-19:00)

Time Period	tph	Journey Time (mins) from Edinburgh Waverley			
		Bathgate	Livingston N	Uphall	Edinburgh Pk
Pre Opening - December 2009 Timetable					
PM Peak	2	30.2	23	19	7
Post Opening - December 2013 Timetable					
PM Peak	4	26.5	21.9	18.4	10.4

Sources: National Rail Timetable (Sunday 13th December 2009 – Saturday 22nd May 2010) & Electronic National Rail Timetable (Sunday 8th December 2013 – Saturday 17th May 2014)

3.46 The comparison of pre and post opening journey times presented in Table 3.4b indicates that as in the AM peak and inter peak, the frequency of services has increased and journey times have improved. An exception to this is journey times from Edinburgh Waverley to Edinburgh Park which have increased from 7 to over 10 minutes.

3.47 Analysis of journey times between Glasgow and Edinburgh on the four lines linking the two cities was undertaken. Journey times for services arriving at Glasgow or Edinburgh in the AM peak are shown in Table 3.5.

Table 3.5: Post Opening Journey Times Between Glasgow and Edinburgh (AM Peak 07:00-10:00)

Line	Number of Services	To / From Glasgow Station	Journey Time (mins)		
			Minimum	Maximum	Average
<i>Journey Times from Edinburgh Waverley to Glasgow - May 2014 Timetable</i>					
via Airdrie	11	Queen St	64	82	72
via Carstairs	3	Central	58	90	70
via Falkirk	11	Queen St	49	55	53
via Shotts	5	Central	71	98	86
<i>Journey Times from Glasgow to Edinburgh Waverley - May 2014 Timetable</i>					
via Airdrie	11	Queen St	64	81	73
via Carstairs	3	Central	62	83	70
via Falkirk	11	Queen St	50	55	52
via Shotts	6	Central	69	96	83

Sources: National Rail Timetable (Sunday 18th May 2014 – Saturday 13th December 2014)

Note: the morning peak as defined for the current ScotRail franchise is slightly different: 07:30-09:30 into Glasgow.

3.48 Table 3.5 indicates that the Falkirk line provides the fastest route for travelling between Glasgow and Edinburgh in the AM peak with even its slowest services offering faster journey times than the quickest services on the other lines. The Airdrie line offers quicker average journey times than the Shotts line and operates at a higher frequency than the Carstairs line suggesting that it may provide an attractive alternative for passengers if the Falkirk line is overcrowded.

3.49 It should be noted that major upgrades are planned for the Falkirk and Shotts lines for completion in 2016 and 2019 respectively. These schemes include completing the electrification of each route and are likely to impact on the relative attractiveness of each line for journeys between Glasgow and Edinburgh.

4 PERFORMANCE AGAINST OBJECTIVES

Introduction

- 4.1 This chapter provides an initial indication of how the Airdrie to Bathgate rail link improvement is progressing towards achieving its objectives (as set out in Chapter 2) using available pre and post opening data, drawing on the operational indicators presented in Chapter 3.
- 4.2 The methodology for the Stage 1 Outcome Evaluation, including the sources of information used, is set out in Table 4.1.

Table 4.1: Stage 1 Outcome Evaluation Methodology

Objective	Indicator/Metric [Source]
1. Improve direct access to labour markets in Glasgow and Edinburgh for people living in North Lanarkshire and West Lothian.	<p>Average weekday number of boarders by direction [Scotrail Passenger Rail Count, 2013]</p> <p>Change in trip destinations – Period 2010/11 Period 8 vs 2013/14 Period 8 [LENNON]</p> <p>Change in AM peak journey times (Bathgate to Glasgow and Airdrie to Edinburgh) – 2006 vs 2014 [Traveline Scotland]</p> <p>Change in peak and inter-peak journey times (Airdrie to Glasgow and Bathgate to Edinburgh) – 2009 vs 2013 [National Rail]</p>
2. Encourage inward investment to and therefore stimulate economic growth in North Lanarkshire and West Lothian.	Change in Gross Value Added between 2008 and 2012 (inclusive) for North Lanarkshire and West Lothian Local Authority areas [Scottish Neighbourhood Statistics]
3. Assist in promoting social inclusion to communities in North Lanarkshire and West Lothian.	<p>Change in employment between 2008 and 2011 (inclusive) for North Lanarkshire and West Lothian Local Authority areas [Scottish Neighbourhood Statistics]</p> <p>Change in benefit claimants between 2009 and 2012 (inclusive) for North Lanarkshire and West Lothian Local Authority areas [Scottish Neighbourhood Statistics]</p> <p>Vehicle Ownership and Journey Method [Origin-Desitination Surveys, March 2014]</p>
4. Increase the number of people using public transport in Central Scotland.	<p>Change in patronage via stations on the Airdrie-Bathgate line from 2010 to 2013 [LENNON]</p> <p>Change in absolute number of trip destinations from Bathgate – Period 2010/11 Period 8 vs 2013/14 Period 8 [LENNON]</p> <p>Change in percentage of public transport journeys in North Lanarkshire and West Lothian from 2007/08 to 2013 [Scottish Neighbourhood Statistics]</p>
5. Offer a sustainable public transport alternative to the M8 and therefore reduce road congestion.	Change in annual average daily traffic and peak period traffic volumes between 2007 and 2013 [Scottish Roads Traffic Database]

Objective	Indicator/Metric [Source]
6. Allow existing services to be connected and create an alternative to the Edinburgh - Glasgow main line, reducing congestion at peak times.	<p>Journey times between Glasgow and Edinburgh between May and December 2014 [<i>National Rail</i>]</p> <p>Change in trip destinations – Period 2010/11 Period 8 vs 2013/14 Period 8 [<i>LENNON</i>]</p> <p>Train loadings in Glasgow-Edinburgh corridor during peak periods [<i>Scotrail Passenger Rail Count, 2013</i>]</p>

Objective 1

Improve direct access to labour markets in Glasgow and Edinburgh for people living in North Lanarkshire and West Lothian

- 4.3 The post opening passenger rail count data presented in Figure 3.3 suggests that the Airdrie/Bathgate line may be predominately used by local commuters travelling to Glasgow and Edinburgh during weekdays.
- 4.4 Whilst the pre and post opening timetable data presented in Tables 3.3a and 3.3c indicates that journey times for local commuters to Glasgow have in general, marginally increased, since the service has been in operation, the number and frequency of services has increased improving access. The analysis of journey times to Edinburgh presented in Tables 3.4a and 3.4b shows that service frequencies have doubled between Bathgate and Edinburgh, with significant reductions in journey times on this section of the line
- 4.5 The pre and post opening timetable data presented in Tables 3.2a and 3.2b indicates that journey times from Bathgate to Glasgow and from Airdrie to Edinburgh have significantly reduced since the service has been in operation, with weekday journey times in 2014 up to 3 times quicker than in 2006.
- 4.6 A comparison of the pre and post trip destination by station data from LENNON presented in Figures 3.4a and 3.4b indicates that there has been an increase in the number of trips from west of Airdrie to east of Bathgate (and vice versa) since the rail link was opened.

Conclusion

- 4.7 Direct access to labour markets in Glasgow and Edinburgh has been improved for local commuters. There has been an increase in train frequencies to Edinburgh, with significant reductions in journey times since the rail link opened. Whilst some local commuters to Glasgow may have experienced a slight increase in journey times following the rail link opening, these will have been offset, to some degree, by the increased frequency of services.
- 4.8 By virtue of providing a rail link between Airdrie and Bathgate, direct access between West Lothian Local Authority areas and Glasgow as well as between North Lanarkshire Local Authority areas and Edinburgh, is available.

