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Access for All Benefit Research

Impacts of Station Accessibility Improvements

Final Report
July 2015

Department for Transport

Our ref: 22762801
Client ref: PPRO 4/92/114

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Access for All Benefits Research Executive Summary

Overview

The Access for All (A4A) programme is a Department for Transport (DfT) funded initiative to improve accessibility at key stations on the UK rail network. It provides for the creation of obstacle free routes through the station to the trains, plus complementary improvements aimed at making stations more accessible for disabled passengers.

DfT are keen to assess the benefits of the A4A programme, both to inform future work on the programme and to justify the current and future funding. Steer Davies Gleave (SDG) were commissioned to undertake this assessments, partly based on an assessment of the A4A programme undertaken by the company in 2010.

The aim of this study was firstly to assess and quantify the benefits of the A4A programme to passengers and train operators; and secondly to consider how the programme could be improved to maximise these benefits. The study itself involved the following:

- Analysis of station footfall and Railcard use data;
- Site visits / audits;
- Station user research;
- Station user classified counts; and
- Economic appraisal of benefits for a selected set of A4A stations.

The study encompassed six stations representing a cross-section of all A4A stations:

- Bridgend;
- Huddersfield;
- Kidderminster;
- Purley;
- Rutherglen; and
- Vauxhall (London).

For the purposes of the research (interviews and counts) passengers were categorised into the following groups:

- Mobility impaired (users with walking aid, frail elderly users, etc.);
- Wheelchair users;
- Hearing impaired;
- Sight impaired;
- Encumbered (users with small children, heavy luggage, etc.); and
- Unencumbered (everyone not included above).

Findings

The analysis found disabled passengers made up 1% of all station users (with mobility impairments being the most common disability category) at the A4A stations, encumbered passengers made up another 5%, with the remaining being unencumbered users . There were variations between stations, with Bridgend having more than average disabled and encumbered passengers and Kidderminster less than average.

On average, only 5% of the passengers use the lifts, with lift users coming from all the user categories. In fact, of all lift users, unencumbered made up 70%, and encumbered passengers 26%. The proportion of mobility impaired passengers making use of the lifts varied noticeably

between stations, with one influence believed to be lack of visibility and effective signage to the lifts as identified in the station audits. This appeared to be particularly a factor at Bridgend and Kidderminster: for example, at Bridgend of the 109 weekday disabled users just 16 made use of the lifts. This might have been influenced by the 'Stations Made Easy'-website did not show that lifts were present at Bridgend station, at the time of the research.

Of the mobility impaired passengers interviewed at the A4A stations, 57% said they were aware of the A4A improvements, with awareness being lower amongst other user groups. Some of the apparent lack of awareness could be due to passengers only starting to use the station after the improvements had been made, not being aware of any changes prior to this.

Satisfaction with the ease of getting from the entrance to the platforms was high overall, but lower amongst those with a mobility or visual impairment: for these groups 68% rated it as very easy, with 57% of wheelchair users rating it as very easy.

The impact of provision of facilities for disabled people on station choice is notable amongst some disability groups, particularly for wheelchair users, with the majority saying that they would always or occasionally travel further to a station which is easier for disabled people to use. Just under a third of mobility impaired and hearing impaired passengers felt the same.

When asked if the improvements had affected their use of the station 11% said that they had increased the number of trips they made from that station, including 6% having increased the number of trips significantly. This figure was higher amongst some disabled groups, with a third of wheelchair users, 19% of hearing impaired passengers, and 15% of mobility impaired passengers having increased their use of the station.

The stations that saw the greatest proportion of respondents making additional trips were Vauxhall (20%) and Rutherglen (13%). On the other hand, Purley and Huddersfield had the lowest levels of increased trips of the six stations.

In terms of the economic appraisal, the scheme demonstrates a positive economic performance, with benefits overall exceeding costs by 2.4 : 1 over a 60-year appraisal period. However, this benefit cost ratio (BCR) does vary significantly between the station, with Vauxhall with a very high BCR of 11.3 : 1, compared to Huddersfield and Bridgend with decent BCRs around 1.2 : 1, and Kidderminster, Rutherglen and Purley with BCRs of less than one.

The key identified drivers for the differences in BCR were the number of disabled and encumbered passengers using the station, and the number stating that the A4A improvements have led to them increasing their use. The latter does to a large extent depend on the station users' awareness of the improvements.

Twelve sensitivity tests were undertaken, mostly 'downside' in nature. In all cases the overall programme BCR remained positive, the lowest being 1.44 : 1. This indicated that the result is robust. The benefits to unencumbered passengers were not included in the central case, but in the sensitivity test where they were included the BCR was 19:1.

Recommendations

The study results and the economic analysis indicate that the A4A programme should be continued. However, more should be done to communicate the improvements both on the station to current station users and off the station to potential passengers. Based on the importance of awareness for the success of the A4A investment, it is suggested that some budget should be provided for communication and promotion of the changes introduces.

1 Introduction

Access for All Programme

1.1 The Access for All (A4A) programme is a Department for Transport (DfT) funded initiative to improve accessibility at key stations on the rail network. It provides for the creation of obstacle free routes through the station to the trains, plus complementary improvements funded via a "small schemes" fund, all aimed at making stations more accessible for disabled passengers.

1.2 The fund initially committed spending £370 million over the period 2004 – 2015. In addition, the small schemes fund has delivered smaller scale accessibility improvements at more than 1,100 stations. The Main Programme is now seeing a £160m extension of the fund and programme from 2015 -2019.

Accessibility Research

1.3 Despite some research into the impact of accessibility improvements for public transport over the last few years, there are still limited sources of reliable data to support and inform decision making in this area, as well as general knowledge about disabled people's rail journeys.

1.4 The Department for Transport (DfT) has therefore commissioned a research study to quantify the benefits of the current Access for All Programme for improving accessibility for all users of national rail stations. The study was required to specifically look at:

- What are the benefits to passengers of the programme?
- What are the benefits to train operators?
- How could the programme be further improved?
- What are the wider social benefits and what benefit cost ratio (BCR) should be used to assess the benefits of investment in accessible pedestrian routes on railway stations?

1.5 This research study builds on the work undertaken by Steer Davies Gleave in 2010 which looked at the impact of improvements to four stations as compared to similar stations without A4A improvements. This included assessing how station users experienced the changes and their rating of various elements of the improvements. This research was subsequently the basis of a business case analysis of the accessibility improvements, quantifying the benefits accruing to both users and station/train operators.

1.6 The new research study is split into two work streams:

Work stream 1: To assess and quantify the benefits to a) passengers and b) train operators of the Access for All Main Programme and to consider how the programme could be improved to maximise these benefits, making appropriate recommendations.

Work stream 2: Determine an appropriate benefit to cost ratio (BCR) for investment in infrastructure to create accessible routes at railway stations considering the wider social benefit of accessible railway transport.

1.1 In order to assess the benefits of the A4A programme passenger research has been conducted at a selection of stations where A4A improvements were completed between 2008 and 2012. Passenger interviews were accompanied by counts of station users with differing levels of mobility difficulties. To better understand the issues at each station, station audits/site visits have also been undertaken.

This Report

1.7 This report presents the results of the 2015 study undertaken by Steer Davies Gleave to determine the benefits to passengers and the rail industry of the A4A programme, assess the business case for A4A improvements, and provide guidance on how to maximise the value obtained from the investments.

1.8 An overview of the A4A programme and the current availability of accessibility research are provided in Chapter 1. The latter chapters provide more information on this specific project, with the station selection process and survey methodologies presented in Chapter2. Chapter 3 provides contextual information concerning the selected stations, including data on station users provided by the Association of Trains Operating Companies (ATOC) and findings from station audits undertaken in March 2015.

1.9 The results of the passenger count and interview surveys are presented in Chapters 4 and 5, while the business case analysis is presented in Chapter 6. Finally, we draw some conclusions in Chapter 7, including our recommendations as the A4A programme is taken forward.

2 Survey Methodology

Station Selection

1.10 The first stage of the project required selecting a representative sample of A4A stations to examine in more detail. These were also the locations where the passenger interview and count surveys were to be undertaken. To this end we stratified A4A stations based on the following criteria:

- Location (government region);
- Station type and size[1];
- Station footfall[2];
- Railcard use (Disabled, Senior and Family Railcards)[2];
- Type and scale of Access for All works;
- Access for All works completion year; and
- Access for All expenditure per station user.

1.11 The final list of stations was then selected with the aim of obtaining a mix across all these variables. In terms of scope of work, the focus was on stations which had seen larger scale improvements, particularly lifts installation, as these would likely have more impact and be more noticeable to station users. The station list was fine-tuned based on discussions with industry representatives to confirm suitability both generally and in the planned survey timeframe.

1.12 The final selected stations were:

- Bridgend;
- Huddersfield;
- Kidderminster;
- Purley;
- Rutherglen; and
- Vauxhall (London).

1.13 It can be seen that this sample of stations provides a good spread of locations, station sizes and types. Furthermore, all these stations have seen significant, but not excessive, growth in

[1] The station classification used is the same as used in the 2010 study, originally developed by Steer Davies Gleave for ATOC in order to provide a means of classifying stations according to their use (Steer Davies Gleave Stations Research, ATOC (2006)). This classification takes into account station size, the mix of passenger types/journey purposes at the station, and the extent to which a station is used as an origin, a destination or for interchanging.

[2] Based on data from ATOC and ORR provided March 2015

usage since the introduction of the accessibility measures with spend per station exceeding £ 1 million.

2.1 The selected stations with key characteristics are presented in the Table 2.1 below. More detailed analysis of station entries/exits and railcard usage for these stations is provided in Chapter 3.

Table 2.1: Key Characteristics of Selected A4A Station

Station	Location	Station Type	Type of Works (main elements)	Completed	Spend /user
Bridgend	Wales	Medium mixed use station	2 lifts installed and a new footbridge	March 2012	£0.94
Huddersfield	Yorkshire & the Humber	Large mixed use station	2 glass lifts installed from subway to platform level, new stairways	September 2011	£0.48
Kidderminster	West Midlands	Medium mixed use station	2 lifts installed and a new footbridge	July 2008	£1.37
Purley	London	Medium commuter station	4 lifts (platform to subway) and substation, significant station refurbishment	July 2008	£1.22
Rutherglen	Scotland	Medium mixed use station	1 lift installed, new ticket office and foyer renewal	March 2009	£1.62
Vauxhall London	London	Large commuter station	4 lifts (platform to subway) and substation, significant station refurbishment	July 2012	£0.15

Station Surveys

2.2 The second stage of the study consisted of the two surveys – station user interviews and classified station counts. The surveys were undertaken over minimum one weekday and one weekend day for each station, between the hours of 07.00 – 19.00 on weekdays and 10.00 – 16.00 on weekend days. The surveys were mostly undertaken in March 2015 (avoiding Easter), with some counts also undertaken in April/May.

2.3 Both surveys were based on the disability categories as presented in Table 2.2 below, with a focus on identifying disabled and encumbered station users.

Table 2.2: Disability Categories

Disability Category	
Mobility	with or without walking aid, incl. frail and slowly moving people
Wheelchair	using a wheelchair
Hearing	with an hearing aid or obviously deaf, e.g. using sign language
Sight	with a guide dog or stick
Encumbered	with children under 5, heavy shopping/luggage, buggy/pushchair or any other hindrance
Unencumbered	everyone else

Interview Surveys

2.4 The station user interviews involved relatively short face-to-face interviews conducted with passengers waiting for a train. To ensure the capture of views of disabled station users, the interview survey was based on a quota sample in order to over-sample disabled passengers.

Questionnaire

2.5 The interview was based on the same questionnaire as used in the 2010 study, with some modifications to allow for surveys on stations where the A4A improvements were introduced some years ago and some minor adjustments to add clarity to the interviewers. Using a similar questionnaire means the results for the two surveys can be included in one database and more readily compared.

2.6 The questionnaire included questions around:

- General travel behaviour and use of rail;
- Basic details about current trip (purpose, use of Railcard, etc.);
- Ratings for relevant station attributes, and overall ease of use of station;
- Reasons for any low ratings;
- Awareness of any improvements to the station;
- Effect of any improvements on use of the station and general perceptions of accessibility of the rail network; and
- Passenger details (Postcode, demographic, mobility / disability details).

Quotas

2.7 The interview survey aimed to achieve 300 interviews at each station with as many interviews of disabled users as possible, with the remainder being made up of encumbered (typically carrying luggage or with a pushchair) and unencumbered users. The achieved sample by station and quota category is shown in Table 2.3. In total, the sample by passenger category is:

- Mobility Impairment - 220
- Wheelchair User - 14
- Hearing Impairment - 96
- Visual Impairment - 137
- Encumbered - 832
- Unencumbered - 834
- Total – 1849

2.8 On average, 308 interviews were undertaken per station. The minimum for a single station was 272 interviews for Kidderminster, all the other stations had over 300 interviews each.

Table 2.3: Achieved Quota Sample

Station	Mobility Impairment	Wheelchair User	Hearing Impairment	Visual Impairment	Encumbered	Unencumbered	Total
Huddersfield	35	4	25	52	172	120	309
Kidderminster	39	1	20	38	139	118	272
Purley	32	3	6	6	88	194	307
Rutherglen	47	1	20	26	166	130	332
Vauxhall London	21	0	8	9	132	174	321
Bridgend	46	5	17	6	135	148	308
Total	220	14	96	137	832	884	1849

Count Surveys

2.9 The count surveys were undertaken as classified passenger counts, classified by level of mobility and encumbrances (as per categories in Table 2.2). The aim was to establish the number and proportion of disabled and encumbered passengers at survey stations in order to factor up the passenger survey data.

2.10 The count surveys were undertaken using video cameras, which enable review of individual stations, spot checks and to undertaking further analysis if required. The count surveys were undertaken over the same period as the interview surveys, with a few additional counts undertaken in April/May. Weekdays counts covered two midweek days to capture a more robust sample.

Video Cameras

2.11 Cameras were placed on existing structures inside the station in order to view station entrances and exits, with additional cameras used to quantify the usage of the lifts. Pictures of a camera unit and way of attachment, as used in the count surveys are provided in Figure 2.1, as can be seen they were small in size. As the footage quality does not allow for individual faces to be recognised, the use of these cameras does not pose any data protection issues.

Figure 2.1: Camera Unit and Attachment

3 Station Assessment

Introduction

3.1 The initial assessment of the selected stations involved two elements:

- Analysis of station usage, based on ORR station entry and exit counts, and Railcard usage, based on ticket sales data provided by ATOC; and
- Station accessibility audits involving visits to each station to review the accessibility provision.

Station Usage Statistics

3.2 Station entry and exit numbers and station railcard usage have been collected for the selected A4A stations and also for all national rail stations within the UK. The latter to be used as a comparison to establish a level of base growth and to acknowledge underlying trends and aspects other than A4A improvements impacting on station and railcard usage growth.

Station Entry/Exit Counts

3.3 Station usage data for all UK stations was collected for the nine years between 2005/06 and 2013/14 from the Office for Rail and Road (ORR)[3]. This data has then been grouped, based on Network Rail (NR) regions, and split into stations which have been subject to A4A improvements and all stations per NR region.

3.4 Table 3.1 overleaf presents the station usage for the six selected A4A stations before and after the completion of the A4A improvements. This is then compared to the regional average for all A4A stations, and for all stations (A4A and other) within the NR region.

3.5 As can be seen, there has generally been a strong growth in rail station usage of around 20-30% for most NR regions. The exception is the West Midlands region which has seen a significant growth of over 60% between years 2005/06-2008/09 and years 2009/10-2013/14. The level of growth for A4A stations is somewhat higher on average, although there are significant differences between our six study stations.

3.6 Looking at these six A4A stations, Huddersfield and Rutherglen have seen substantial growth and significantly higher increases in use compared to the respective regions overall, while Vauxhall and Bridgend have seen lower growth more in line with the respective regional levels. Kidderminster has seen substantial growth, and Purley smaller growth, but both are lower than the respective regions overall.