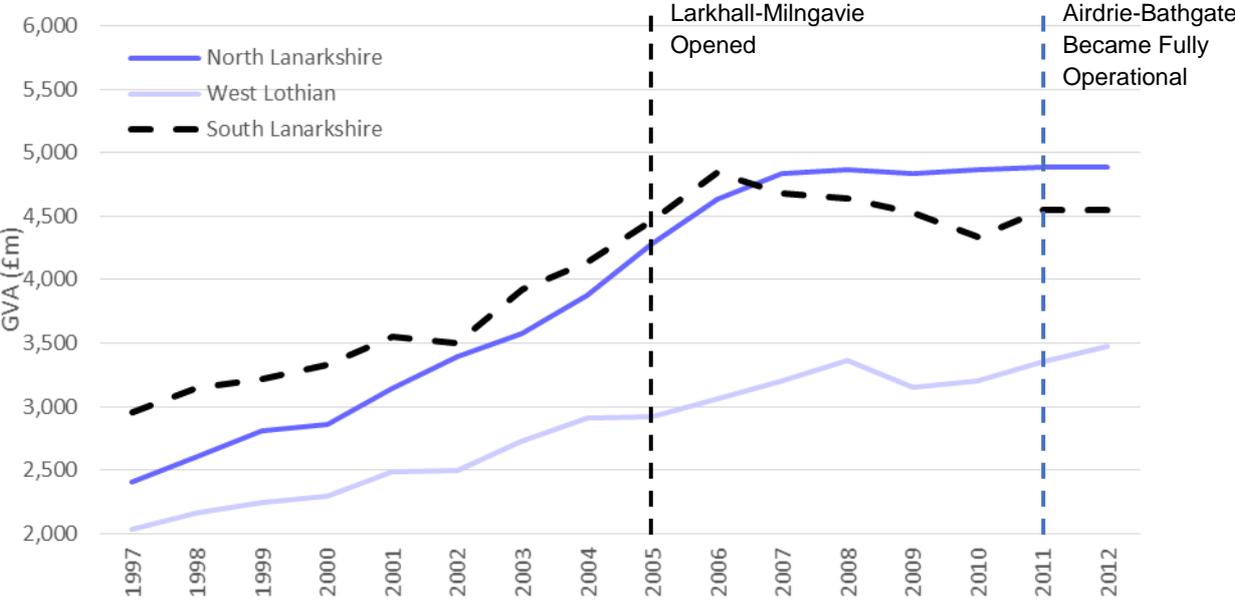
4.9 Journey times from Bathgate to Glasgow and from Airdrie to Edinburgh have significantly reduced since the service has been in operation improving access to Glasgow from the east and to Edinburgh from the west. As a result of providing improved access, the number of trips from the west to Edinburgh and the east to Glasgow appear to have increased since the rail link was opened.

Objective 2

Encourage inward investment to and therefore stimulate economic growth in North Lanarkshire and West Lothian

4.10 The Gross Value Added (GVA) data for North Lanarkshire and West Lothian Local Authority areas, from the Scottish Neighbourhood Statistics website⁹, is presented in Figure 4.1 below. GVA data for the South Lanarkshire Local Authority is also presented (due to the opening of the Larkhall to Milngavie improvement in 2005) to provide a benchmark for comparing changes in GVA.

Figure 4.1: GVA for Local Authority Areas (1997 – 2012)



4.11 The data shows that the GVA for North Lanarkshire has been fairly consistent since 2007 and that for West Lothian is generally rising in line with the level of increases seen prior to the rail link opening.

4.12 Whilst information for the East Dunbartonshire Local Authority area was not available, the GVA data for South Lanarkshire showed a slightly sharper rise the year after the Larkhall to Milngavie improvement opened than was evident in the years running up to 2005 – although a general downward trend followed for the next four years (until 2010).

⁹ <http://www.sns.gov.uk/default.aspx>

Conclusion

- 4.13 Whilst GVA for North Lanarkshire has been fairly consistent and that for West Lothian has increased, coinciding with the operation of the Airdrie to Bathgate rail link, it is not possible to attribute any change in GVA values for the North Lanarkshire and West Lothian Local Authority areas directly to the Airdrie to Bathgate rail link improvement at this early stage.
- 4.14 Whilst its impact on GVA will materialise over a longer period, it is recognised that it may be difficult to attribute any change directly to the improvement as other external factors are likely to have an influence on GVA in the Local Authority Areas.

Objective 3

Assist in promoting social inclusion to communities in North Lanarkshire and West Lothian

- 4.15 A pre and post opening comparison of the employment rate for the North Lanarkshire and West Lothian Local Authority areas, from the Scottish Neighbourhood Statistics website¹⁰, is presented in Table 4.2 below.

Table 4.2: Employment Rates for North Lanarkshire and West Lothian (2008 – 2011)

Local Authority	Percentage Employment Rate (Persons aged 16-64)			
	2008	2009	2010	2011
North Lanarkshire	70.3%	70.4%	69.1%	68.6%
West Lothian	75.2%	72.1%	73.0%	73.2%

- 4.16 The employment rates indicate that the percentage of persons employed has reduced slightly within North Lanarkshire between 2009 and 2011 and increased slightly within West Lothian over the same period.
- 4.17 A pre and post opening comparison of the number of working age benefit claimants for the North Lanarkshire and West Lothian Local Authority areas, from the Scottish Neighbourhood Statistics website¹¹, is presented in Table 4.3 below.

¹⁰ <http://www.sns.gov.uk/default.aspx>

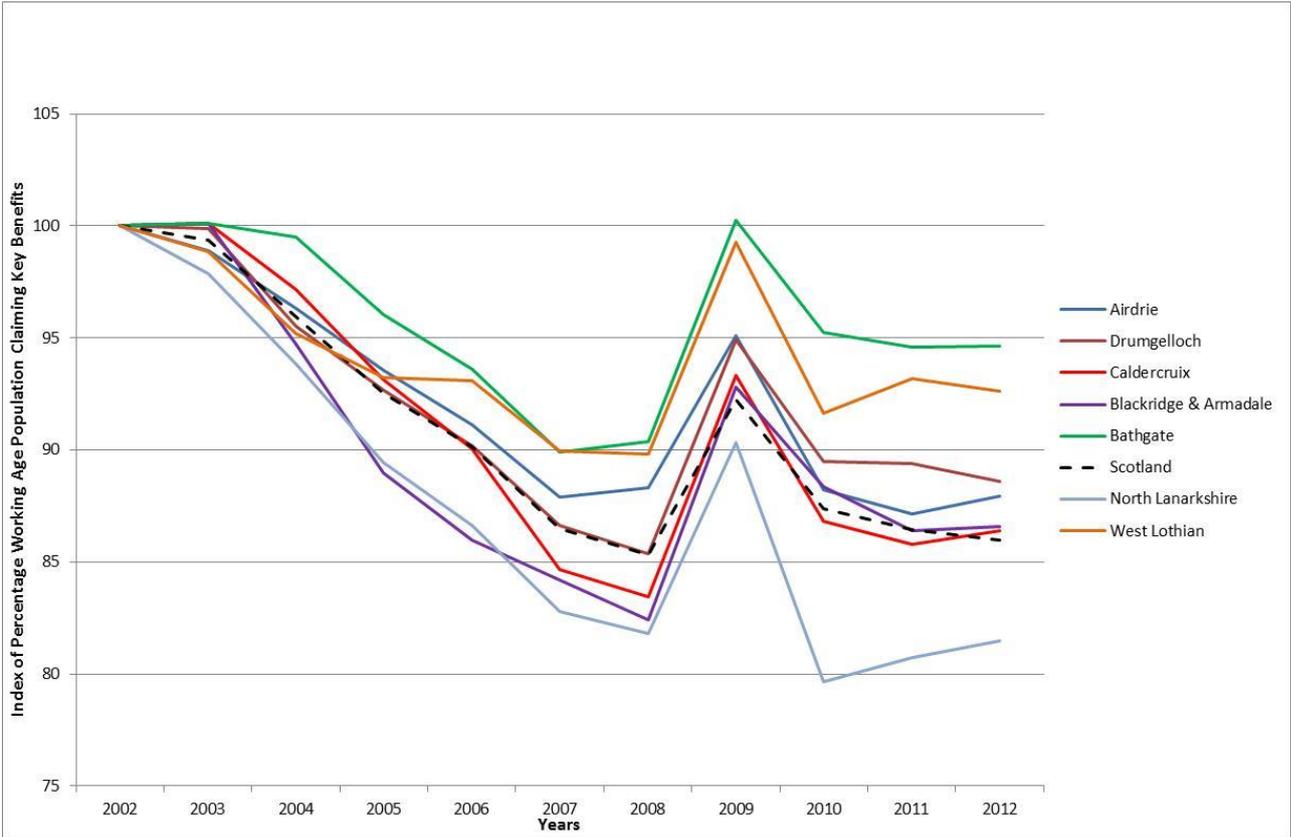
¹¹ <http://www.sns.gov.uk/default.aspx>

Table 4.3: Benefit Claimant Statistics for North Lanarkshire and West Lothian (2009 – 2012)

Local Authority	Number of Working Age Benefit Claimants			
	2009	2010	2011	2012
North Lanarkshire	45,835	45,478	45,205	44,685
West Lothian	19,018	18,970	18,765	18,330

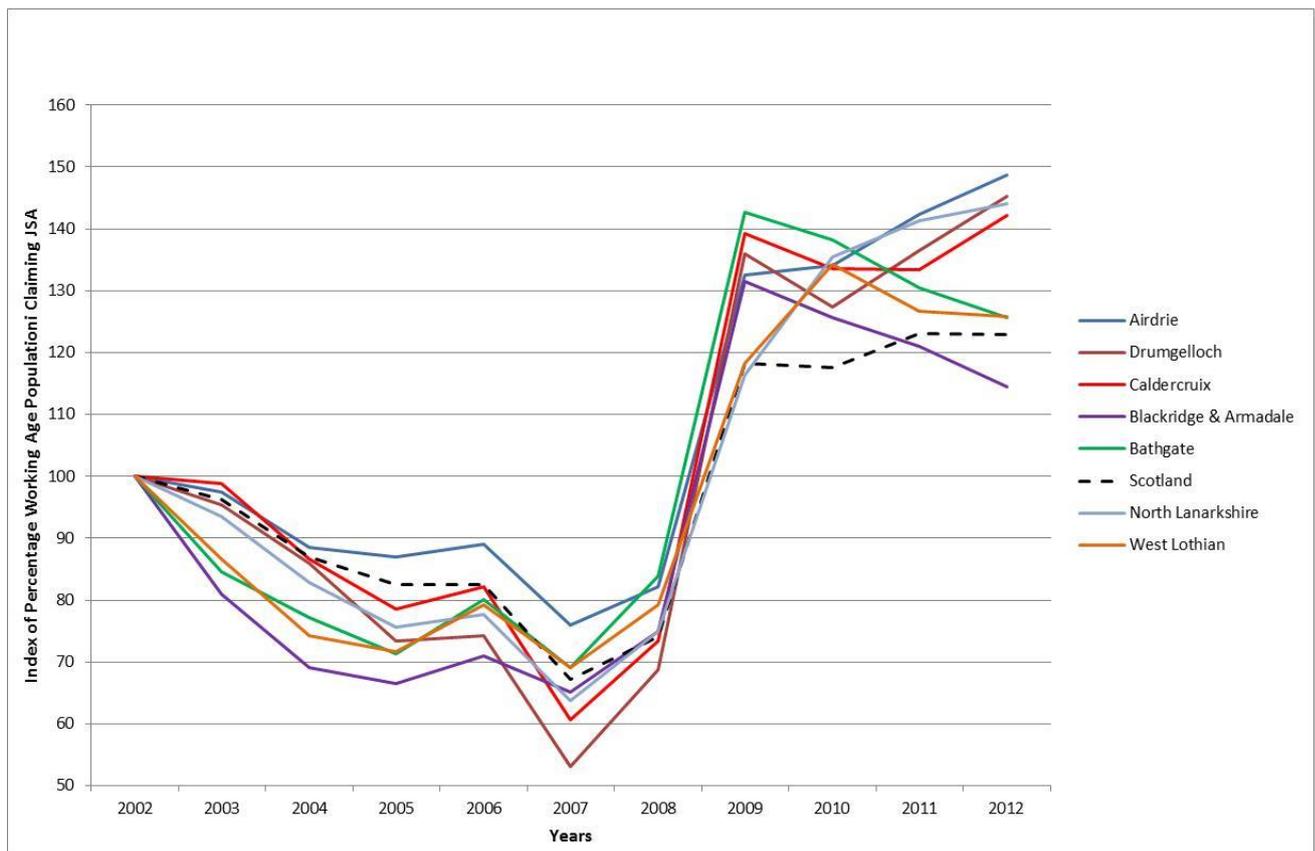
- 4.18 The analysis of the number of working age benefit claimants indicates that the number of claimants has reduced slightly (by 3% to 4%) within North Lanarkshire and West Lothian between 2009 and 2012.
- 4.19 Data at a more disaggregated level has been gathered from the Scottish Neighbourhood Survey database, using the following indicators: *'% population aged 16-64 claiming Key Benefits/Jobseekers'* until 2009 and the replacement *'% working age population claiming Key Benefits/Jobseeker's Allowance'* indicator from 2010 onwards.
- 4.20 The index of the percentage of the working age population in Scotland claiming Key Benefits is shown in Figure 4.2. This shows a sharp increase in uptake during the economic downturn in 2008-2009. Since then there has been a drop in claimants till 2010 with varied levels experiences up until 2012. The number of claimants in the areas around Blackridge and Armadale has remained almost steady from 2011-2012; in the area around Caldercruix there has been an increase in 2011-2012.

Figure 4.2: Percentage of Working Age Population Claiming Key Benefits Index (2002 – 2012)



4.21 The index of percentage of the working age population claiming Job Seeker’s Allowance (JSA) is shown in Figure 4.3. This is more volatile than the index of percentage claiming key benefits and shows a sharp increase from 2008 to 2009. Since then the overall number of claimants for Scotland has again been volatile with the number of claimants in North Lanarkshire increasing and the number of claimants in West Lothian decreasing. The number of claimants in the area around Caldercruix has been a large increase in JSA claimants since 2011; however the areas around Blackridge and Armadale stations have seen a steady decrease since 2009, possibly encouraged by the impact of the new station.

Figure 4.3: Percentage of Working Age Population Claiming Job Seeker's Allowance Index (2002 – 2012)



4.22 It is difficult to attribute any change in key benefits or JSA directly to the improvement as other external factors are likely to have a greater influence on local employment patterns.

4.23 The Origin-Destination (O-D) surveys¹² that were carried out on services travelling between Helensburgh and Edinburgh in March 2014 ascertain the reasons for the trip being made, the trip origin, the trip destination, other modes used during the journey and frequency of the journey made.

4.24 Additional questions were asked of travellers as part of the survey including:

- “How many vehicles are owned or available for use within your household?”; and
- “Prior to this rail service being available, did you regularly make this journey by another method?”.

4.25 Answers to these questions from respondents who stated that their station of origin was between Airdrie and Bathgate have been used as a measure for the impact that the Airdrie to Bathgate rail link improvement may have had on accessibility and, more generally, on social inclusion for more disadvantaged members of society who may have otherwise had no means of available transport.

¹² Sky High Count On Us OD Surveys, March 2014

4.26 An analysis of the number of passengers that have changed journey method and the number of vehicles available in their household is presented in Table 4.4 below.

Table 4.4: Change in Journey Method by Vehicles Available to Households

Direction	Respondents	Number of Vehicles Available to Households					
		0	1	2	3	4	5>
<i>Prior to this rail service being available, did you regularly make this journey by another method? YES</i>							
Eastbound	59	10%	58%	22%	7%	3%	0%
Westbound	103	14%	43%	36%	5%	2%	1%
<i>Prior to this rail service being available, did you regularly make this journey by another method? NO</i>							
Eastbound	71	17%	32%	32%	11%	6%	1%
Westbound	99	21%	44%	20%	9%	5%	0%

4.27 Of those passengers who responded to both questions presented in Paragraph 3.20, 17% to 21% of those who did not regularly make the journey by another method, also did not have access to a vehicle, which suggests that the rail link has improved accessibility and social inclusion.

4.28 Of the respondents who stated that they did not make the journey by another method and did not have access to a vehicle, it was noted that approximately 60% stated that they now made the trip more than once a week, with approximately 40% advised that they made the trip more than three times a week, of which the majority stated that they were travelling to or from work.

Conclusion

4.29 In the short term, the Airdrie to Bathgate rail link improvement is unlikely to have significantly influenced employment patterns and, subsequently, the number of benefit claimants (which included persons claiming Job Seekers Allowance) within North Lanarkshire and West Lothian. Whilst its impact on employment may materialise over a longer period, it is recognised that it may be difficult to attribute any change directly to the improvement as other external factors are likely to have a greater influence on local employment patterns and, subsequently, benefit claimant numbers.