[3] http://orr.gov.uk/statistics/published-stats/station-usage-estimates

Table 3.1: Station Users per A4A Study Station

Station	A4A Completion	NR Region	Annual Average - Before A4A Completion	Annual Average - After A4A Completion	Growth in Station Usage
Huddersfield	September 2011	2**	**3287087**	**4736404**	**44%**
North East & Yorkshire	*All A4A Stations*		*1056164*	*1385041*	*31%*
	All Stations				*22%*
Kidderminster	July 2008	3**	**965544**	**1434105**	**49%**
West Midlands	*All A4A Stations*		*679256*	*978634*	*44%*
	All Stations				*63%*
Rutherglen	March 2009	9**	**607747**	**886682**	**46%**
Scotland	*All A4A Stations*		*754746*	*889909*	*18%*
	All Stations				*18%*
Purley	July 2008	0**	**2428370**	**2798236**	**15%**
NSE Travelcard Area (London)	*All A4A Stations*		*5685200*	*7788265*	*37%*
	All Stations				*26%*
Vauxhall	July 2012	0**	**14591215**	**19401716**	**33%**
NSE Travelcard Area (London)	*All A4A Stations*		*5685200*	*7788265*	*37%*
	All Stations				*27%*
Bridgend	March 2012	5**	**1399073**	**1608489**	**15%**
South & Central Wales & South West	*All A4A Stations*		*944020*	*1172861*	*24%*
	All Stations				22%

Note: A4A Study Stations compared to all A4A stations and all stations in the same Network Rail region, before / after based on each A4A station's completion date

Railcard Usage

3.7 Railcard usage for all UK National Rail stations was provided by the Association of Train Operating Companies (ATOC) based on national ticket sales data. For this study, the focus was on the use of three types of railcards as these user groups in particular benefit from accessibility improvements. These railcards are:

- Disabled Persons Railcard;
- Family and Friends Railcard; and
- Senior Railcard.

3.8 Table 3.2 presents the use of the above-mentioned railcards for the six selected A4A stations before and after the completion of the A4A improvements. This is then compared to the regional average for all A4A stations and for all stations within the NR region.

3.9 While there is overall growth in the use of these railcards, the increase is notably higher for Disabled Persons Railcards and Senior Railcards, and in particular the former. Scotland even sees a reduction in the use of Family and Friends Railcard for both Rutherglen station and all A4A stations in the region, compared to a small increase for Scottish stations overall.

3.10 The growth in railcard use is generally significantly higher for the selected A4A stations than the respective regions overall, however, the picture is more nuanced when looking at the individual stations. Rutherglen, Purley and Vauxhall have seen substantial increases in use, significantly higher than the respective regions overall. Huddersfield and Kidderminster have seen high levels of growth, but in line with the levels of regional growth. Bridgend, on the other hand, has seen relatively limited growth and also lower growth than the region overall.

Table 3.2: Railcard Usage per A4A Study Station

Station	A4A Completion	NR Region	Before A4A Completion			After A4A Completion			Growth in Railcard Usage		
			Disabled	Family	Senior	Disabled	Family	Senior	Disabled	Family	Senior
Huddersfield	September 2011	2**	**12530**	**36025**	**54027**	**19403**	**42650**	**87294**	**55%**	**18%**	**62%**
North East & Yorkshire	*All A4A Stations*		*4141*	*14790*	*18104*	*6382*	*18601*	*29100*	*54%*	*26%*	*61%*
	All Stations								*59%*	*25%*	*58%*
Kidderminster	July 2008	3**	**5627**	**7226**	**25577**	**9162**	**9446**	**42425**	**63%**	**31%**	**66%**
West Midlands	*All A4A Stations*		*2032*	*3960*	*9851*	*3171*	*5204*	*14968*	*56%*	*31%*	*52%*
	All Stations								*67%*	*45%*	*64%*
Rutherglen	March 2009	9**	**94**	**629**	**407**	**407**	**485**	**1331**	**335%**	**-23%**	**227%**
Scotland	*All A4A Stations*		*1448*	*7622*	*8648*	*2404*	*6954*	*13868*	*66%*	*-9%*	*60%*
	All Stations								*81%*	*11%*	*72%*
Purley	July 2008	0**	**2245**	**3531**	**7656**	**4800**	**7959**	**11019**	**114%**	**125%**	**44%**
NSE Travelcard Area (London)	*All A4A Stations*		*2712*	*6776*	*14622*	*4359*	*9009*	*20126*	*61%*	*33%*	*38%*
	All Stations								*97%*	*64%*	*63%*
Vauxhall	July 2012	0**	**2686**	**3653**	**5774**	**4517**	**6051**	**7947**	**68%**	**66%**	**38%**
NSE Travelcard Area (London)	*All A4A Stations*		*2712*	*6776*	*14622*	*4359*	*9009*	*20126*	*61%*	*33%*	*38%*
	All Stations								*56%*	*43%*	*46%*
Bridgend	March 2012	5**	**13163**	**16808**	**29356**	**17248**	**18241**	**40660**	**31%**	**9%**	**39%**
South & Central Wales & South West	*All A4A Stations*		*7011*	*18320*	*35139*	*11596*	*21979*	*55479*	*65%*	*20%*	*58%*
	All Stations								*52%*	*17%*	*52%*

Note: A4A Study Stations compared to all A4A stations and all stations in the same Network Rail region, before / after based on each A4A station's completion date

Station Accessibility Audits

3.11 This section outlines the findings from the A4A station accessibility audits. These audits have been used to assess the presence and quality of station provisions from an accessibility perspective. Their overall aim was to assess the effectiveness of the A4A investment in making it easy for people with a disability or encumbrance to move around the station and through it to access the rail network. This section provides a brief overview of the audits, with more detailed information available as a separate Supporting Document.

3.12 The A4A completion dates and the dates of the audits are provided in Table 3.3.

Table 3.3: National Rail station audit information

Station Name	NR Region	A4A Improvement Completion Date	Station Audit Date
Bridgend	Wales	03/2012	26/03/2015
Huddersfield	Yorkshire and the Humber	09/2011	26/03/2015
Kidderminster	West Midlands	07/2008	31/03/2015
Purley	London	07/2008	20/03/2015
Rutherglen	Scotland	03/2009	24/03/2015
Vauxhall	London	07/2012	24/03/2015

Summary of Station Accessibility Audits

3.13 In general, the provision and quality of accessibility infrastructure varied. While most stations have the infrastructure in place, on several stations issues relating to the location of the infrastructure, the signage to it and maintenance were identified.

3.14 Key accessible station infrastructure and provisions noted during the station audits included the following:

- Step-free and covered entrances/exits and waiting areas;
- Clear and loud audible announcements and visual real time information;
- Accessible ramps for train access available;
- Accessible lifts;
- Accessible customer help points and induction loops; and
- Accessible toilets.

3.15 A number of barriers to accessibility were also identified during the station audits, including the following:

- Inaccessible ticket machines and ticket counters;
- Difficulty in locating the help points and induction loops;
- Lack of presence of station attendants on platforms;
- Lack of lift visibility and/or poor wayfinding signage to the lift; and
- Fading warning tactile/coloured strips on platform edges and stairs.

Bridgend Station

3.16 Access to platforms 1 and 1a is step-free, with entry via the main concourse and ticket hall. Access to platforms 2 and 3 is also via the main entrance and concourse, then using one of the two sets of stairs or the lifts to/from the footbridge.

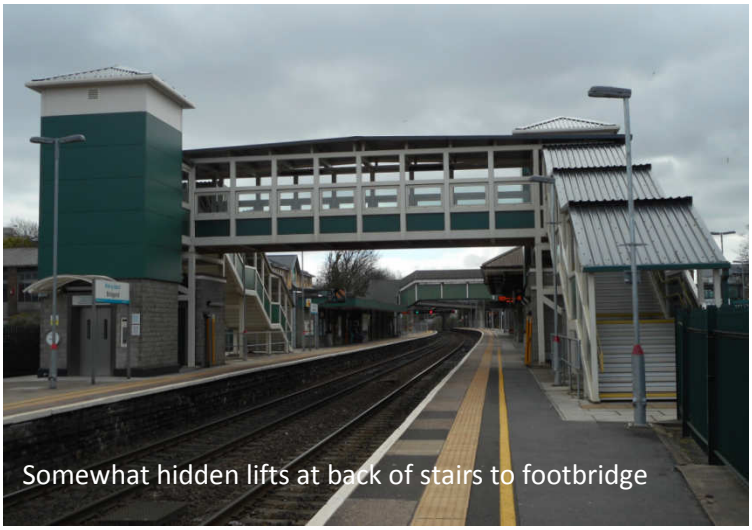
3.17 The lifts are in good working order, with signage indicating their location. However, the lift signage is not clear and it is difficult to locate the lifts as they are placed on the back of one of the two footbridges. Particularly for platform 1 the presence of the lifts is not obvious as it is not visible from the platform without walking some way towards it. It is also worth noting that the lifts are not shown on the National Rail Enquiries website.

3.18 At the main entrance to platforms 1 and 1a there was no immediate place to access help, and on platforms 2 and 3 the help points located near the lift entrance/exist are lift-specific, so there are no general help points available.

3.19 There are warning tactile strips and yellow line indicators on all platform edges; however, these are fading in certain places along the platform edge. Access ramps were available.

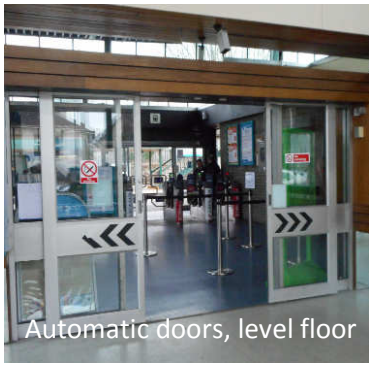
3.20 The stairs to the footbridges have contrast painting on steps and hand rails, as well as tactile markings at the start of the stairway.

3.21 Outside the station, there is step free access available, but it is a relatively indirect and not well identified route, involving going some way away from the taxi pick-up / drop-off point.


Somewhat hidden lifts at back of stairs to footbridge


Fading yellow lines, tactile paving


Colour contrast


Automatic doors, level floor

Lack of dropped kerb by entrance

Huddersfield Station

3.22 Platforms are easily accessible by lift, connected by a subway. There is step-free access to all platforms. Lifts are visible and easily accessible, with information provided in Braille. Lifts are equipped with audible announcements, although these announcements are relatively quiet.

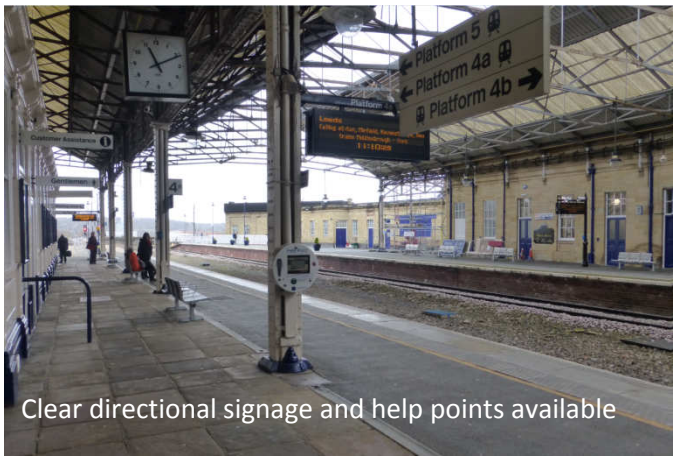

Disabled parking outside station

3.23 On each platform, there is clear signage indicating the platform number, as well as signage indicating the location of lifts, stairs and toilets. However, there is a lack of signage indicating the help points, and the location of ramps.

Visible and easily accessible lifts

3.24 All platforms have loud and clear audible messages, as well as clear visual real time information. On all platforms, warning tactile strips and orange indicator strips are present.

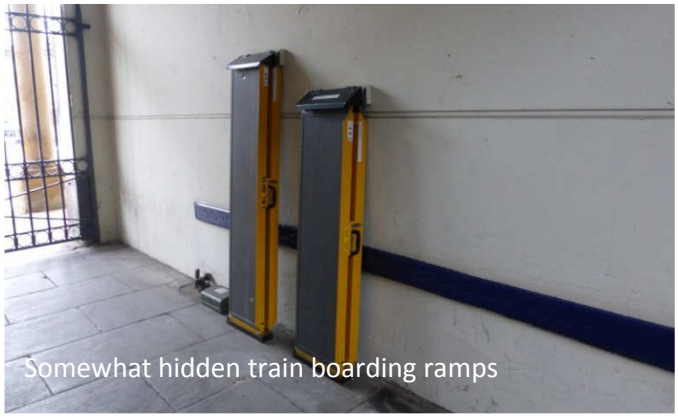
3.25 Accessible train ramps are available on the majority of platforms, excluding platforms 3 and 7. There are four ramps available on platform 1, attached to the wall in two different locations.



Clear directional signage and help points available

3.26 In terms of accessible parking, there are five accessible parking bays located to the left of the main entrance. There are no ground markings to clearly demarcate the bays and there is only three small signposts showing that the spaces are for disabled parking, so it might be difficult to spot for new and infrequent users. From the parking a ramp leads to the main entrance.

3.27 The area surrounding the main entrance has a large number of dropped curbs and step-free access.


Somewhat hidden train boarding ramps

Kidderminster Station

3.28 Platform 1 can be accessed from the main ticket area step-free. Platform 2 can be accessed by crossing platform 1 and crossing over the footbridge which can be reached by stairs or lifts. The footbridge connecting platform 1 and 2 is covered, however, it is dark and poorly lit. There is also a lack of clear signage indicating location of either platform 1 or 2 when using the footbridge.

3.29 Lifts are available on both platforms, but located behind the stairs obscuring their location and making them hard to find. The waiting areas for the lifts are covered, although the walkways to the lifts are not.

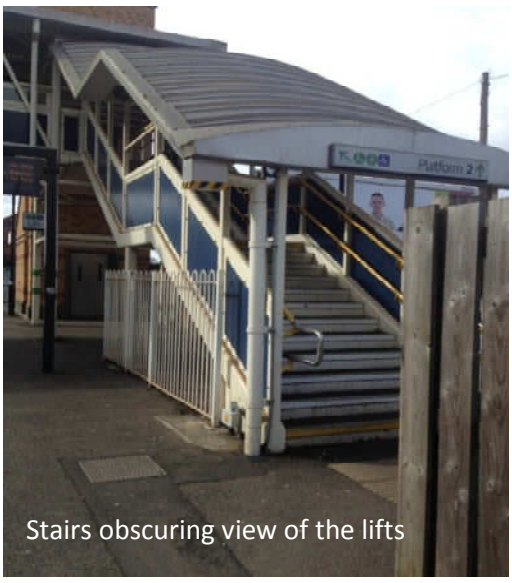
3.30 On platform 1, the help point and induction loop are easily identifiable, being located close to the platform entrance. On platform 2, however, the induction loop is located to the side of the lift and is difficult to locate.

3.31 On each platform, accessible train ramps are available and covered. However, the ramps are located at the far-end of the platform, a long walk from the platform entrance. Tactile warning strips are located at the edges of both platforms.

3.32 Clear platform signage is available, noting the platform number. There is clear directional signage indicating the location of the lifts and station entrances/exits. On the other hand, there is a lack of clear signage indicating the location of the accessible ramps and lack of area map noting locations around the station.

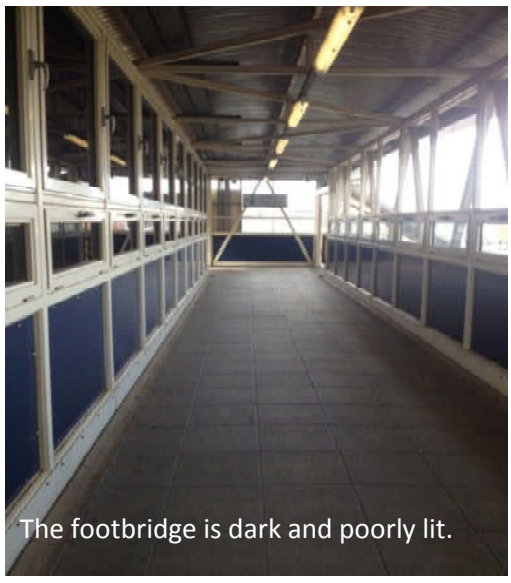
3.33 Platforms have loud and clear audible messages, as well as clear visual real-time information. Lifts have clear and audible messages and lift buttons are provided in Braille.