4.30 From the analysis of the available O-D survey data, it would appear that the new service is being used by passengers with an origin station between Airdrie and Bathgate that may not otherwise have made the trip and do not have access to a vehicle. Based on this evidence alone, the Airdrie to Bathgate rail link improvement is considered to provide an improved means of travel for more disadvantaged members of society and, as such, may improve accessibility and, more generally, assist in promoting social inclusion.

Objective 4

Increase the number of people using public transport in Central Scotland

- 4.31 Whilst it has not been possible to compare overall public transport passenger numbers for the Glasgow to Edinburgh corridor, stations on the Airdrie to Bathgate rail line have seen an overall increase in patronage since the opening of the rail link (as noted in Paragraph 2.4), with the largest increases at stations on the eastern section of the Airdrie-Bathgate line. Patronage has also increased overall at stations on the western section of the line which has been supported by expansions to car parking facilities at several stations.
- 4.32 The rail link has also increased accessibility from communities in Central Scotland to the national rail network. The analysis of pre and post opening trip destinations from Bathgate (presented in Figure 3.6), for example, indicates that the number of individual trip destinations have increased. The data also shows that there has been increases in the number of trips originating from Bathgate to major destinations further afield between the same periods including Stirling, Newcastle and Aberdeen.
- 4.33 A pre and post opening comparison of the percentage of journeys to work for North Lanarkshire and West Lothian Local Authority areas, from the Scottish Neighbourhood Statistics website¹³, is presented in Table 4.5 below.

Table 4.5: Travel to Work Data for North Lanarkshire and West Lothian (2007 – 2012)

Local Authority	Percentage of Journeys To Work (By Mode)		
	2007-2008	2009-2010	2012
Train			
North Lanarkshire	6.4	4.5	8.1
West Lothian	5.3	n/a	8.0
Bus			
North Lanarkshire	10.9	9.6	8.2
West Lothian	11.2	6.3	3.6

- 4.34 The travel to work data indicates that the percentage of journeys to work using rail in North Lanarkshire and West Lothian in 2012 (at around 8%) was higher than it had been in previous years, against a backdrop of reducing bus usage.

¹³ <http://www.sns.gov.uk/default.aspx>

Conclusion

- 4.35 The rail link has created better links to the national rail network from Central Scotland with trip destinations data indicating that the number of journeys has not only increased to stations on the Airdrie-Bathgate line but also to destinations further afield.
- 4.36 The opening of the Airdrie to Bathgate rail link is also likely to have contributed to the increase in journeys to work using rail in North Lanarkshire and West Lothian Local Authority areas as well as Central Scotland more generally.

Objective 5

Offer a sustainable public transport alternative to the M8 and therefore reduce road congestion

4.37 A pre and post opening comparison of annual average daily traffic flows (AADTs) from the Scottish Roads Traffic Database (SRTDb)¹⁴ is presented in Table 4.6 below.

Table 4.6: AADT Flows (2007 – 2013)

ATC Reference	AADT by Year						
	2007	2008	2009	2010	2011	2012	2013
M8(T) between J3 & J3A (Livingston to Bathgate)							
JTC00026	61,488	55,616	Not Available	61,616*	50,934*	Not Available	Not Available
JTC00295 / JTC00297	62,318	62,431*	63,185	62,372	61,801	59,712	61,485
M8(T) between J3A & J4 (Bathgate to Whitburn)							
JTC00027	62,487	63,506	64,011	64,598*	62,647*	60,335	62,629*
M8(T) between J4 & J5 (Whitburn to Harthill)							
JTC00028	60,466	N/A	59,601*	Not Available	57,798*	Not Available	Not Available
JTC00292	57,772	60,509	61,179	62,105*	59,879*	56,495*	Not Available
M8(T) between J5 & J6 (Harthill to Newhouse)							
JTC00037	64,113*	63,482*	64,643	64,730	63,056	61,410	Not Available

Notes: *Partial Data

4.38 The AADT data indicates that flows along the M8 corridor between Livingston and Newhouse were lower in 2011 and 2012 than in previous years, which coincides with the opening of the rail link. It is important to note that the economic recession and wider economic conditions also will have had an impact on reduced traffic flows across Scotland. Whilst data for 2013 is limited, the information available suggests that flows are increasing.

4.39 A pre and post opening comparison of flows in the AM and PM peak periods (i.e. 7am to 10am and 4pm to 7pm respectively) is presented in Tables 4.7a and 4.7b below.

¹⁴ <http://www.transportscotland.gov.uk/road/traffic-count>

Table 4.7a: AM Peak Period Flows (2007 – 2013)

ATC Reference	AM Peak Period (7am to 10am) by Year						
	2007	2008	2009	2010	2011	2012	2013
M8(T) between J3 & J3A (Livingston to Bathgate)							
JTC00026	13,475	11,988	Not Available	13,115*	11,533*	Not Available	Not Available
JTC00295 / JTC00297	13,522	13,350*	13,414	13,112	13,290	12,812	13,159
M8(T) between J3A & J4 (Bathgate to Whitburn)							
JTC00027	13,576	13,725	13,813	13,727*	13,259*	12,870	13,136*
M8(T) between J4 & J5 (Whitburn to Harthill)							
JTC00028	13,196	Not Available	12,611*	Not Available	12,208*	Not Available	Not Available
JTC00292	12,698	13,333	13,610	13,613*	13,412*	12,539*	Not Available
M8(T) between J5 & J6 (Harthill to Newhouse)							
JTC00037	14,359*	13,634*	14,066	13,957	13,536	13,471	Not Available

Notes: *Partial Data

Table 4.7b: PM Peak Period Flows (2007 – 2013)

ATC Reference	PM Peak Period (4pm to 7pm) by Year						
	2007	2008	2009	2010	2011	2012	2013
M8(T) between J3 & J3A (Livingston to Bathgate)							
JTC00026	13,212	10,525	Not Available	13,013*	10,639*	Not Available	Not Available
JTC00295 / JTC00297	13,560	13,461*	13,670	13,425	13,263	12,986	13,347
M8(T) between J3A & J4 (Bathgate to Whitburn)							
JTC00027	13,991	14,084	14,246	14,431*	13,742*	13,412	13,692*
M8(T) between J4 & J5 (Whitburn to Harthill)							
JTC00028	13,484	Not Available	Not Available	Not Available	12,837*	Not Available	Not Available
JTC00292	13,028	13,281	13,654	13,827*	13,072*	12,362*	Not Available
M8(T) between J5 & J6 (Harthill to Newhouse)							
JTC00037	14,361*	13,943*	14,297	14,346	13,829	13,649	Not Available

Notes: *Partial Data

- 4.40 Both AM and PM period data follow a similar pattern to the AADT flows with traffic levels lower in 2011 and 2012 than in previous years, followed by a subsequent increase in 2013.