3.34 Four clearly marked disabled parking spaces outside to the left of the main entrance. Secondary entrance is via a quite steep and long ramp, which would be difficult to navigate for wheelchair users.



Stairs obscuring view of the lifts

Clear signage and help-point on platform



The footbridge is dark and poorly lit.

Purley Station

3.35 Platforms are easily accessible by lifts and stairs, with lifts properly labelled and creating step-free access to the platforms. The four lifts can be easily located and have clear signage indicating platform service. The lifts have clear and audible messages and elevator buttons are provided in Braille.

3.36 In general, directional signage is placed in easily identifiable locations and located on each platform, each entrance/exit and main concourse. Station layout signage is also available at the secondary entrance from Godstone Road, indicating the various platforms. Clear and well-placed signage indicates the location of help point and induction loop for the majority of platforms.

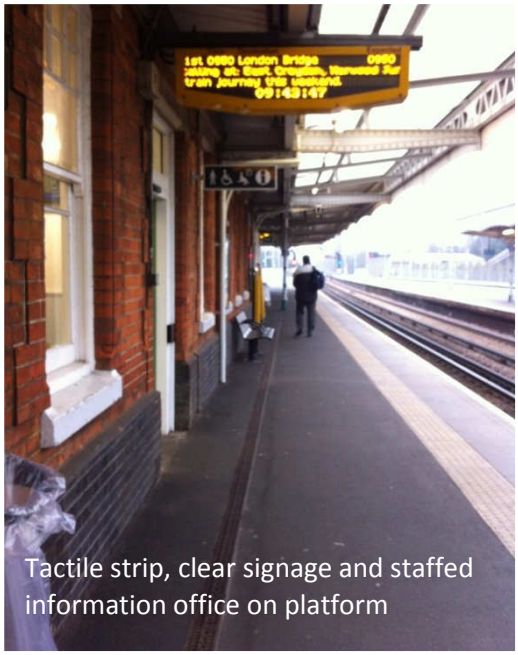
3.37 Stairs leading to/from the platforms are indicated with a tactile strip and with colour contrasted hand rails. Platforms have loud and clear audible messages, as well as clear visual real time information. Accessible train ramps were available on all available platforms. There is at places a significant walking distance from the platform entrance to the accessible ramp.

3.38 There are multiple disabled car parking spaces available close to the entrance at both the main and secondary station entrance. Appropriate car parking signage is present indicating accessible parking. However, at the time of the site visit, a non-blue badge vehicle was parked in these designated parking spaces, which apparently was not uncommon due to limited loading and drop-off places in the station forecourt.

3.39 Dropped kerbs are present at the entrances to the station, however, there is no tactile strip/colour to demarcate the kerb. At the time of the audit, a vehicle was parked in front of the dropped kerb, making it inaccessible.

3.40 There is an accessible ticket machine outside the main entrance, and also height adjusted ticket office counters inside.

3.41 Platforms 1 and 2 were closed to passengers with no stopping services (through-running trains only). This was not clearly indicated to passengers and the platforms were still accessible to the public.



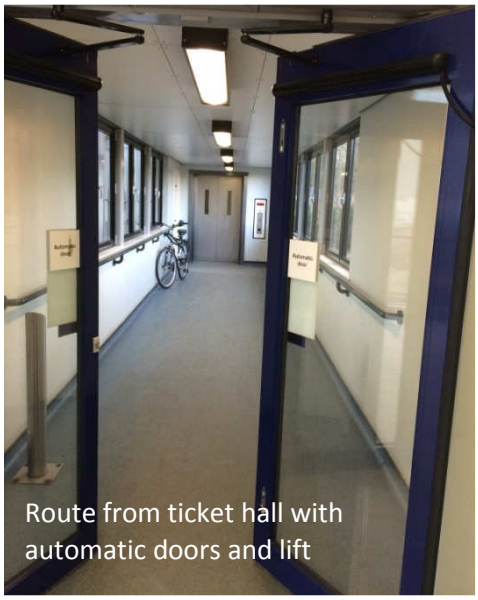
Tactile strip, clear signage and staffed information office on platform

Meeting Point, clear signage and ramp available on platform

Accessible ticket machine

Rutherglen Station

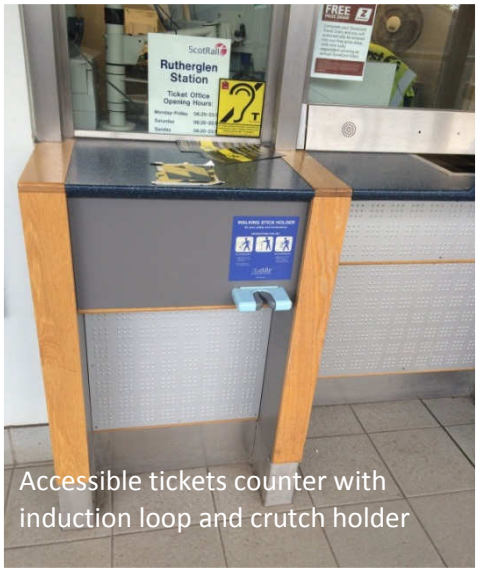
3.42 Platforms are easily accessible from the ticket hall, offering step free access. An automatic door is available from the ticket hall to the platforms, operated through push-buttons.



Route from ticket hall with automatic doors and lift

3.43 The ticket hall is accessible through a footbridge with both stairs and a lift leading down to the platform/ticket hall level. The footbridge is covered and well maintained. The lift serving the footbridge was out of order during the time of the audit. This was of short duration and apparently not a regular occurrence. Alternatively, steps are available with step edges being textured, contrast coloured and with handrails present. Some maintenance issues where noted for the stairs.

3.44 Step-free access is only available from the main entrance at Victoria Street. The secondary entrance from Farmeloan Road is only accessible via stairs. Furthermore, this route to the station does not have pavement, nor is there any signage indicating this is an entrance to the station.

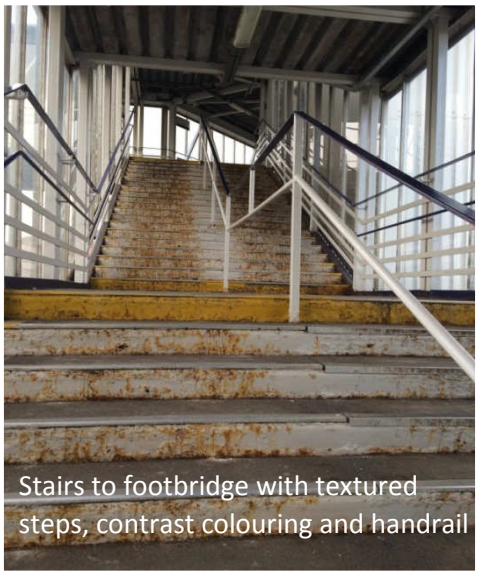


Accessible tickets counter with induction loop and crutch holder

3.45 Platforms have textured edges and yellow marking to highlight platform edge. Part of the platforms is covered in gravel, which would be difficult to navigate for wheelchair users and those with reduced mobility. There is, however, a two metre wide asphalt strip along the edges, as well as asphalt around the covered seating areas.

3.46 The ticket counter included a height adjusted counter, accessible for wheelchair users, with both induction loops and a crutch holder.

3.47 In general, signage was available at the main entrance/exit, along footbridge and at platform. Directional signage was available directing passengers to the ticket hall, lifts and platforms. Station maps shown at footbridge entrance show surrounding locality, including bus stops.



Stairs to footbridge with textured steps, contrast colouring and handrail

3.48 There is no accessible parking available. The station car park is adjacent to the station, accessed by vehicles from Regent Drive, however, access from the car park to the station would present problems for mobility impaired users.

Vauxhall Station

3.49 Both the main entrances from Vauxhall Bus Station and the side entrance from South Lambeth Road (only open in peak periods) have step-free access, wide accessible gates, loud and clear audible messages and clear visual real time information. Staff are present at all entrances, and Vauxhall also has an Assistance Point near the main entrance assisting disabled passengers, who either turn up or book in advance. Several platforms have "assisted travel points" where those who need assistance can wait for a member of staff to aid them.

3.50 All platforms are easily accessible by elevators and stairs, with lifts properly labelled. Stairs are leading to/from the platforms from the main concourse are colour contrasted, although handrails are not.

3.51 Lifts can generally be easily located and have clear signage indicating platform service. The lift to platform 1 can be more difficult to locate due to its access from a different location to the other lifts. The lifts have clear and audible messages and elevator buttons are provided in Braille. At platform level, lifts are covered and placed directly in front of seating area.

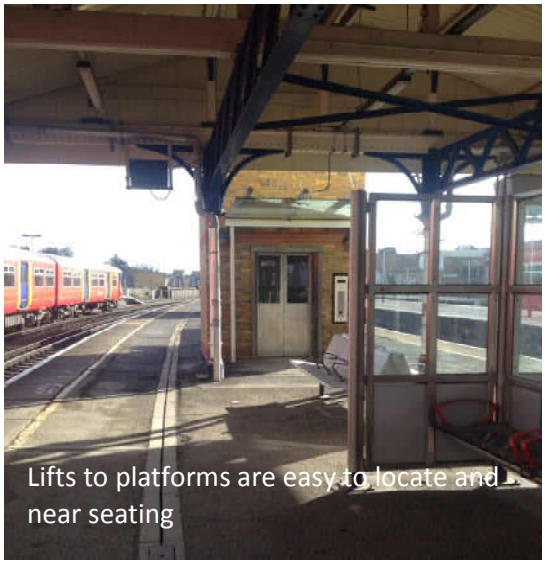
3.52 In a number of lifts a notice was placed informing passengers to contact the main desk should they require accessibility assistance.

3.53 Station attendants were located on the majority of platforms and available to help passengers. Clear and well placed signage is located throughout the station. Signage clearly indicates platform number, location of help points and induction loops. Help points, with induction loops, are centrally placed on platforms.

3.54 At each entrance, there is clear signage indicating the route to the Underground network, rail station and surrounding area. Directional tactile strips leading to the main entrance are present.

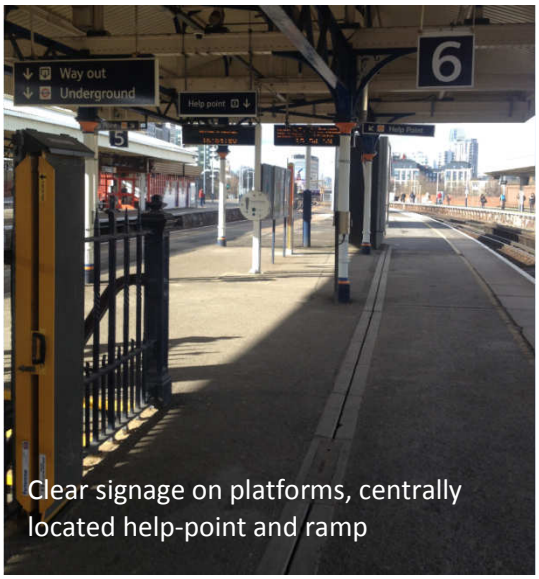
3.55 Platforms have loud and clear audible messages, as well as clear visual real time information. Tactile warning strips are located at the edges of the platforms, except for platforms 5 and 6 where the yellow warning strips are fading. At places there is a significant step between platform and trains.

3.56 No accessible parking is available as there is no station car park. Accessible pick-up points are not available either.



Lifts to platforms are easy to locate and near seating

Clear signage to platforms and around the station



Clear signage on platforms, centrally located help-point and ramp

4 Station Counts

Introduction

4.1 Station counts were undertaken at the selected A4A stations in the spring of 2015, mainly in March before Easter, but a few station were also surveyed in April and May. The counts included videos surveying all station entrances/exits and all lifts. There were no incidents reported during the surveys with all entrances and lifts being in use and working order.

4.2 Below is presented the station counts for each station for all entrances/exits, as well as the lift usage at each station, both broken down by disability categories.

Entry/Exit Counts

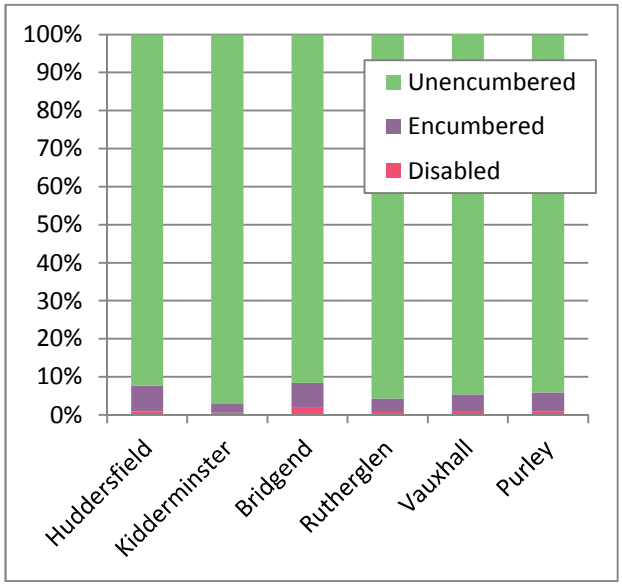
4.3 The surveyed stations have between one and three entrances, some of which were only in use in peak periods. The total numbers of daily entries and exits for each station on a weekday and Saturday are presented in Tables 4.1 to 4.6 overleaf.

4.4 As can be seen, the total number of station users varies between the selected stations from around 3,000-4,000 for Bridgend, Rutherglen and Kidderminster to 9,000-12,000 on weekdays for Huddersfield and Purley to around 60,000 on weekdays for Vauxhall. Some of the stations, like Vauxhall and Purley, see significant differences between the number of users on weekdays and weekends, as would be expected for commuter stations. The same effect is evident to a lower degree for Huddersfield – a mixed use station.

4.5 The numbers of disabled and encumbered users are relatively low for all stations, with disabled users overall representing 1% and encumbered users 5% of total passengers.

4.6 Looking at the individual stations, there are some variations, as presented in Figure 4.1. Bridgend has a higher proportion of disables users, with 2.4% mobility impaired passengers. Huddersfield and Bridgend have higher proportion of encumbered users - both at 7%, while Kidderminster has a lower proportion of encumbered users at 2.5%. There are generally few hearing impaired users, this is likely to some degree to be caused by the difficulty in detecting this impairment.

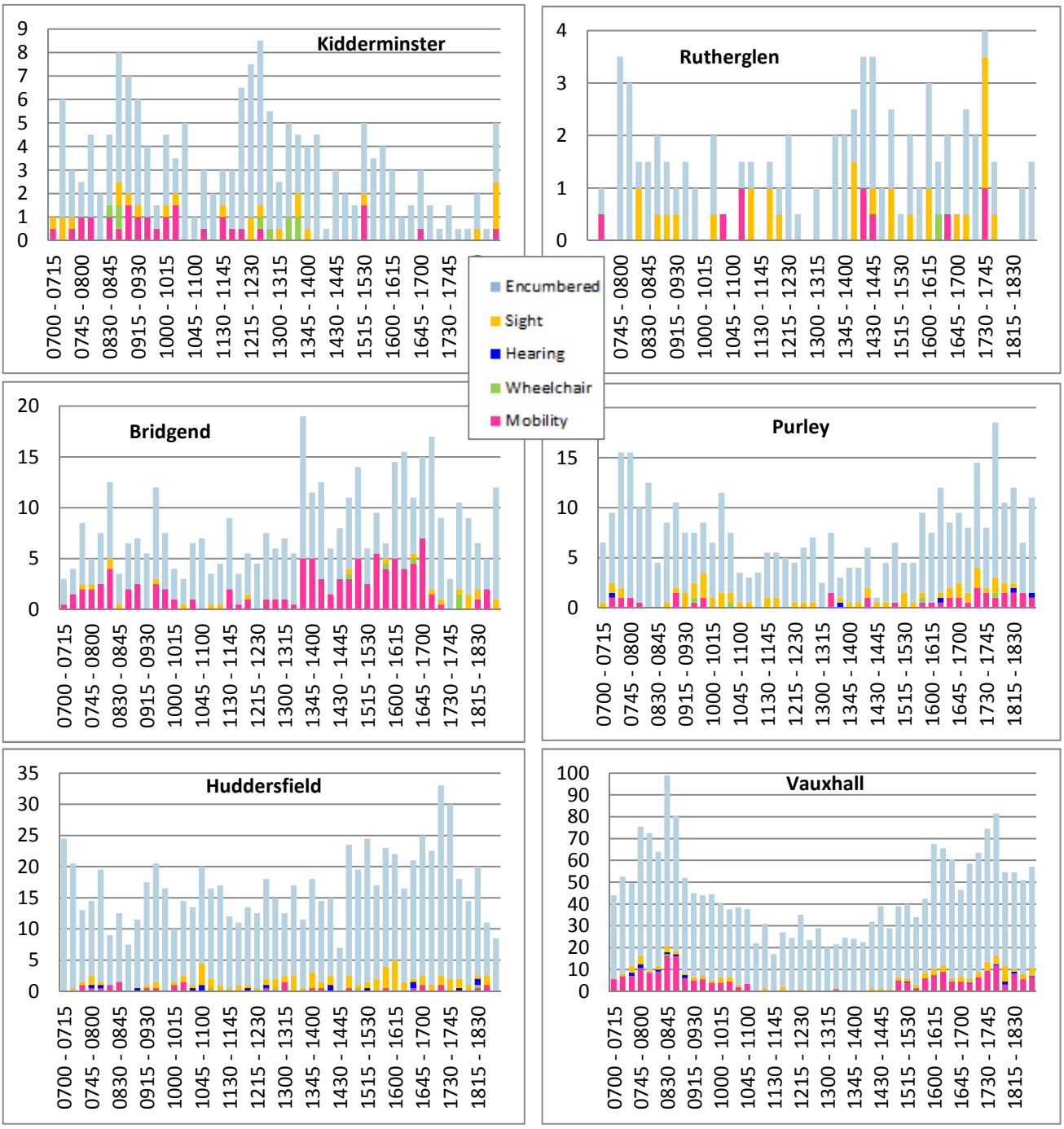
Figure 4.1: Split in User Categories per Station



4.7 Looking at the distribution of disabled and encumbered station users throughout the day, as presented in Figure 4.2, there are also some sharp differences between the stations. Vauxhall and, to a lesser degree, Purley and Bridgend provides typical work-travel patterns with marked peak periods. Huddersfield and Rutherglen have relatively stable levels of disabled and encumbered users, whilst Kidderminster has more activity in the first half of the day.

4.8 Similarly, while mobility issues dominate the disabled users at Vauxhall and Bridgend, the other stations appear to have a more even mix of disabilities. After mobility impaired users, sight impaired users constitute a significant group of the disabled users, overall.

Figure 4.2: Weekday Arrival Pattern for Disabled and Encumbered Users at the Selected Stations



Note: Graphs does not include unencumbered station users, these constitutes 95 % of all station users, on average

Table 4.1: Huddersfield Station – Entry/Exit Count

Day of week	Mobility	Wheelchair	Hearing	Sight	Encumbered	Unencumbered	Total
Weekday	16	2	8	53	727	11319	12125
Saturday	15	13	2	33	367	4593	5023
Weekday	0.1%	0.02%	0.1%	0.4%	6%	93%	100%
Saturday	0.3%	0.3%	0.04%	0.7%	7%	91%	100%

Table 4.2: Kidderminster Station – Entry/Exit Count

Day of week	Mobility	Wheelchair	Hearing	Sight	Encumbered	Unencumbered	Total
Weekday	17	5	0	12	131	4573	4736
Saturday	7	0	0	6	59	2697	2769
Weekday	0.3%	0.1%	0.0%	0.3%	3%	97%	100%
Saturday	0.3%	0.0%	0.0%	0.2%	2%	97%	100%

Table 4.3: Bridgend Station – Entry/Exit Count

Day of week	Mobility	Wheelchair	Hearing	Sight	Encumbered	Unencumbered	Total
Weekday	94	3	0	12	284	3501	3893
Saturday	1	3	0	15	126	2011	2156
Weekday	2.4%	0.08%	0.0%	0.3%	7%	90%	100%
Saturday	0.0%	0.1%	0.0%	0.7%	6%	93%	100%

Table 4.4: Rutherglen Station – Entry/Exit Count

Day of week	Mobility	Wheelchair	Hearing	Sight	Encumbered	Unencumbered	Total
Weekday	5	1	0	14	50	2943	3012
Saturday	0	1	0	11	76	1301	1389
Weekday	0.2%	0.02%	0.0%	0.5%	2%	98%	100%
Saturday	0.0%	0.1%	0.0%	0.8%	5%	94%	100%

Table 4.5: Vauxhall Station – Entry/Exit Count

Day of week	Mobility	Wheelchair	Hearing	Sight	Encumbered	Unencumbered	Total
Weekday	213	1	13	79	1885	57727	59916
Saturday	28	2	0	16	790	13275	14111
Weekday	0.4%	0.01%	0.02%	0.1%	3%	96%	100%
Saturday	0.2%	0.01%	0.0%	0.1%	6%	94%	100%

Table 4.6: Purley Station – Entry/Exit Count

Day of week	Mobility	Wheelchair	Hearing	Sight	Encumbered	Unencumbered	Total
Weekday	24	2	3	33	309	8646	9015
Saturday	2	0	0	20	157	2321	2500
Weekday	0.3%	0.02%	0.03%	0.4%	3%	96%	100%
Saturday	0.1%	0.0%	0.0%	0.8%	6%	93%	100%

Lift Usage Counts

4.9 The surveyed stations have between one and four lifts, depending on layout. For stations with a footbridge and lifts on either end, only one lift has been surveyed on the assumption that lift users would use both lifts. This includes Huddersfield, Kidderminster and Bridgend stations. Vauxhall and Purley are the only stations with four lifts, going from the station entrance level up to the platform level. The fourth lift at Purley Station, however, leads to a platform that is not in use so has not been included in the survey.

4.10 The total numbers of daily lift usage for each station on a weekday and Saturday are presented in Table 4.9 to 4.14 overleaf, with a summary in Table 4.7. The tables show total lift usage, that is users across all lifts at each station. However, for the three stations with footbridges with lifts at either end, only one lift count is included as it is assumed the same station users would use both lifts.

Table 4.7: Total Lift Usage per User Category

Day of week	Mobility	Wheelchair	Hearing	Sight	Encumbered	Unencumbered	Total
Weekday	67	7	0	69	915	2925	3982
Saturday	39	2	0	16	546	938	1541
Weekday	2%	0.2%	0%	2%	23%	73%	100%
Saturday	3%	0.1%	0%	1%	35%	61%	100%

4.11 Compared to the station entry/exit counts, the proportion of disabled and encumbered lift users is substantially higher, at 4% and 29% respectively, overall. However, this varies significantly between the stations, as can be seen in the tables overleaf, with larger stations generally seeing lower disabled lift user proportions. The majority of the disabled users are mobility or sight impaired. The proportion of encumbered users has less of a clear pattern, varying between 15% at Kidderminster to over 50% at Bridgend. Not surprisingly there is a higher number of encumbered lift users during the Saturday counts than the weekday counts.

4.12 The majority of the lift users are unencumbered, around 70% overall. The highest proportions (over 80%) can be found in Kidderminster station, with the London stations not far behind. Bridgend has the lowest proportion of unencumbered users at under 40%.

4.13 When comparing the lift usage to the overall station usage reported on in the previous chapter, 5% of the station users use the lifts. As seen in Table 4.8, the lift usage is particularly low at Kidderminster and Bridgend – where the station audits reported that the lifts were difficult to find at the platforms and/or poorly signed to. Rutherglen and Purley have the highest lift usage, which correspond to the lifts at these stations being reported as well located and easy to find.

Table 4.8: Lift Usage Compared to Station Usage

Station	Weekday Lift Users			Proportion of Station Users			
	Disabled	Encumbered	Unencumb.	Disabled	Encumbered	Unencumb.	Total
Huddersfield	16	154	186	20%	21%	2%	3%
Kidderminster	3	10	52	9%	8%	1%	1%
Bridgend	16	50	35	15%	18%	1%	3%
Rutherglen	6	50	200	28%	100%	7%	8%
Vauxhall	74	499	2,123	24%	26%	4%	4%
Purley	28	153	331	46%	50%	4%	6%

Table 4.9: Huddersfield Station – Lift Count

Day of week	Mobility	Wheelchair	Hearing	Sight	Encumbered	Unencumbered	Total
Weekday	4	3	0	10	154	186	356
Saturday	6	1	0	8	87	158	260
Weekday	1%	1%	0%	3%	43%	52%	100%
Saturday	2%	0.4%	0%	3%	33%	61%	100%

Table 4.10: Kidderminster Station – Lift Count

Day of week	Mobility	Wheelchair	Hearing	Sight	Encumbered	Unencumbered	Total
Weekday	0	1	0	3	10	52	65
Saturday	0	0	0	2	10	61	73
Weekday	0%	1%	0%	4%	15%	80%	100%
Saturday	0%	0%	0%	3%	14%	84%	100%

Table 4.11: Bridgend Station – Lift Count

Day of week	Mobility	Wheelchair	Hearing	Sight	Encumbered	Unencumbered	Total
Weekday	16	0	0	1	50	35	101
Saturday	1	1	0	0	20	14	36
Weekday	15%	0%	0%	0.5%	50%	35%	100%
Saturday	3%	3%	0%	0%	56%	39%	100%

Table 4.12: Rutherglen Station – Lift Count

Day of week	Mobility	Wheelchair	Hearing	Sight	Encumbered	Unencumbered	Total
Weekday	3	1	0	3	50	200	255
Saturday	5	0	0	1	43	155	204
Weekday	1%	0.2%	0%	1%	19%	78%	100%
Saturday	2%	0%	0%	0.5%	21%	76%	100%

Table 4.13: Vauxhall Station – Lift Count

Day of week	Mobility	Wheelchair	Hearing	Sight	Encumbered	Unencumbered	Total
Weekday	33	1	0	40	499	2123	2695
Saturday	24	0	0	4	274	384	686
Weekday	1%	0.02%	0%	1%	19%	79%	100%
Saturday	3%	0%	0%	1%	40%	56%	100%

Table 4.14: Purley Station – Lift Count

Day of week	Mobility	Wheelchair	Hearing	Sight	Encumbered	Unencumbered	Total
Weekday	12	3	0	14	153	331	512
Saturday	3	0	0	1	112	166	282
Weekday	2%	0.5%	0%	3%	30%	65%	100%
Saturday	1%	0%	0%	0.4%	40%	59%	100%

5 Passenger Research

Introduction

5.1 This chapter provides an overview of the analysis of the interview surveys. It includes background information on who uses the A4A survey stations and for what types of trip, initially looking at the demographic characteristics of the sample of passengers, journey purpose, use of railcard and access modes. Following this, the chapter explores the user satisfaction with the stations and the stated impacts of the A4A improvements. Finally, a short comparison with the 2010 study.

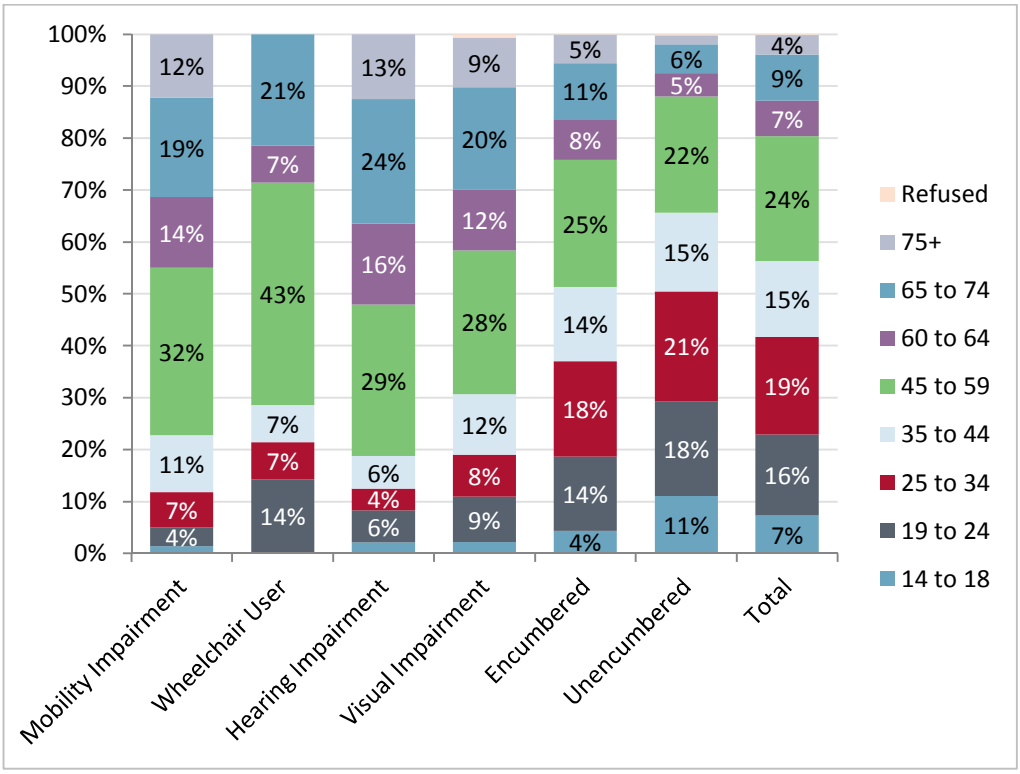
5.2 It should be borne in mind when looking at passenger profiles that our sample is weighted towards those with a disability or encumbrance.

5.3 The focus of the analysis is a comparison between the responses of each of the disability groups surveyed at the six A4A stations to see how these different groups have benefited from the improvements. There are also comparisons between the survey stations, particularly for user satisfaction themes. Due to the sample size segregation on both stations and user categories was not appropriate.

Station User Profiles

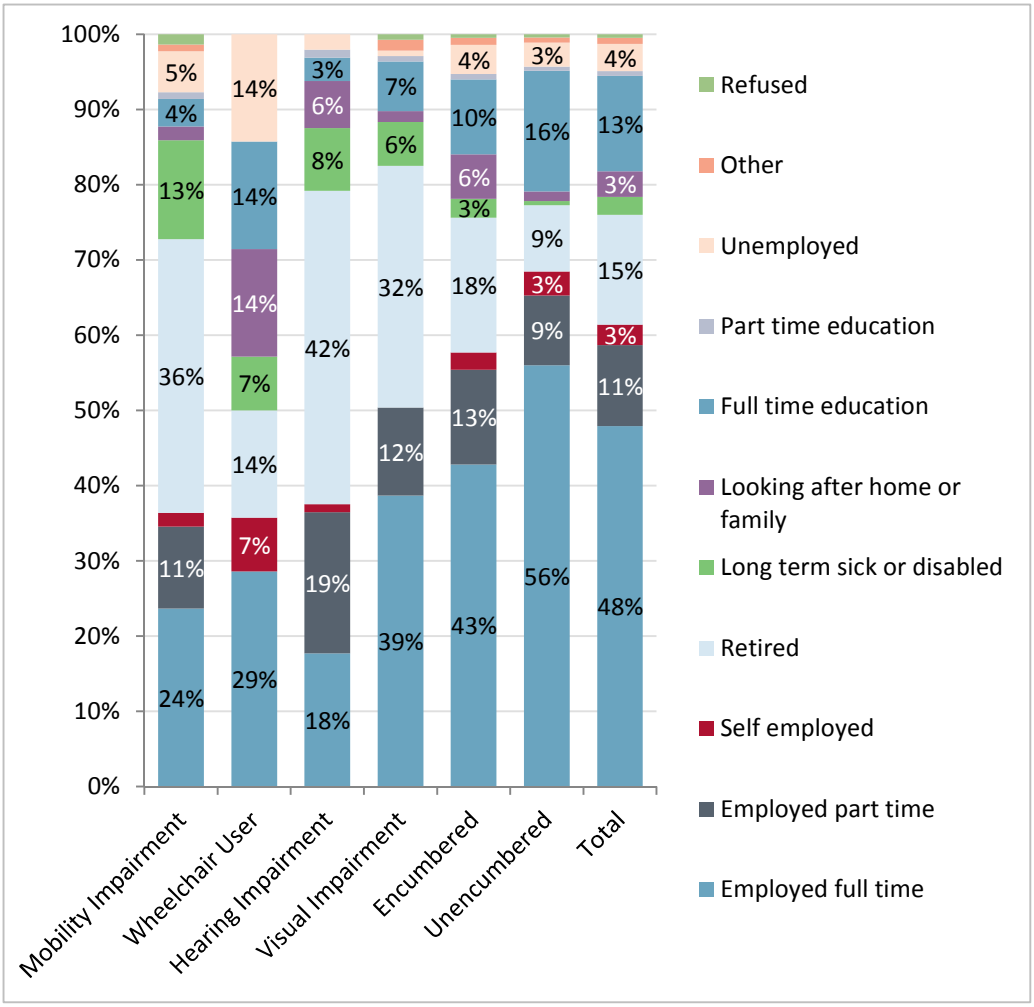
5.4 Overall, 13% of our sample of users at the six A4A stations are aged 65 or over. However, this figure rises notably amongst those with a disability of some kind: 37% of those with a hearing impairment, and 31% of those with a mobility impairment are aged 65 or over.