Conclusion

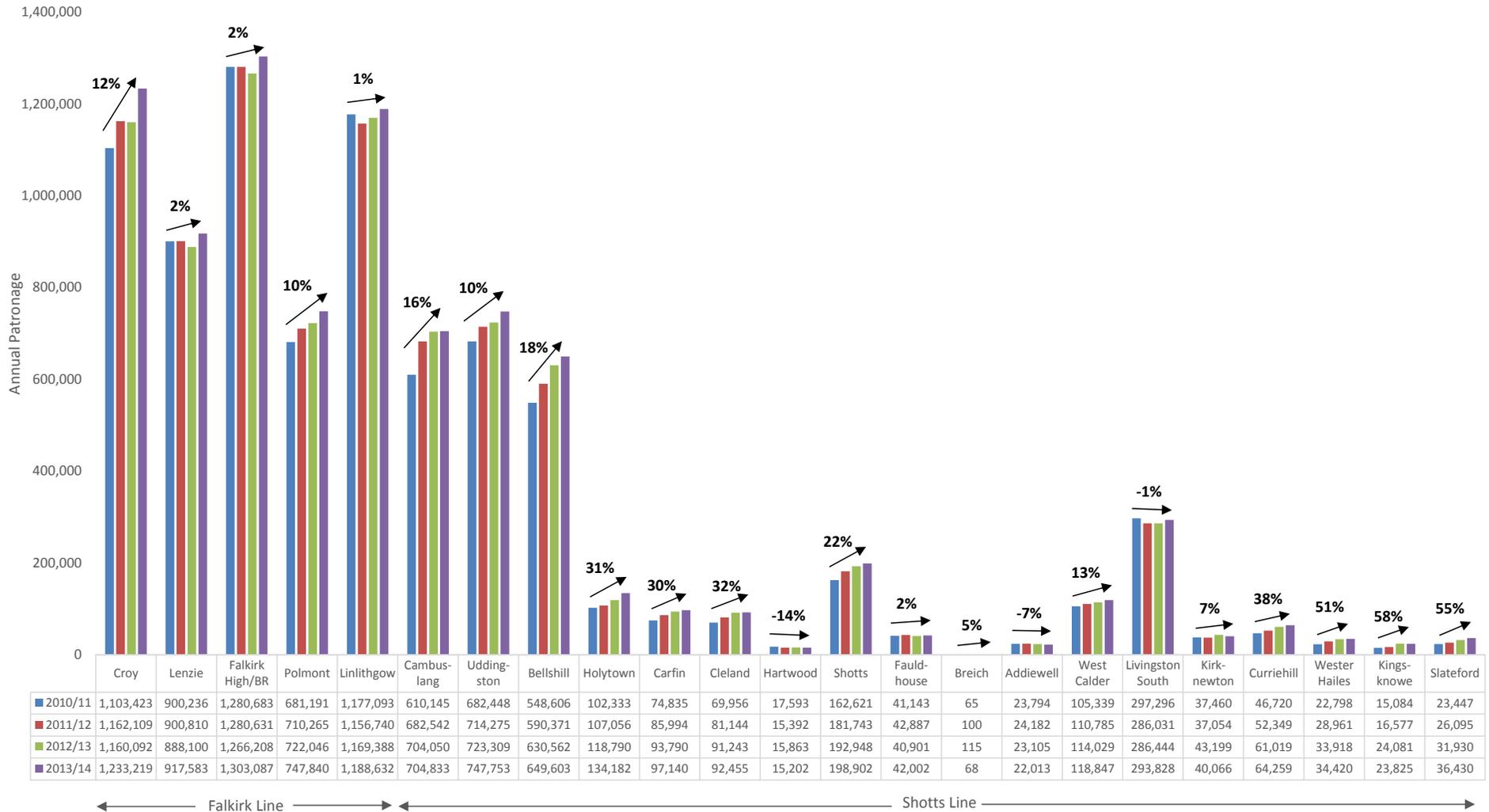
- 4.41 By virtue of providing a rail link between Airdrie and Bathgate, a public transport alternative to the M8 has been created. Whilst this is supported to some degree by the need to provide/expand car parking facilities at stations to meet demand, it is not possible to confirm whether this has removed traffic from the M8.
- 4.42 The comparison of traffic flows indicates that traffic levels on the section of the M8 between Livingston and Newhouse reduced in the initial years of the service being in operation. Whilst the Airdrie to Bathgate rail link improvement may have contributed to this reduction, it is difficult to confirm the impact that the improvement will have had on traffic using the M8 as many other factors, including wider economic conditions, could have influenced traffic volumes.
- 4.43 As indicated in Paragraph 3.32, the opening of the Airdrie to Bathgate rail link is likely to have contributed to the increase in journeys to work using rail in North Lanarkshire and West Lothian Local Authority areas, providing a viable public transport alternative to the M8.

Objective 6

Allow existing services to be connected and create an alternative to the Edinburgh – Glasgow main line, reducing congestion at peak times

- 4.44 The rail link improvement has connected the Airdrie to Glasgow and Bathgate to Edinburgh lines providing an alternative route between Glasgow and Edinburgh.
- 4.45 As indicated in Paragraph 3.48, the Airdrie line offers quicker average journey times between Glasgow and Edinburgh in the AM peak than the Shotts line and operates at a higher frequency than the Carstairs line suggesting that it may provide an attractive alternative for passengers if the main Glasgow to Edinburgh line via Falkirk is congested and during electrification works in summer 2015.
- 4.46 Annual patronage data for 2010/11 to 2013/14 for the Edinburgh to Glasgow via Falkirk and Shotts lines, from LENNON, is shown in Figure 4.4.
- 4.47 This data shows that on the Falkirk line, although demand at Croy and Polmont grew, on average, by over 3% per annum following the opening of the Airdrie to Bathgate link which became fully operational in March 2011, demand at other stations grew only marginally. Demand growth at Lenzie and Falkirk show a similar pattern with little change in 2011/12 followed by a 1% reduction and then a 3% increase in the two subsequent years. Demand at Linlithgow fell in 2011/12 by 2% before increasing by 1% and 2% in 2012/13 and 2013/14 respectively.
- 4.48 The LENNON patronage data for the Shotts lines in Figure 4.4 shows that patronage continued to grow at the majority of stations following the opening of the Airdrie to Bathgate line. However, demand fell in 2011/12 at Livingston South (4%) and Hartwood (13%) and there was also a small reduction at Kirknewton (1%) although the latter seems to be explained by annual fluctuations over time.

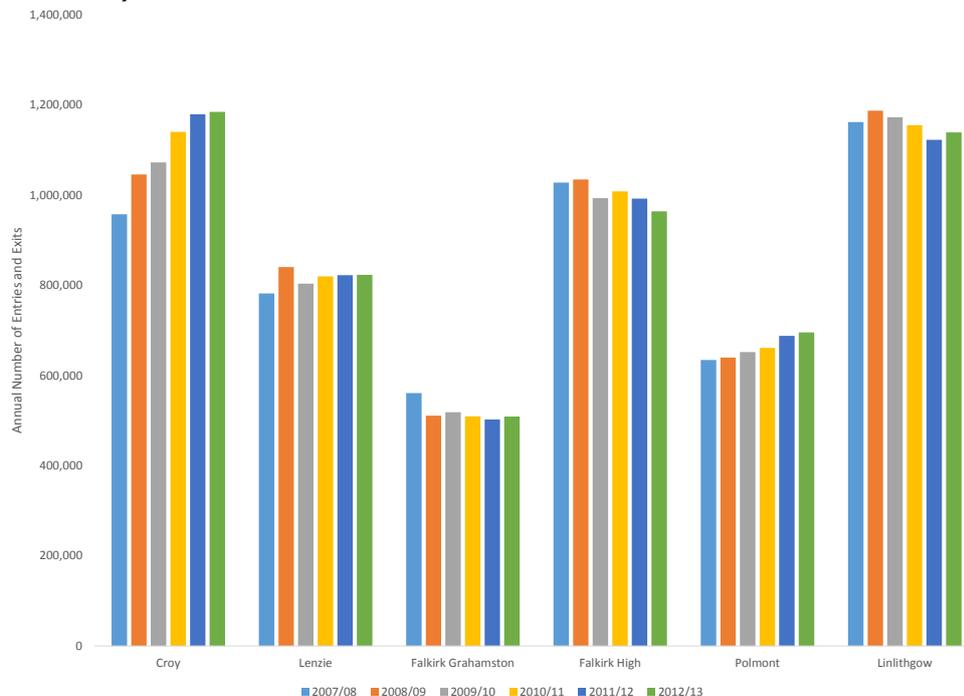
Figure 4.4: Annual Patronage for Falkirk and Shotts Lines by Station (2010/11 to 2013/14)



Source: LENNON

- 4.49 It seems likely that some of the reduction at Livingston South in 2011/12 was caused by the opening of the Airdrie to Bathgate link as this station is close to Livingston North on the Airdrie to Bathgate line, which offers more frequent services to Edinburgh and quicker average journey times to Glasgow than those services operating on the Shotts line.
- 4.50 Although there was a significant decline in patronage at Hartwood (12.6%) in 2011/12, demand also fell in 2009/10 (0.8%) and 2010/11 (7.9%). Although the Airdrie to Bathgate link could potentially help to explain some of the large reductions in demand in 2010/11, there is no robust evidence to support this.
- 4.51 As the LENNON patronage data was only available from 2010 onwards, station usage data from the Office of Rail Regulation (ORR) was analysed to try and understand longer term trends and the impact of the Airdrie to Bathgate link. The station usage data for Falkirk line stations between 2007/08 and 2011/12 is shown in Figure 4.5.