Figure 5.1: Age Profile



5.5 Around half (48%) of our sample of A4A station users are currently in full time employment. Amongst those with a mobility, hearing or visual impairment, the proportion that is either retired or registered long term sick or disabled is significantly higher, as one might expect. The proportion of those in full-time employment ranged from 18% for those with a hearing impediment, to 39% for those with a visual impairment.

Figure 5.2: Employment Status Profile

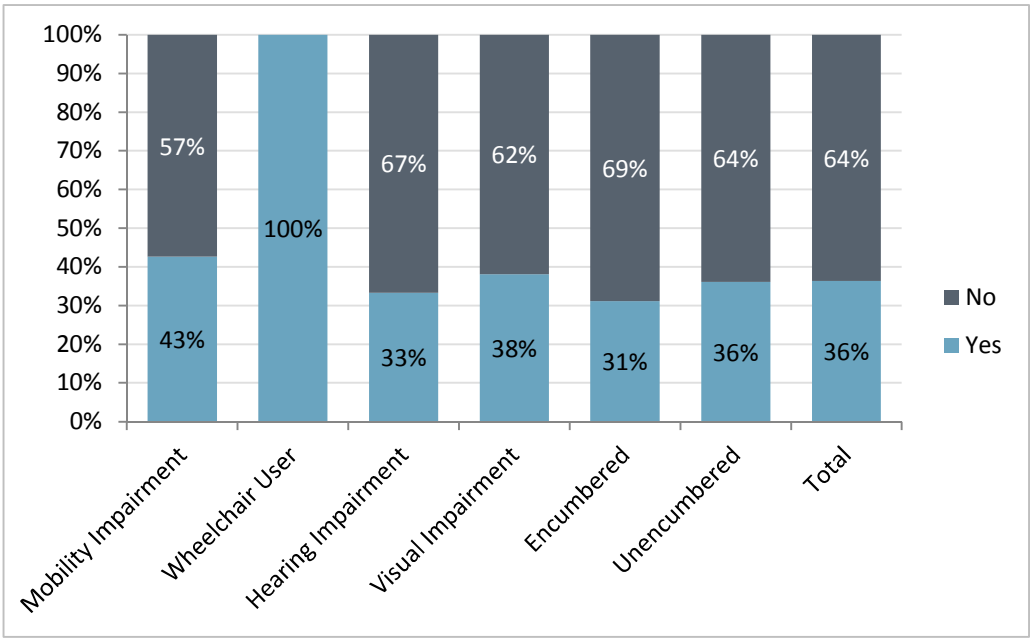


Disability

5.6 Approximately 18% of respondents said they have an illness, disability or infirmity which affects their mobility. The proportion of these passengers which are registered disabled, however, varies quite considerably, so that while 100% of wheelchair users are registered, just 33% of those with a hearing impairment are.

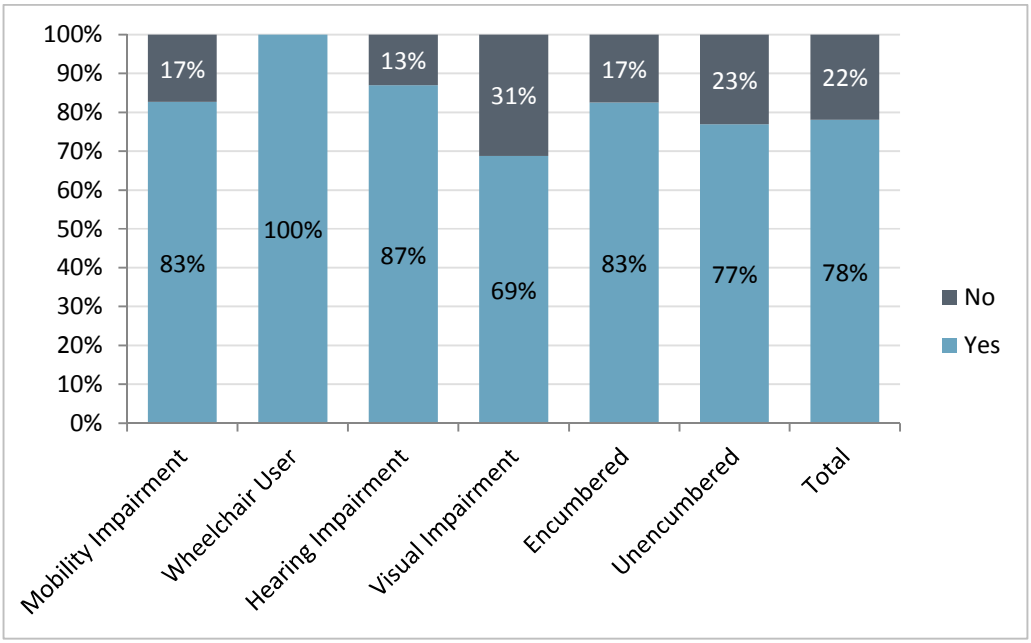
5.7 In total 36% of the sample users were registered as disabled, the same percentage as for the unencumbered category.

Figure 5.3: Passengers Registered as Disabled



5.8 Those that are registered disabled are very likely (78%) to have a blue or orange badge which enables them to park in disabled bays.

Figure 5.4: Blue and Orange Badge Holders

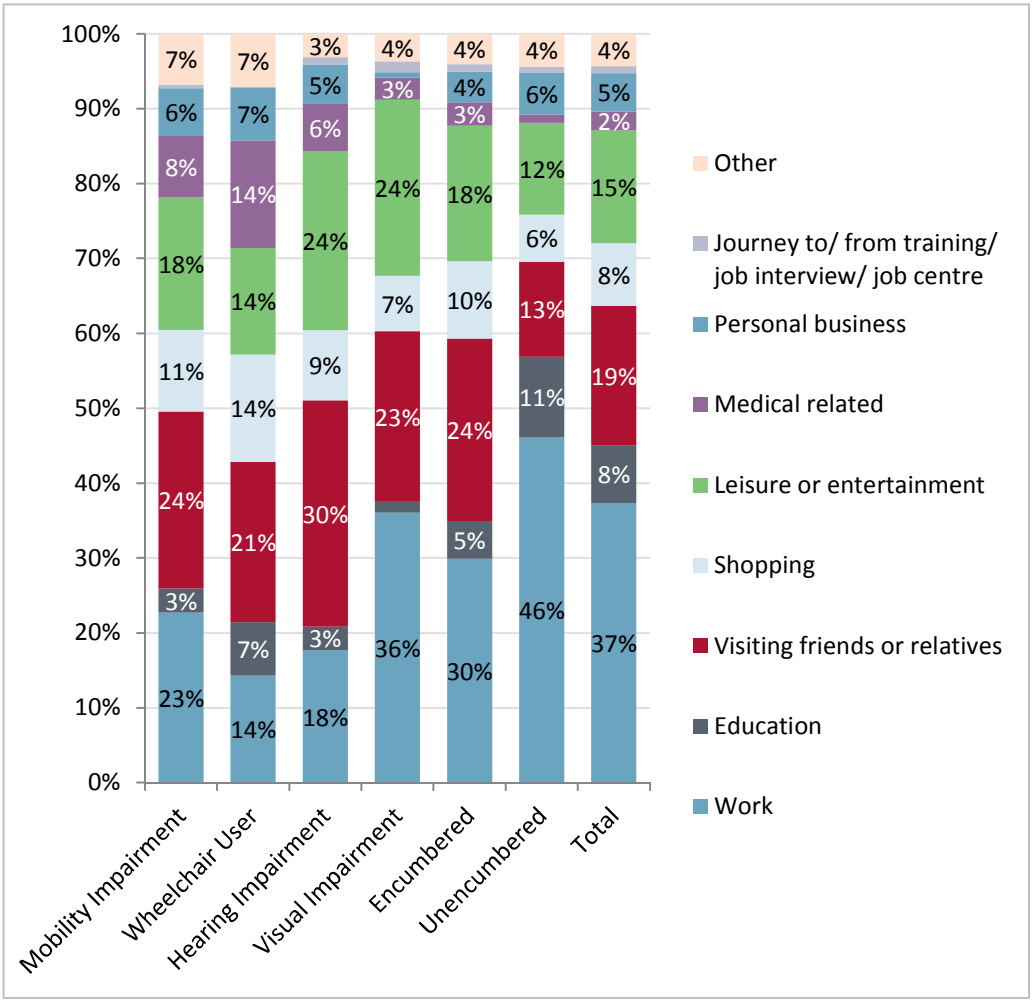


Base: Passengers registered as disabled

Trip Profiles

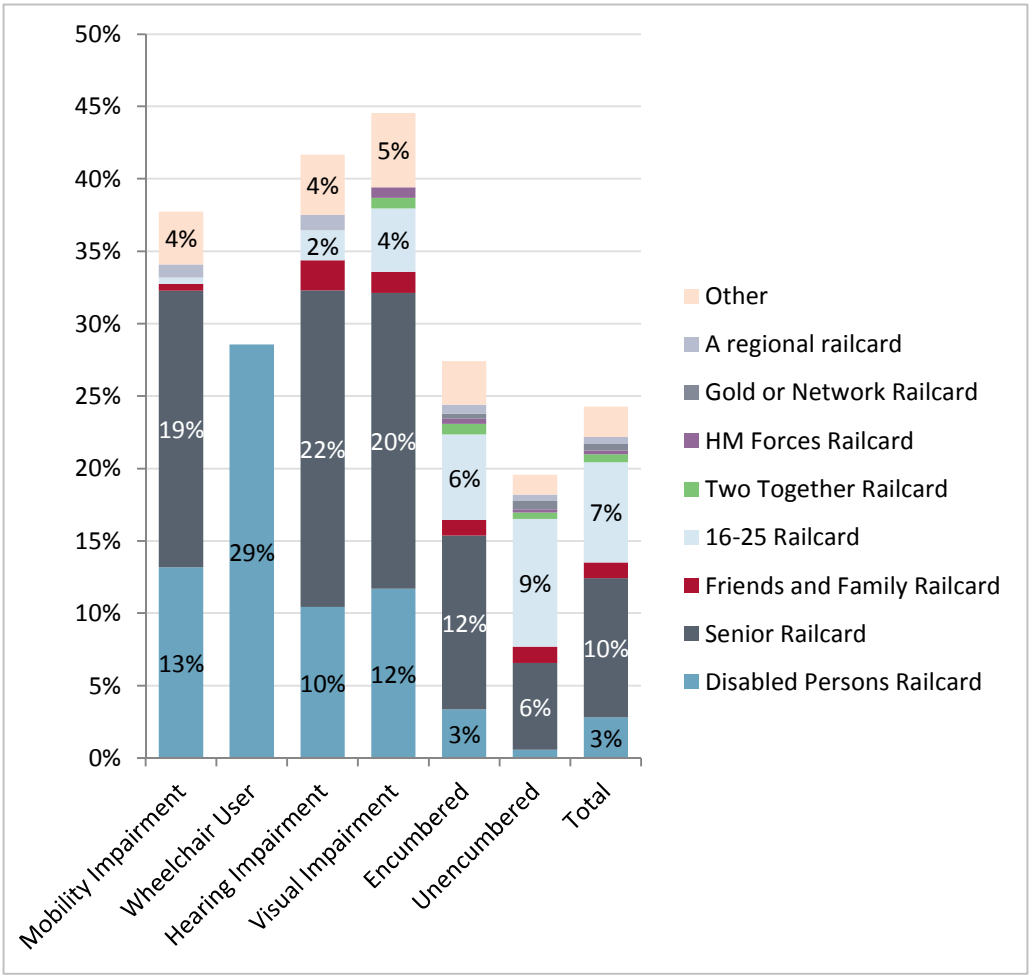
5.9 Across all users of the six stations, work based trips account for the highest proportion of trips, at 37%, followed by visiting friends and relatives at 19% and leisure trips at 15%. Amongst disabled passengers, visiting friends and relatives was the most popular reason for travelling, followed by work trips and leisure or entertainment trips.

Figure 5.5: Trip Purpose Profile



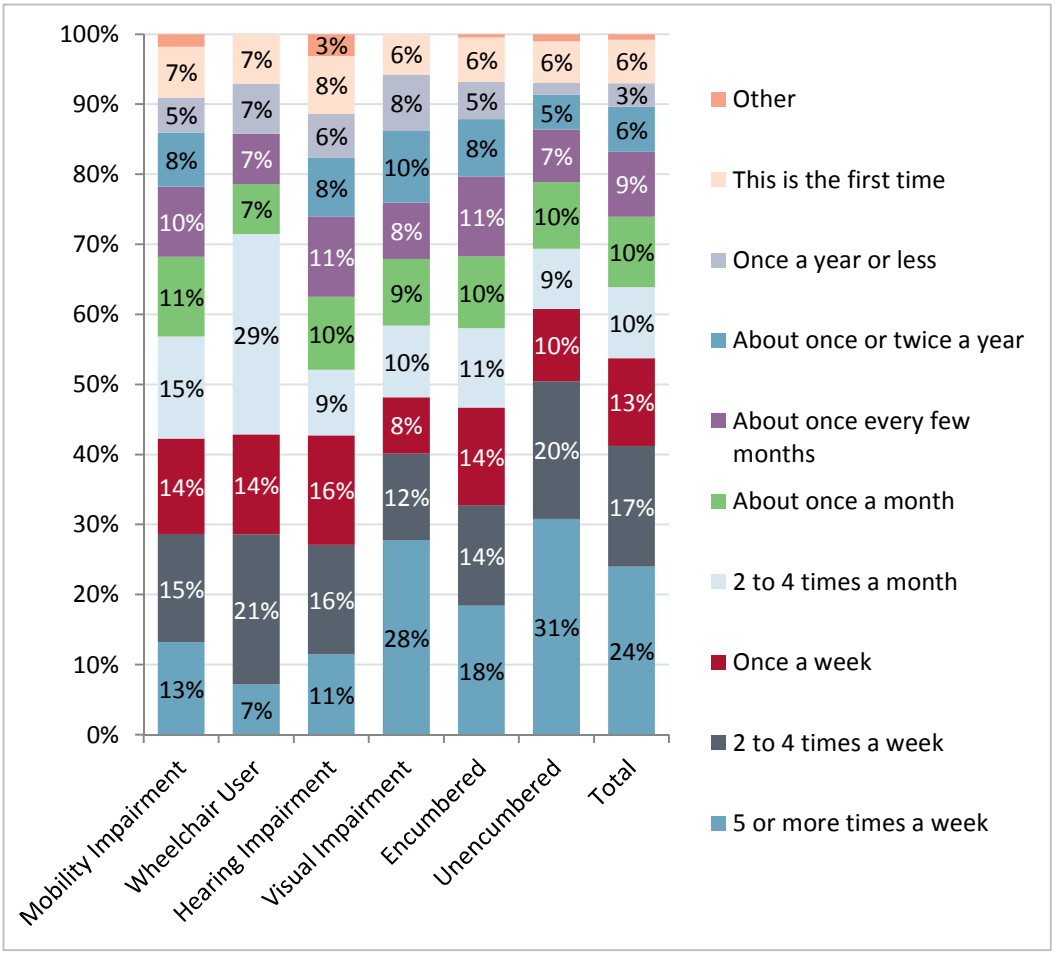
5.10 Railcard use amongst our sample of users at each of the six A4A stations is quite low with around 25% of all station users, and only 40% of passengers with a disability, holding a railcard, typically either a Senior or Disabled Persons Railcard. Those with a visual impairment have the highest railcard use, at around 45%. Whilst, only 29% of wheelchair users hold a Disabled Persons railcard.

Figure 5.6: Use of Railcards



5.11 Most people were not making a trip that they generally make on a daily basis, which reflected the fact that most were making non-work based trips, although 50% were making a trip they normally undertake at least once a week. This was highest for unencumbered station users (at 61%), while also a notable proportion of passengers with a disability or encumbrance were also making a trip they undertake at least once a week (approximately 45%).

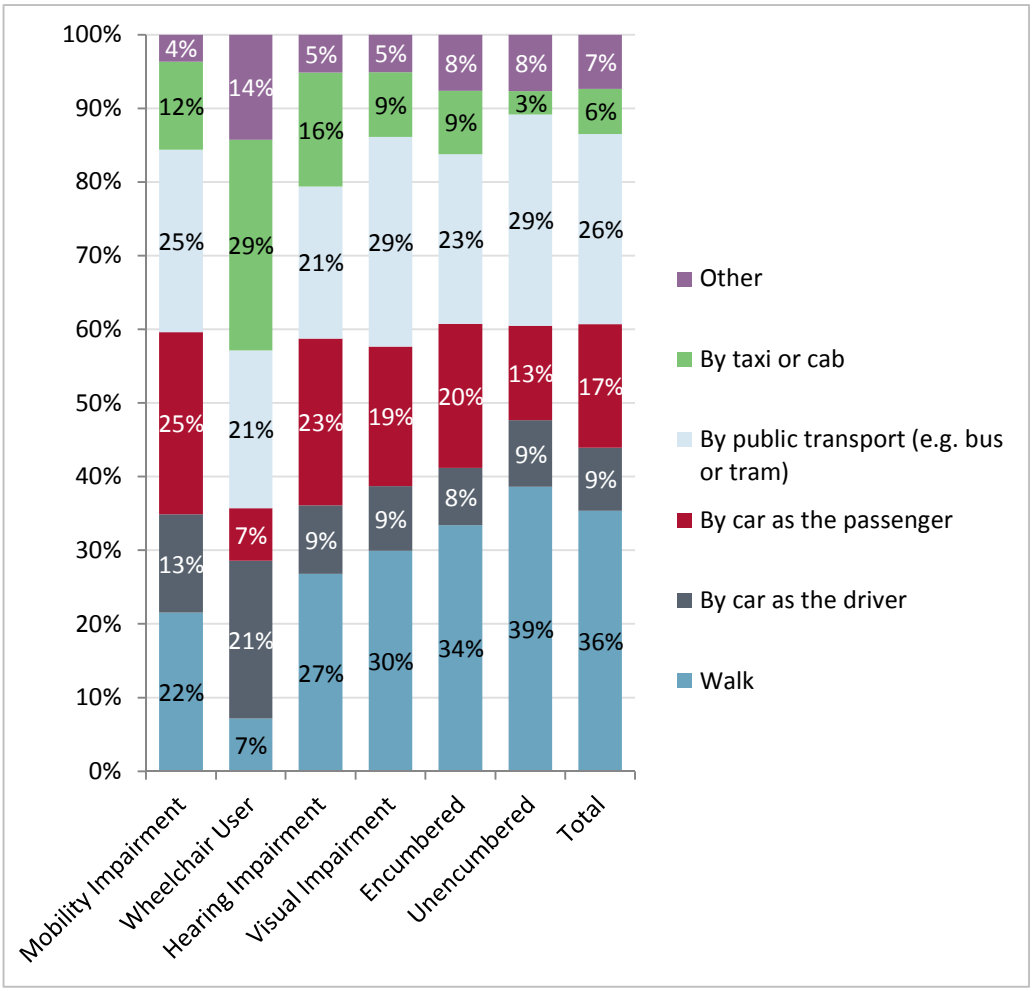
Figure 5.7: Frequency of Rail Travel



5.12 The majority of station users travelled to the station either on foot (36%) or by public transport (26%). Whilst these figures were slightly lower for those with a disability, it was not significantly so, with only 30-35% of passengers with a disability travelling by car (compared to 26% of all passengers).

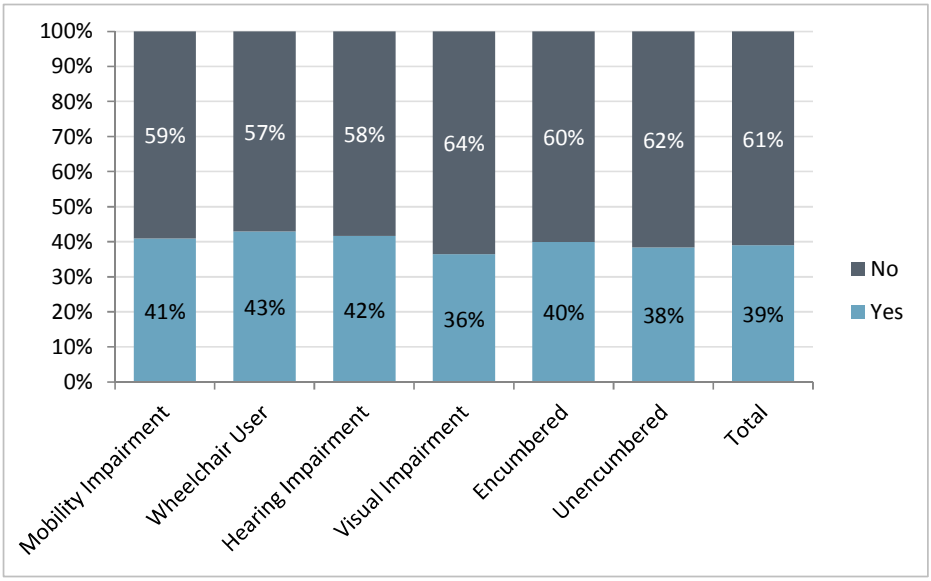
5.13 Wheelchair users were noticeably more likely to get to the station by car -as the driver or by taxi / cab (29% compared with 6% overall).

Figure 5.8: Station Access Mode



1.1 The majority of passengers at the A4A stations did not have a car available to make the trip – only 39% overall did have a car available. This figure did not change notably amongst those with a disability.

Figure 5.9: Car Available for Journey?

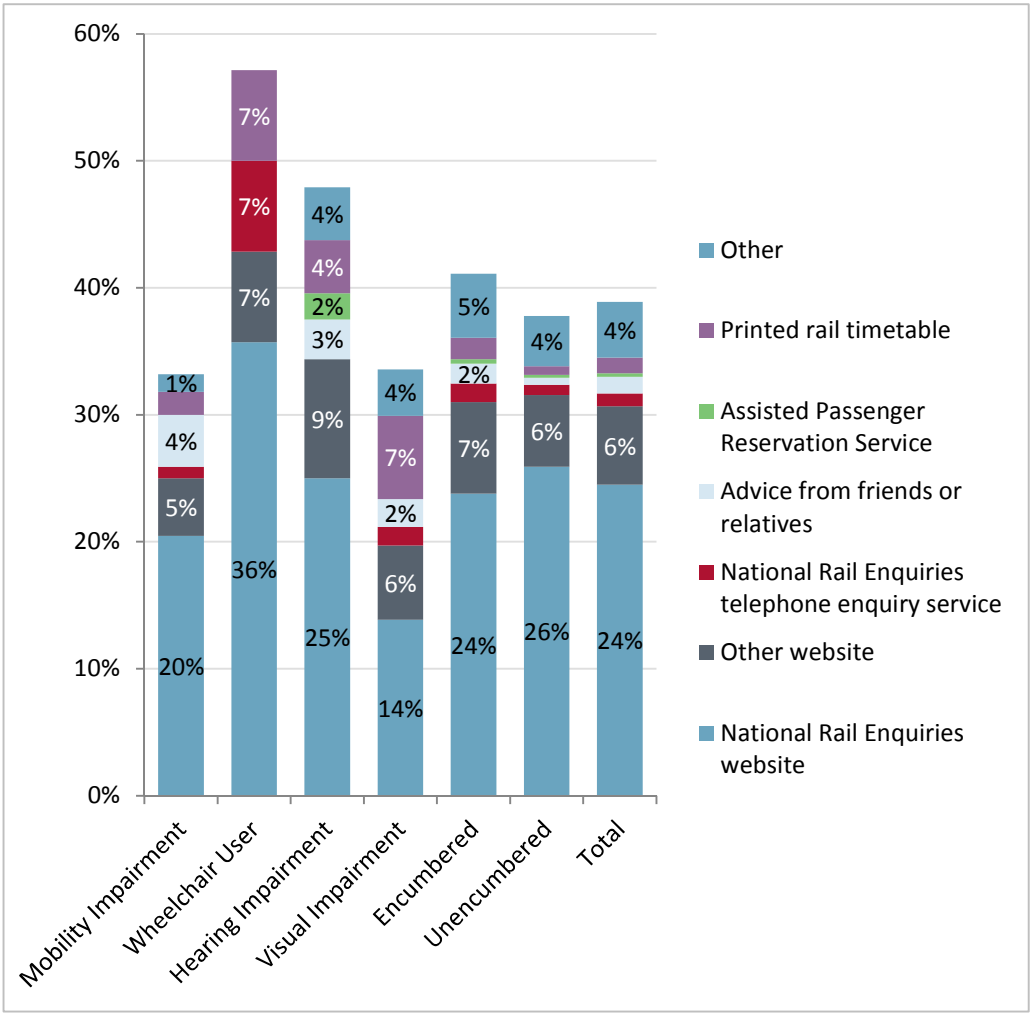


5.14 In Figure 5.10 the information sources used for planning the journey by the sample station users are shown. This chart also indicates the extent to which any source was used. Approximately 40% of all respondents used an information source to help them to plan their journey, with most using the National Rail Enquiries website (24% overall). Information sources were used the most by wheelchair users - 36% of wheelchair users made use of the National Rail Enquiries website, whilst a further 21% used other information sources to plan their journey.

5.15 The reliance on the National Rail Enquiries website for the interviewed rail users generally, and particularly for wheelchair user, further highlights the problem with the identified lack of up-to-date information about accessibility features, and lifts in particular, at Bridgend station and other stations not part of this survey.

5.16 Very few passengers reported to use the Assisted Passenger Reservation Service. This is supported by Passenger Assistance Bookings data from ATOC, which show relatively low usage at the six sample stations, particularly at the larger stations. This data does, however, also indicate a small and increasing growth trend in the use of this service.

Figure 5.10: Information Sources Used

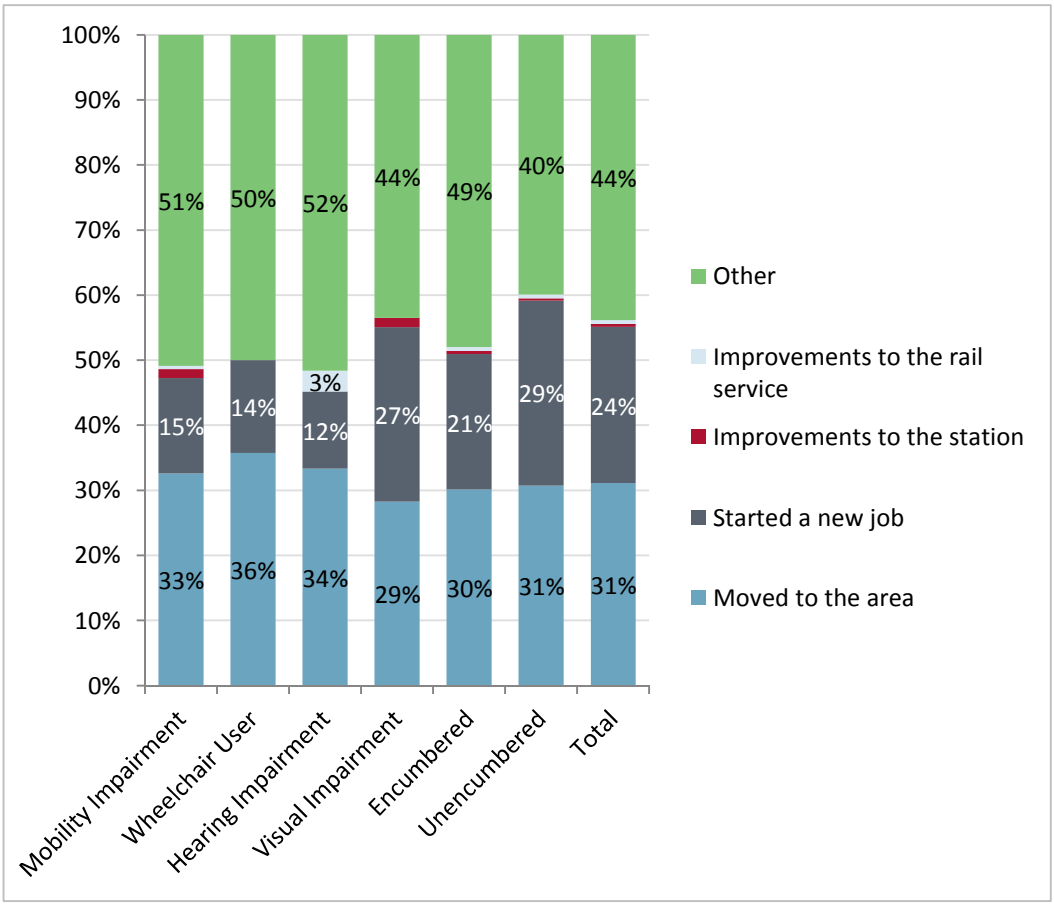


5.17 Passengers were asked why they had started using the station and the answers are shown in Figure 5.11. Moving houses or starting a new job were by far the most common reasons mentioned (except unspecified other reasons). Improvements to the station were not a significant reason given. This could be due to either:

- Those not already using the station being unaware of the A4A improvements; or
- The A4A improvements alone not being sufficient to change behaviour / station use.

5.18 The impact of the A4A improvements in terms of passenger satisfaction and stated behaviour change is explored in the next chapter and, if anything, tends to lend weight to the first (lack of awareness) rather than the second of these reasons.

Figure 5.11: Reason for Starting to Use the Station



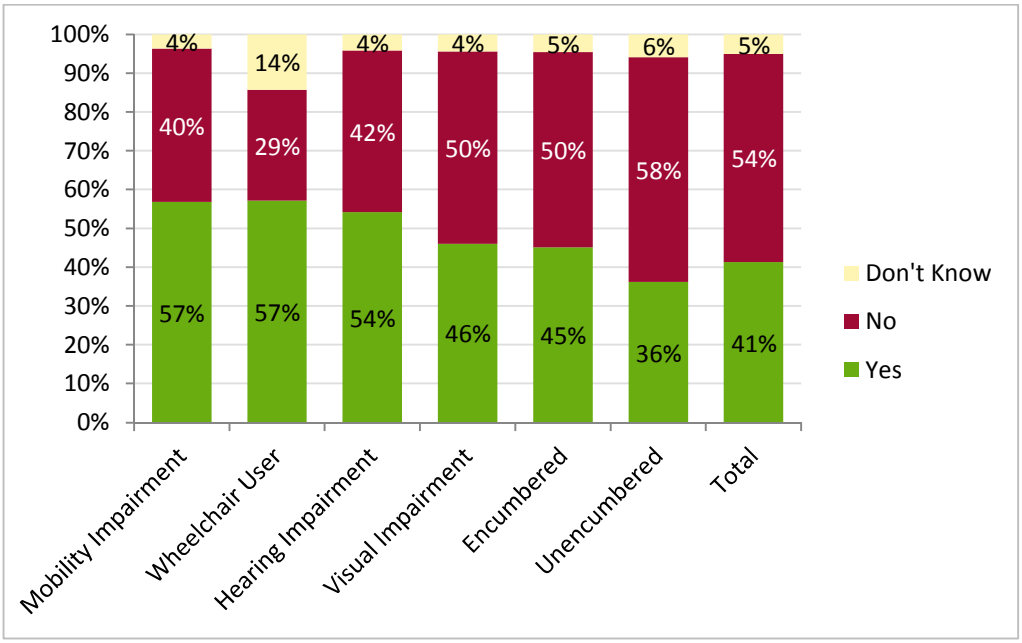
Awareness and Opinions

5.19 The results of the survey questions concerning the awareness amongst the station users of the improvements, and user satisfaction with various aspects of the station are presented below.