Figure 4.5: ORR Annual Number of Station Entries and Exits (2007/08 – 2012/13)

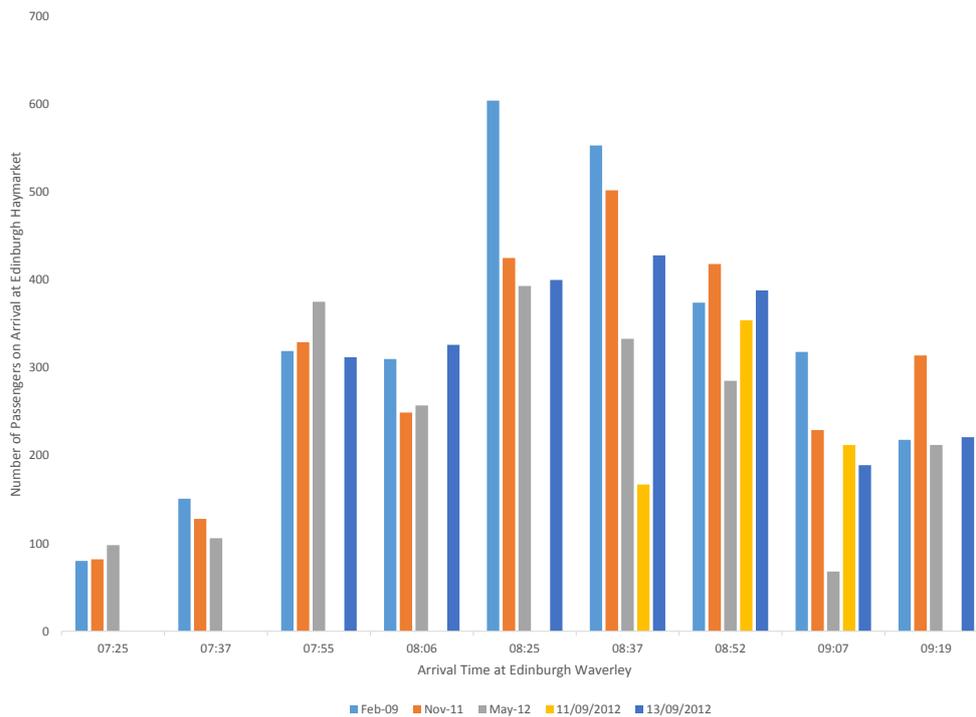


Source: Office of Rail Regulation (ORR)

- 4.52 The ORR data shows that the reduction in patronage in 2011/12 at Linlithgow noted above follows a longer term trend of declining patronage starting in 2009/10. However, the decline of 2.9% in 2011/12 was high compared to reductions of 1.3% and 1.5% in 2009/10 and 2010/11 respectively.
- 4.53 The number of entries and exits at Falkirk High also show both a fall in patronage in 2011/12 but also a declining trend over time. The station usage data for Lenzie provides evidence of a levelling off in demand from 2011/12 onwards although growth in previous years was also relatively small.

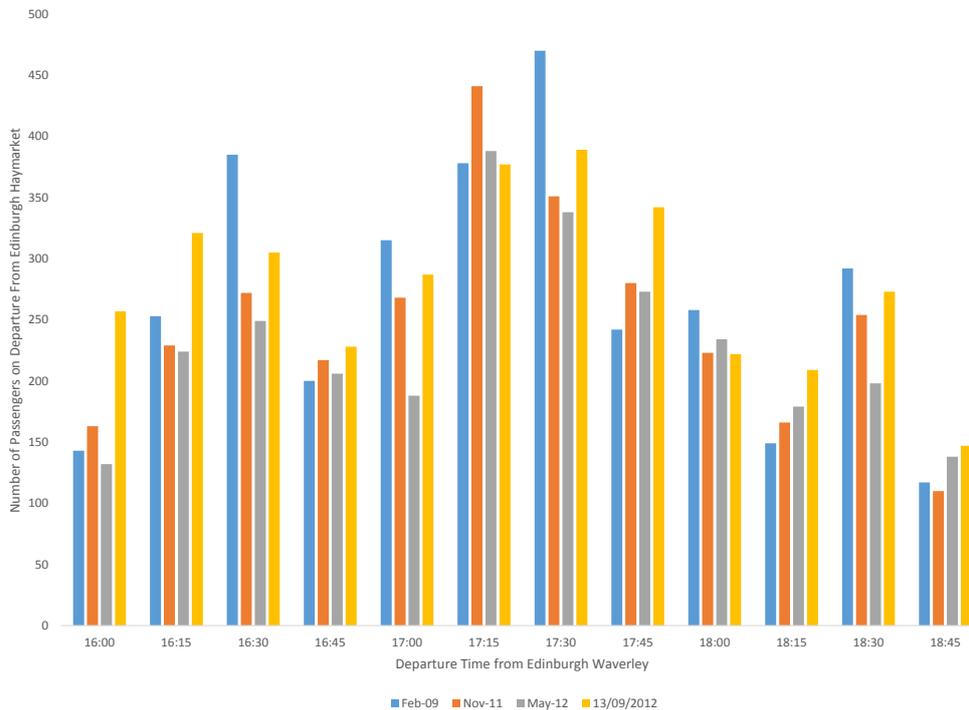
- 4.54 Taking the LENNON patronage and ORR station usage data together, the Airdrie to Bathgate line may have abstracted demand from the Falkirk line. However, there may also have been other contributing factors. If there has been any impact, it has been relatively small.
- 4.55 Count data was analysed for the Edinburgh to Glasgow via Falkirk line. The train loadings for inbound services in the AM peak and outbound services in the PM peak are shown in Figures 4.6 and 4.7 respectively on the most crowded section of the line, which is to the west of Edinburgh Haymarket.

Figure 4.6: AM Peak Train Loadings by Service on Arrival at Edinburgh Waverley on the Falkirk Line



Source: Count Data

Figure 4.7: PM Peak Train Loadings by Service on Departure from Edinburgh Waverley on the Falkirk Line