Awareness of Improvements

5.20 Overall, 41% of A4A station users had noticed the improvements made at the stations "in the last few years". Amongst passengers with a disability the recognition was higher, with 57% of mobility impaired passengers and wheelchair users noticing the improvements at these stations.

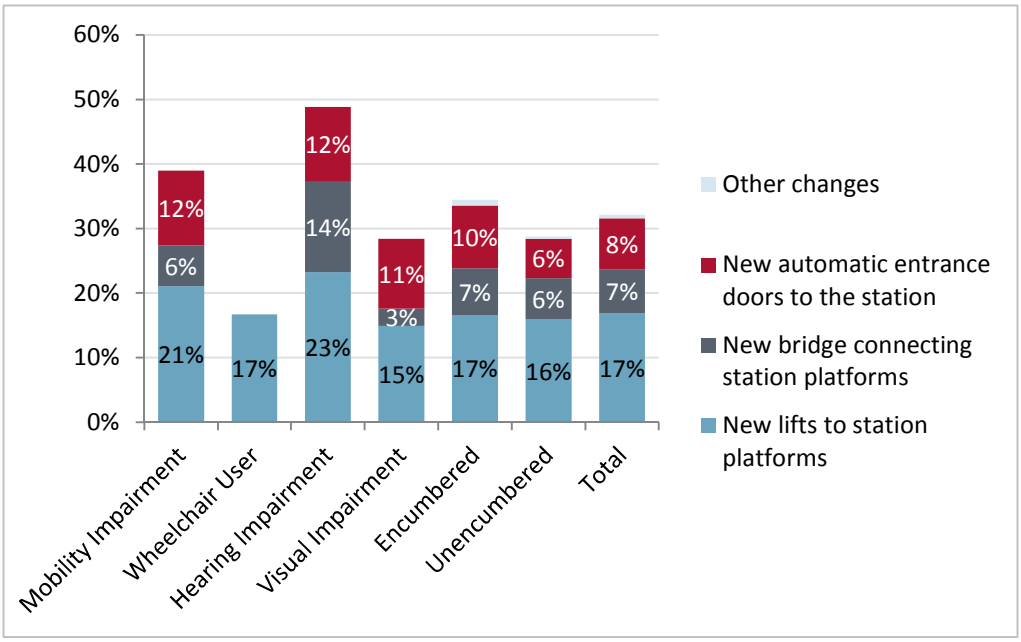
Figure 5.12: Are you aware of any changes made to this station in the last few years to make it easier to use the station?



5.21 In terms of which improvements passengers were aware of, 17% of all A4A survey respondents said they were aware of the new lifts, with 8% aware of the new automatic entrances and 7% aware of new bridges connecting station platform. Awareness amongst passengers with a disability was not substantially different.

5.22 It is possible that these responses have been suppressed somewhat by respondents not regarding the improvements as "changes" because they have been there for as long as they have been using the station. This would explain the inconsistency with the satisfaction ratings shown later on in this report.

Figure 5.13: Are you aware of any of the following changes made to this station in the last few years to make it easier to use?



User Satisfaction

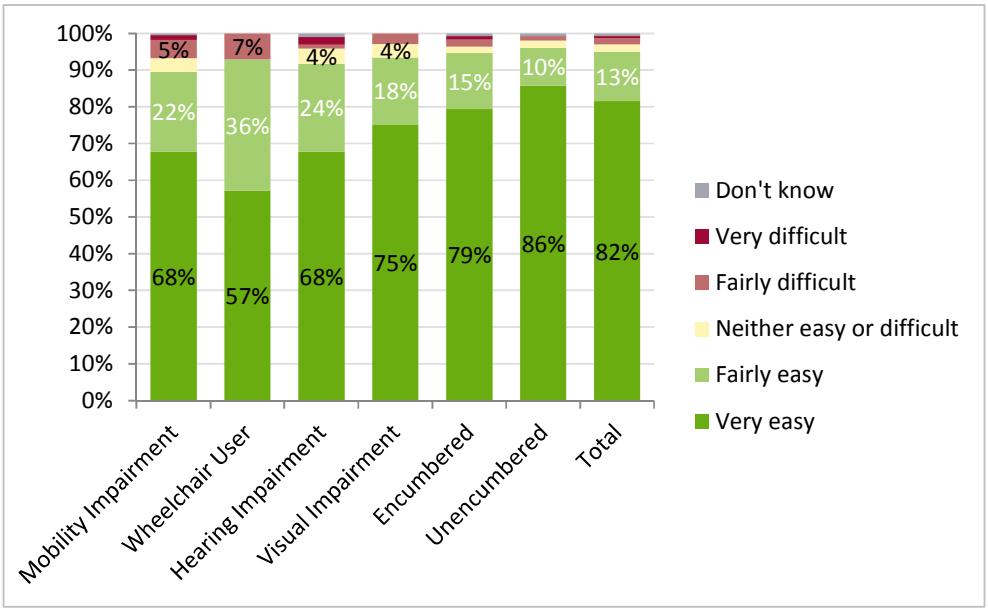
5.23 Overall, the user satisfaction reported by the passengers interviewed at the six A4A stations was high with slight variances between the individual elements of the station user experience.

5.24 Presented below are the findings of user satisfaction levels for the following themes – accessibility, moving around the station, information, comfort facilities provision for passengers with different disabilities and staff.

Accessibility

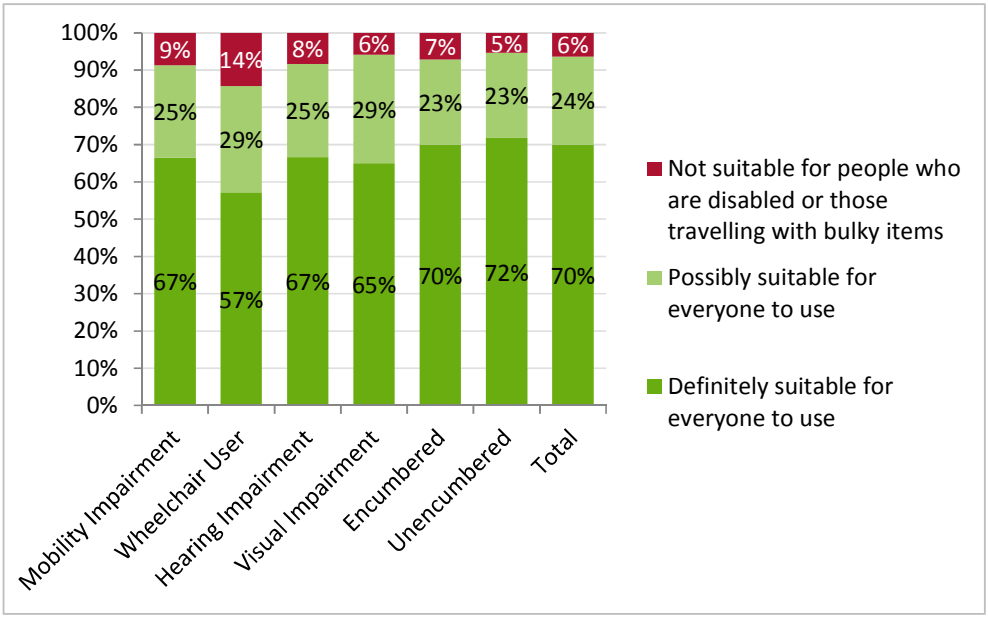
5.25 Most (82%) users of the six A4A stations said that they found getting from the entrance to the platforms 'very easy'. This was also true for the disability groups, with the vast majority describing access from the entrance to the platforms either 'fairly easy' or 'very easy'. Of all respondents, those with a mobility impairment of using a wheelchair were the most likely to find this difficult, although the majority did not.

Figure 5.14: How easy did you find it to get from or to the station entrance to the platforms?



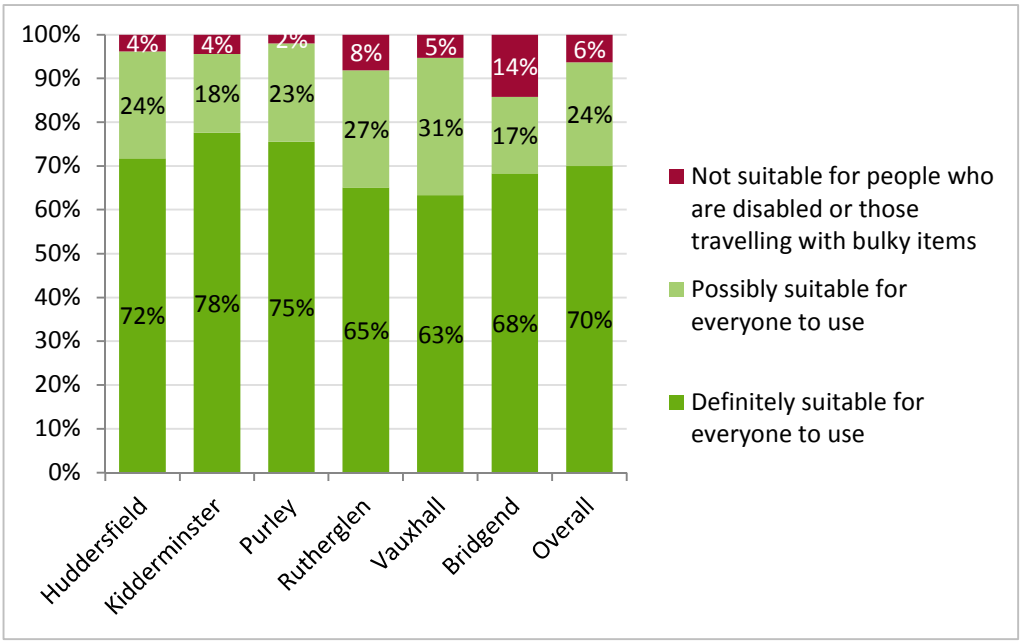
5.26 Respondents were also asked to categorise the overall accessibility of the station they were using, and the majority (70%) said they felt that the station was definitely suitable for everyone to use, with a further 24% saying that they felt it was possibly suitable for everyone to use. This did leave 6% overall and 14% of wheelchair users saying the station is not suitable for people who are disabled or travelling with bulky items.

Figure 5.15: Overall Rating of Station Accessibility



5.27 The stations that had the highest overall rating for station accessibility were Purley, Kidderminster and Huddersfield. Bridgend was rated the worst of the six stations, with 14% describing it as not suitable for people who are disabled or those travelling with bulky items – more than twice the average across the six stations.

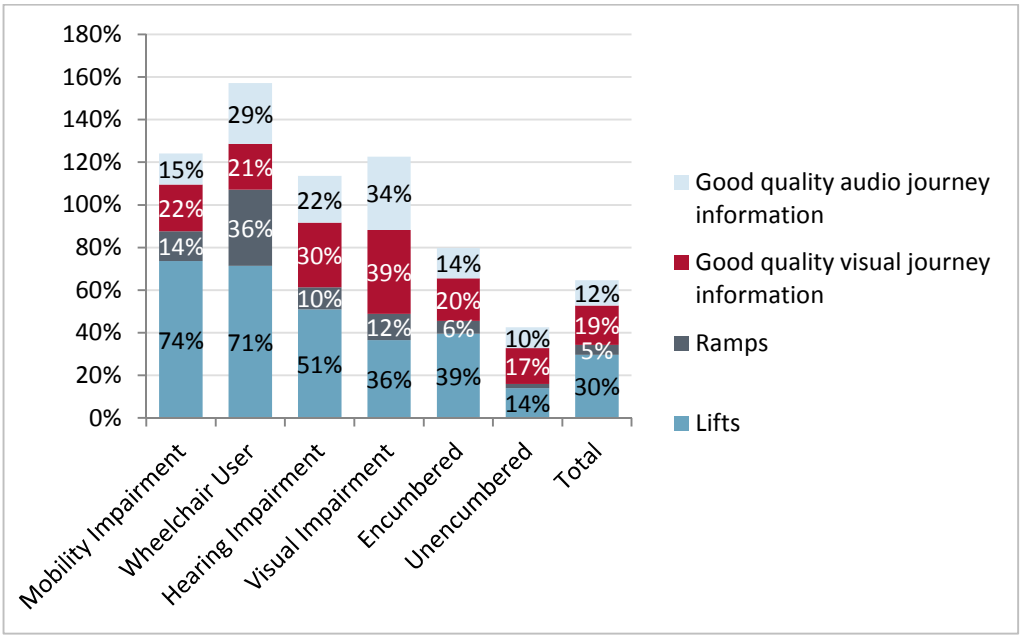
Figure 5.16: Overall Rating of Station Accessibility – by Station



5.28 This result is somewhat opposed to the station user counts which show Bridgend has the highest proportion of disabled and encumbered users of the six stations. However, as the lifts –the most obvious accessibility feature, is reported as being difficult to locate, this might indicate an awareness issue.

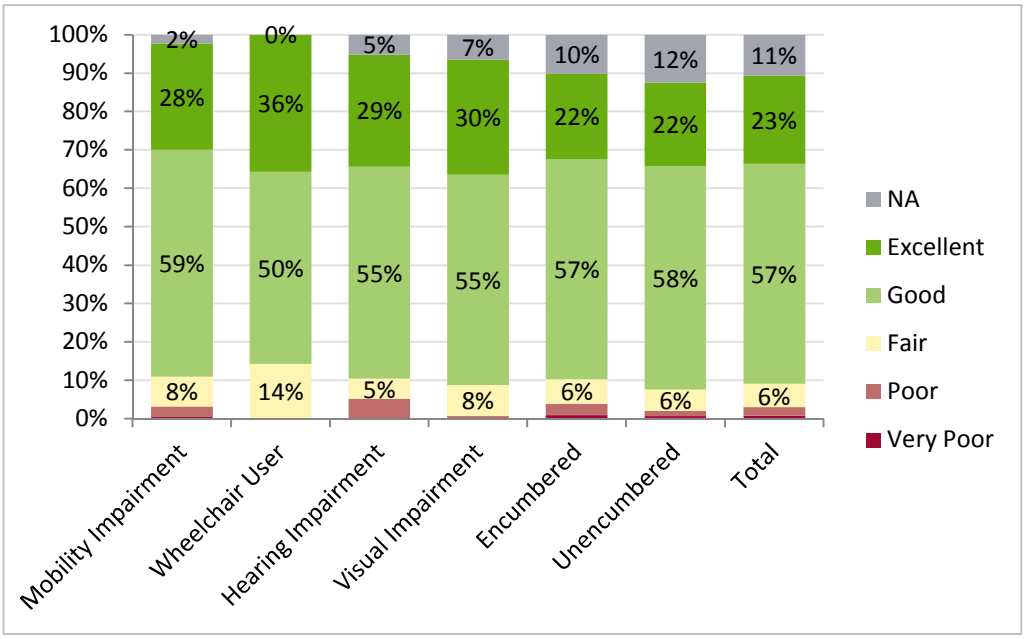
5.29 The facilities that passengers regarded as essential are shown in the following figure. Overall, lifts were the most important facility to passengers, particularly to those in wheelchairs and with mobility impairments – over 70% in both groups said that lifts were essential. Ramps were also important to wheelchair users, with 36% saying that they were essential. Good quality audio and visual journey information were important across all of the disability groups, but particularly for those with hearing and visual impairments.

Figure 5.17: Are any of the following facilities essential in order for you to be able to use this station?