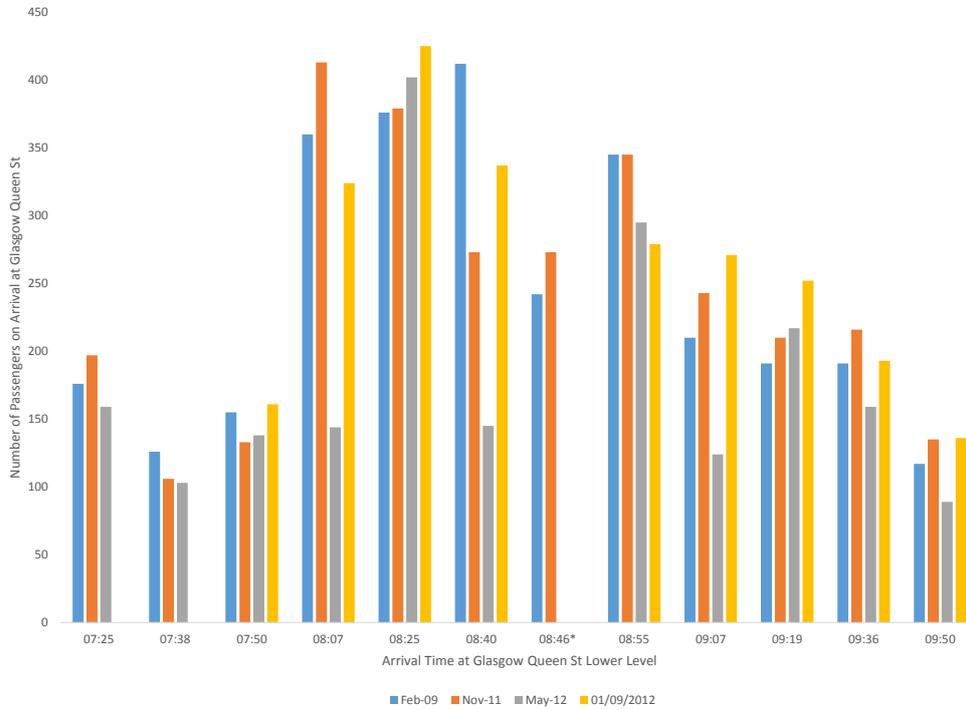


Source: Count Data

- 4.56 As Figures 4.6 and 4.7 show, rail count data can vary significantly depending on what time of year and day of the week surveys are undertaken and this needs to be borne in mind when analysing the data.
- 4.57 Figure 4.6 shows that the eastbound services with the highest loadings in the AM peak arrive into Edinburgh Waverley between 07:55 and 08:52. The two services with the highest loadings are the 08:25 and 08:37 arrivals and the level of demand on these services falls over time based on the five surveys undertaken. Demand on the 07:55, 08:06 and 08:52 services varies over time with similar levels of demand in the February 2009 survey before the rail link opened and the most recent survey data available from September 2009.
- 4.58 Figure 4.7 shows that the pattern is more mixed in the PM peak and less crowded than the AM peak. Although train loadings fall between February 2009 and September 2012 on five of the six busiest services in February 2009, loadings vary by survey and many of the services either side show increases in demand.
- 4.59 Count data was also analysed on the Airdrie to Bathgate line. This data shows that train loadings arriving into Edinburgh between 8am and 9am increased by 32% between March 2010 and November 2013. The data for PM peak train loadings shows a 46% increase for services departing between 5pm and 6pm. The significant increase in demand levels on these services and the evidence of declining load levels on some Falkirk line services suggest that the Airdrie to Bathgate link may have contributed to lower crowding levels on the Falkirk line.

4.60 The train loading data for services in and out of Glasgow on the Falkirk line are shown in Figures 4.8 and 4.9 respectively.

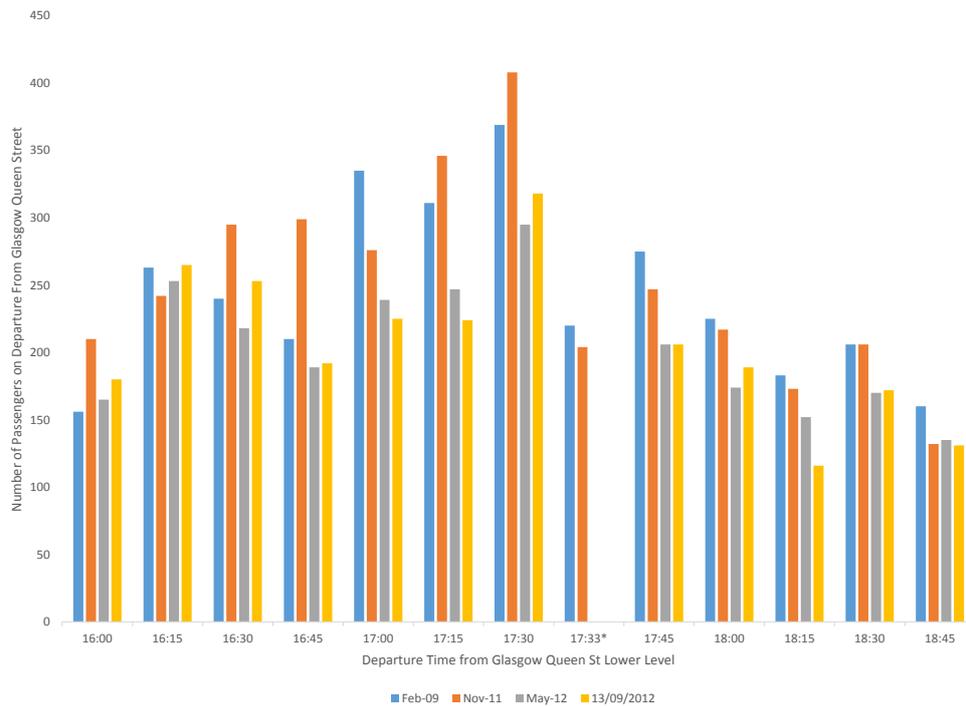
Figure 4.8: AM Peak Train Loadings by Service on Arrival at Glasgow Queen St on the Falkirk Line



Source: Count Data

Note: * The 08:46 arrival is from Ladybank not Edinburgh

Figure 4.9: PM Peak Train Loadings by Service on Departure from Glasgow Queen St on the Falkirk Line



Source: Count Data

Note: * The 17:33 departure is to Kirkcaldy not Edinburgh

- 4.61 Figure 4.8 shows that the busiest westbound services in the AM peak arrive at Glasgow Queen St between 8am and 9am. Train loadings have generally declined on these services over time based on the four surveys undertaken, except for the 08:25 service which has seen a rise in the number of passengers.
- 4.62 The PM data shows that the busiest services depart Glasgow between 16:15 and 17:45. Over the four surveys undertaken demand declines on the majority of these services although this result may be due to variability in count data rather than actual falling demand.
- 4.63 The count data on the Airdrie to Bathgate line indicates that there was a 4.6% decline in train loadings between February 2009 and November 2013 on arrival into Bellgrove which is the busiest section of the line for arrivals into Glasgow between 8am and 9am. On the same section of the line in the PM peak, loadings declined by 13.5% for departures from Glasgow between 5pm and 6pm on the same survey days.
- 4.64 It is thought that it is unlikely that these two surveys accurately represent the changes in crowding levels on the Airdrie to Bathgate line and that average train loadings have fallen at peak times. However, the results do suggest that train loadings into and out of Glasgow may not have increased as much as those into and out of Edinburgh which is supported by the LENNON data in Figure 3.1 which indicates that demand has increased much more significantly at stations on the eastern section of the line compared to the western section.

Conclusion

- 4.64 LENNON patronage data for stations on the Falkirk and Shotts lines suggests that there may be some evidence for abstraction of demand to the Airdrie to Bathgate line. However, there may be other factors which explain the fluctuations in demand at particular stations and the level of abstraction is relatively minor. It is also recognised that it can take people time to adjust their travel behaviour and the number of passengers using the Airdrie to Bathgate service to travel between Glasgow and Edinburgh may increase over time.
- 4.65 Count data for the Falkirk line was also analysed to determine the impact of the Airdrie to Bathgate line on crowding at peak times. The evidence suggests that the Airdrie to Bathgate line may have reduced crowding on Falkirk line services on the eastern section of the line, with falling demand on Falkirk line services and strong growth on Airdrie to Bathgate line services in the east since the rail link opened.
- 4.66 The count data for the western section of the line provides evidence of reduced crowding into and out of Glasgow on the Falkirk line but crowding levels have also fallen slightly on the Airdrie to Bathgate line over the same period. Based on the data analysed, there is no evidence to suggest that the Airdrie to Bathgate link has reduced crowding on the Falkirk line into and out of Glasgow. This is likely to be explained by the relatively small changes in service offering before and after the link opened on the western section of the line and the low number of passengers crossing the Airdrie/Bathgate gap indicated by the travel pattern analysis presented in Chapter 3.

5 COMMENTS ON THE DRAFT RAIL EVALUATION GUIDANCE

- 5.1 From our practical experience of using the draft rail guidance to undertake a Stage 1 Outcome Evaluation of the Airdrie to Bathgate rail link improvement, we would recommend that the guidance be further developed to:
- Include a toolkit that sets out indicators (mandatory and/or optional) that can be used to measure common operational outputs and impacts against each of the five STAG objectives as well as established policy directives.
 - Building on the Benefits Realisation Plan, include a requirement for an Evaluation Plan to be prepared at an early stage – setting out what the metrics will be, what information will be collected, when and by whom.
 - Include advice on the approach for assessing how accurate predictions were and whether the scheme is delivering value for money.
 - Consider carrying out post completion reviews to assess the effectiveness of environmental mitigation measures, cycling facilities, etc.
 - Include advice on incorporating stakeholder feedback.
 - Outline the roles and responsibilities of the project team.
 - Present details of the reporting structure to be used.
 - Provide advice on how the Gateway 5 review and Lessons Learned process fits into the evaluation process.
 - Include advice on how lessons learned are to be disseminated.

6 CONCLUSIONS

Overview

6.1 This chapter summarises the main findings and conclusions from different parts of this project.

Stage 1 Evaluation

6.2 The aim of the Stage 1 Evaluation was to provide an early assessment of the extent to which the project is on track to reach its objectives, through the examination of relevant monitoring data. The objectives were:

- To improve direct access to labour markets in Glasgow and Edinburgh for people living in North Lanarkshire and West Lothian;
- To encourage inward investment to and therefore stimulate economic growth in North Lanarkshire and West Lothian;
- To assist in promoting social inclusion to communities in North Lanarkshire and West Lothian;
- To increase the number of people using public transport in Central Scotland;
- To offer a sustainable public transport alternative to the M8 and therefore reduce road congestion; and
- To allow existing services to be connected and create an alternative to the Edinburgh - Glasgow main line, reducing congestion at peak times.

6.3 Overall, the findings from the Stage 1 Outcome Evaluation have shown that the project has reached many of its objectives, although it was not always possible to determine the connection between opening the rail link and some of them.

6.4 *Objective 1: Improve direct access to labour markets in Glasgow and Edinburgh for people living in North Lanarkshire and West Lothian.*

Direct access to labour markets in Glasgow and Edinburgh has been improved for local communities. There has been an increase in train frequencies to Edinburgh, with significant reductions in journey times since the rail link opened. By virtue of providing a rail link between Airdrie and Bathgate, direct access between West Lothian Local Authority areas and Glasgow as well as between North Lanarkshire Local Authority areas and Edinburgh, is available. Furthermore, journey times from Bathgate to Glasgow and from Airdrie to Edinburgh have significantly reduced since the service has been in operation improving access to Glasgow from the East and to Edinburgh from the West.

6.5 *Objective 2: Encourage inward investment to and therefore stimulate economic growth in North Lanarkshire and West Lothian.*

Whilst GVA for North Lanarkshire has been fairly consistent and that for West Lothian has increased in the period coinciding with the operation of the Airdrie to Bathgate rail link, it is not possible to attribute any change in GVA values for the North Lanarkshire and West Lothian Local Authority areas directly to the Airdrie to Bathgate rail improvement at this early stage. While the impact on GVA will materialise over a longer period, it is recognised that it may be difficult to attribute any change directly to the improvement as other external factors are likely to have an influence on GVA in the Local Authority Areas.

6.6 Objective 3: Assist in promoting social inclusion to communities in North Lanarkshire and West Lothian.

In the short term, the Airdrie to Bathgate rail link improvement is unlikely to have significantly influenced employment patterns and, subsequently, the number of benefit claimants (which included persons claiming Job Seekers allowance) within North Lanarkshire and West Lothian. Whilst its impact on employment may materialise over a longer period, it is recognised that it may be difficult to attribute any change directly to the improvement as other external factors are likely to have a greater influence on local employment patterns. From the analysis of the available Origin-Destination survey data, it would appear that the new service is being used by passengers with an origin station between Airdrie and Bathgate that may not otherwise have made the trip and do not have access to a vehicle. Based on this evidence alone, the Airdrie to Bathgate rail link improvement is considered to provide an improved means of travel for more disadvantaged members of society and, as such, may improve accessibility and, more generally, assist in promoting social inclusion.

6.7 Objective 4: Increase the number of people using public transport in Central Scotland.

The rail link has created better links to the national rail network from Central Scotland with trip destinations data indicating that the number of journeys has not only increased to stations on the Airdrie-Bathgate line but also to destinations further afield. The opening of the Airdrie to Bathgate rail link is also likely to have contributed to the increase in journeys to work using rail in North Lanarkshire and West Lothian Local Authority areas as well as Central Scotland more generally.

6.8 Objective 5: Offer a sustainable public transport alternative to the M8 and therefore reduce road congestion.

By providing a rail link between Airdrie and Bathgate, a public transport alternative to the M8 has been created although it is not possible to confirm whether this has removed traffic from the M8. The link has likely contributed to the increase in journeys to work by rail in North Lanarkshire and West Lothian Local Authority areas, providing a viable alternative to the motorway.

6.9 Objective 6: Allow existing services to be connected and create an alternative to the Edinburgh-Glasgow main line, reducing congestion at peak times.

LENNON patronage data for stations on the Falkirk and Shotts lines suggests that there may be some evidence for abstraction of demand to the Airdrie to Bathgate

line. However, there may be other factors which explain the fluctuations in demand at particular stations and the level of abstraction is relatively minor. It is also recognised that it can take people time to adjust their travel behaviour and the number of passengers using the Airdrie to Bathgate service to travel between Glasgow and Edinburgh may increase over time.

Count data for the Falkirk line was also analysed to determine the impact of the Airdrie to Bathgate line on crowding at peak times. The evidence suggests that the Airdrie to Bathgate line may have reduced crowding on Falkirk line services on the eastern section of the line, with falling demand on Falkirk line services and strong growth on Airdrie to Bathgate line services in the east since the rail link opened.

The count data for the western section of the line provides evidence of reduced crowding into and out of Glasgow on the Falkirk line but crowding levels have also fallen slightly on the Airdrie to Bathgate line over the same period. Based on the data analysed, there is no evidence to suggest that the Airdrie to Bathgate link has reduced crowding on the Falkirk line into and out of Glasgow. This is likely to be explained by the relatively small changes in service offering before and after the link opened on the western section of the line and the low number of passengers crossing the Airdrie/Bathgate gap indicated by the travel pattern analysis presented in Chapter 3.

Draft Rail Evaluation Guidance

6.10 In 2013, Transport Analytical Services produced draft guidance on the evaluation of major rail projects in Scotland. This evaluation forms part of a three-project pilot of the new guidance, which will test how appropriate the guidance is to projects at various times since their delivery. CH2M Hill were tasked with providing comments on the usefulness of the guidance for this Stage 1 evaluation.

6.11 As a result of this exercise, recommendations were made to require an Evaluation Plan to be prepared at an early stage and to identify all the required metrics; to include a toolkit that sets out the metrics, splitting them into mandatory and optional ones; to confirm the roles and responsibilities of the project team; to include advice on the approach for assessing how accurate predictions were and whether the scheme was delivering value for money; to provide advice on carrying out post completion reviews; and to include advice on incorporating stakeholder feedback, reporting structure and dissemination of lessons learned.

APPENDIX A
DETAILS OF AIRDRIE-BATHGATE SERVICES

Further copies of this document are available, on request, in audio and large print formats and in community languages (Urdu; Bengali; Gaelic; Hindi; Punjabi; Cantonese; Arabic; Polish).

اس دستاویز کی مزید کاپیاں آڈیو کیسیٹ پر اور بڑے حروف کی چھپائی میں اور کیوئی کی زبانوں میں طلب کیے جانے پر دستیاب ہیں، برائے مہربانی اس پتے پر رابطہ کریں:

এই ডকুমেন্ট-এর (দলিল) অতিরিক্ত কপি, অডিও এবং বড়ো ছাপার অক্ষর আকারে এবং সম্প্রদায়ের ভাষায় অনুরোধের মাধ্যমে পাওয়া যাবে, অনুগ্রহ করে যোগাযোগ করুন:

Gheibhear lethbhreacan a bharrachd ann an cruth ris an èistear, ann an clò mòr agus ann an cànan coimhearsnachd. Cuir fios gu:

इस दस्तावेज़/कागज़ात की और प्रतियाँ, माँगे जाने पर, ऑडियो टैप पर और बड़े अक्षरों में तथा कम्प्यूनिटी भाषाओं में मिल सकती हैं, कृपया संपर्क करें:

ਇਸ ਦਸਤਾਵੇਜ਼/ਕਾਗਜ਼ਾਤ ਦੀਆਂ ਹੋਰ ਕਾਪੀਆਂ, ਮੰਗੇ ਜਾਣ 'ਤੇ, ਆੱਡਿਓ ਟੇਪ ਉੱਪਰ ਅਤੇ ਵੱਡੇ ਅੱਖਰਾਂ ਵਿਚ ਅਤੇ ਕੰਮਿਊਨਿਟੀ ਭਾਸ਼ਾਵਾਂ ਦੇ ਵਿਚ ਮਿਲ ਸਕਦੀਆਂ ਹਨ, ਕ੍ਰਿਪਾ ਕਰਕੇ ਸੰਪਰਕ ਕਰੋ:

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ISBN: 978-1-909948-45-7

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Published by Transport Scotland, May 2015

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