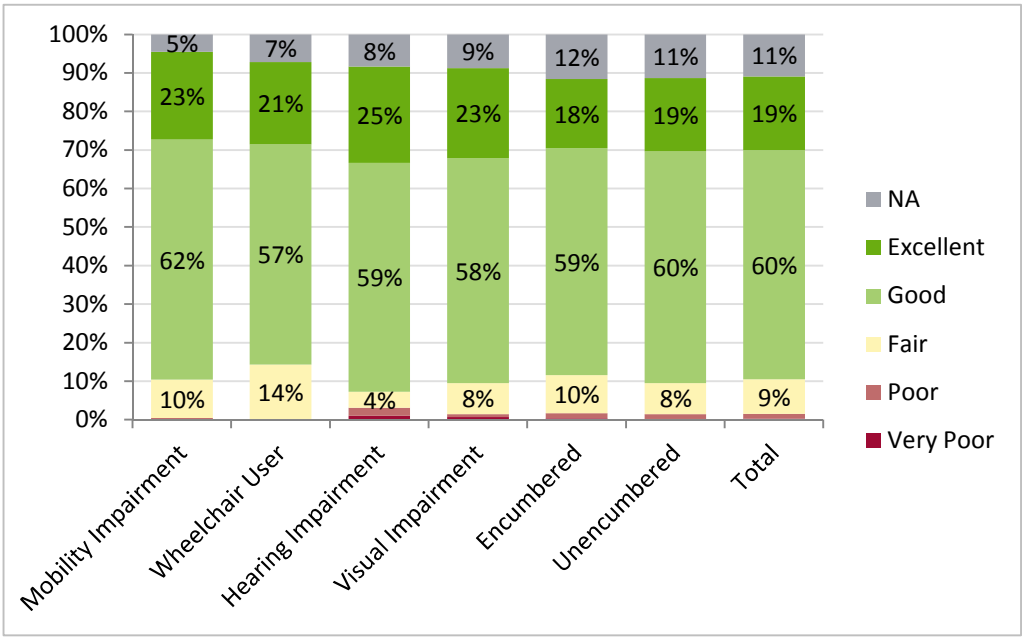
5.30 Generally, respondents at the A4A stations were positive about the availability of lifts and ramps to platforms. 23% felt that availability was excellent, with a further 57% describing it as good. Only 3% described the availability as either poor or very poor. The same was true across each of the disability groups.

Figure 5.18: Availability of Lifts and Ramps to Platforms



5.31 Similarly, most people were positive about the availability of handrails, with 19% describing it as excellent, and 60% as good. Only 1% described handrail availability as either poor or very poor.

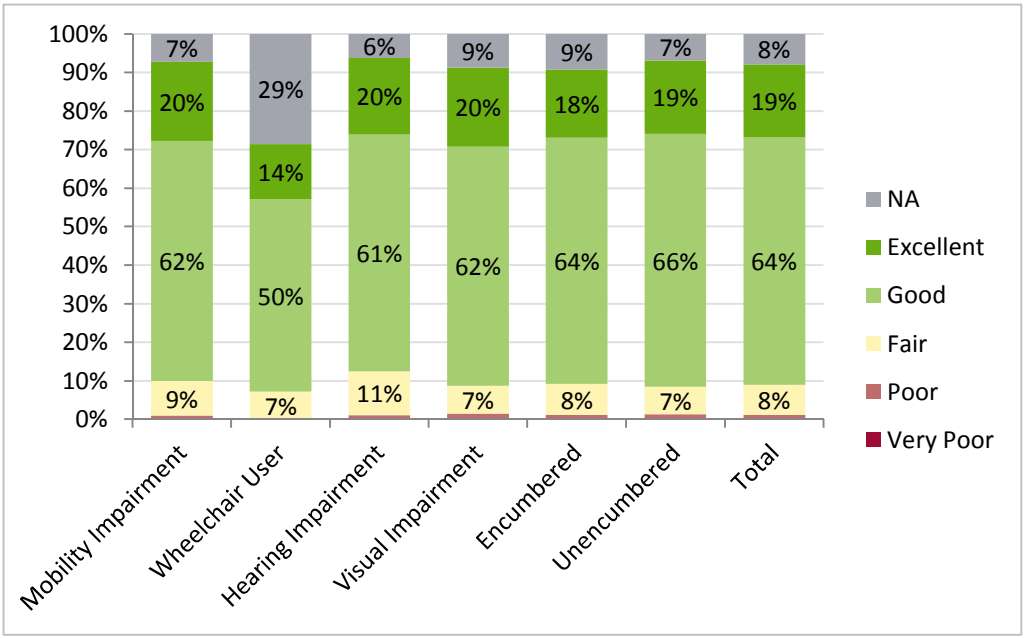
Figure 5.19: Availability of Handrails



Moving Around the Station

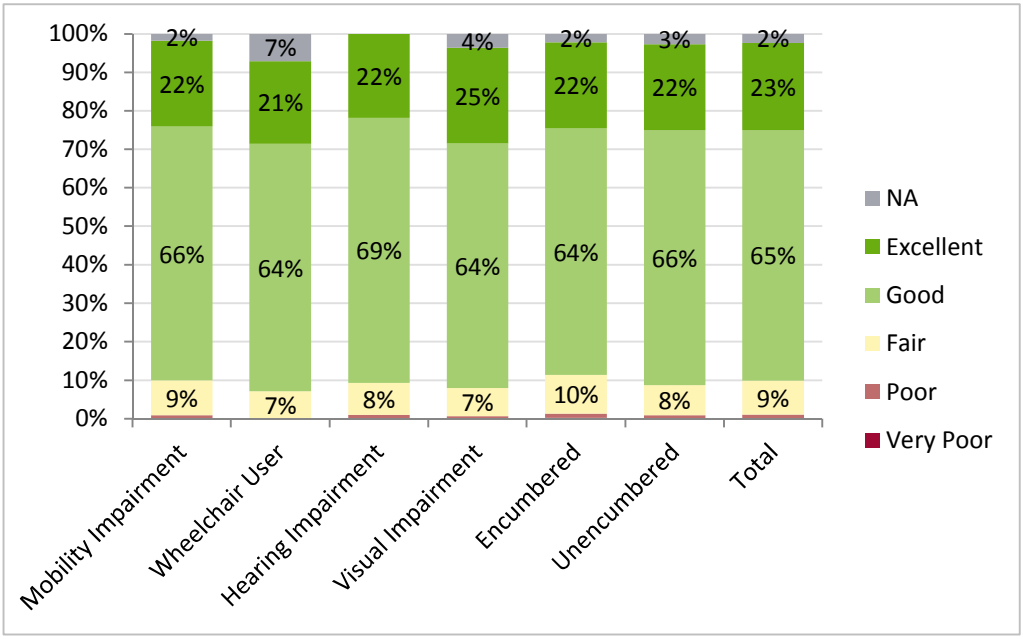
5.32 A number of aspects relating to movement in and around the station were explored. Overall, most respondents were positive about the quality of lighting at the station, with 19% describing it as 'excellent' and 64% describing it as 'good'. This was consistent across all the user groups, though more wheelchair users indicated that the question was not applicable to them.

Figure 5.20: Quality of Lighting



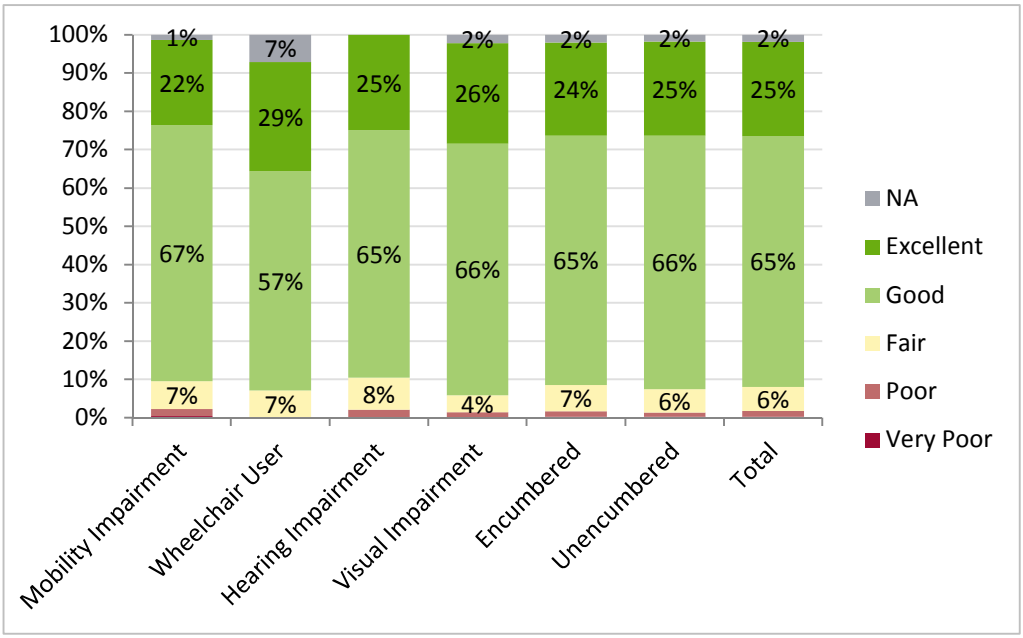
5.33 For the way-finding signage at the station, again most respondents were positive (23% describing it as 'excellent', 65% describing it as 'good'), with less than 1% saying that it was 'poor' or 'very poor'.

Figure 5.21: The Way-Finding Signage at the Station



5.34 Reflecting the positive views on way-finding signage at the station, respondents were also positive about the general ease of moving around the A4A stations. 25% described it as 'excellent' with a further 65% describing it as 'good'. Again, this was consistent across each of the user groups, with virtually no respondents describing it as 'poor' or 'very poor'.

Figure 5.22: Ease of Moving Around the Station in General

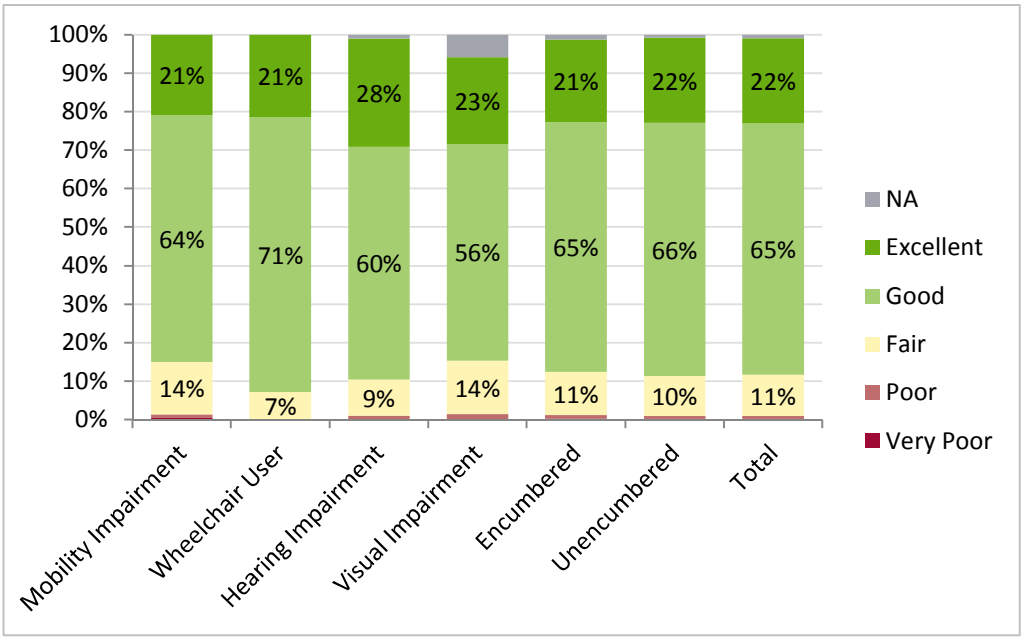


Information

5.35 As seen earlier in Figure 5.17, information is an essential facility at rail stations, particularly to those with a disability. Generally, the interviewed station users were very satisfied with the quality of information provision at the station they used. Satisfaction levels with the individual aspects of visual and audio information are presented below.

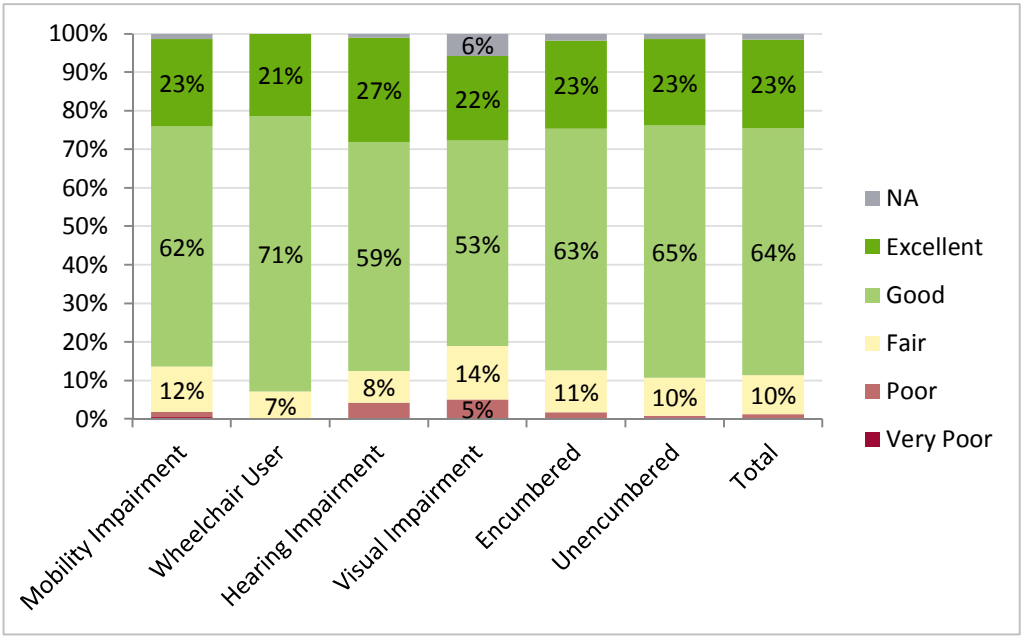
5.36 In terms of location of visual displays, respondents were very positive, with most giving it either an excellent (22%) or good (65%) rating. Only 1% described the visual display locations as either 'poor' or 'very poor'.

Figure 5.23: The Location of Visual Displays



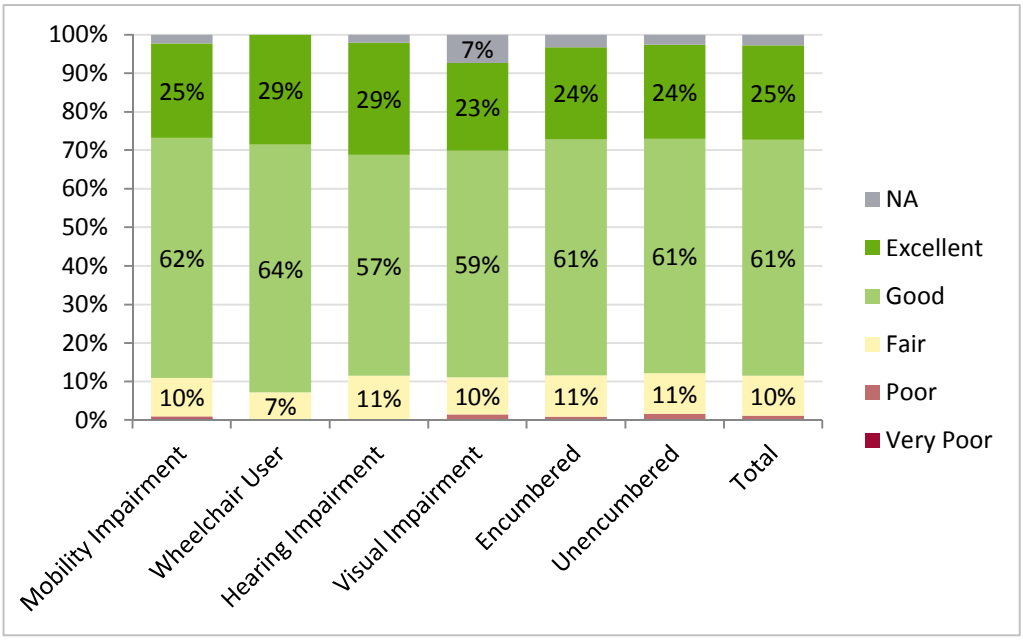
5.37 The overall results for the clarity of visual displays are consistent with the results for their location, with 23% describing it as 'excellent' and 64% describing it as 'good'. Those with a visual impairment were slightly less enthusiastic about their clarity, as a fifth of these respondents described it as either 'fair' or 'poor'.

Figure 5.24: The Clarity of Visual Displays



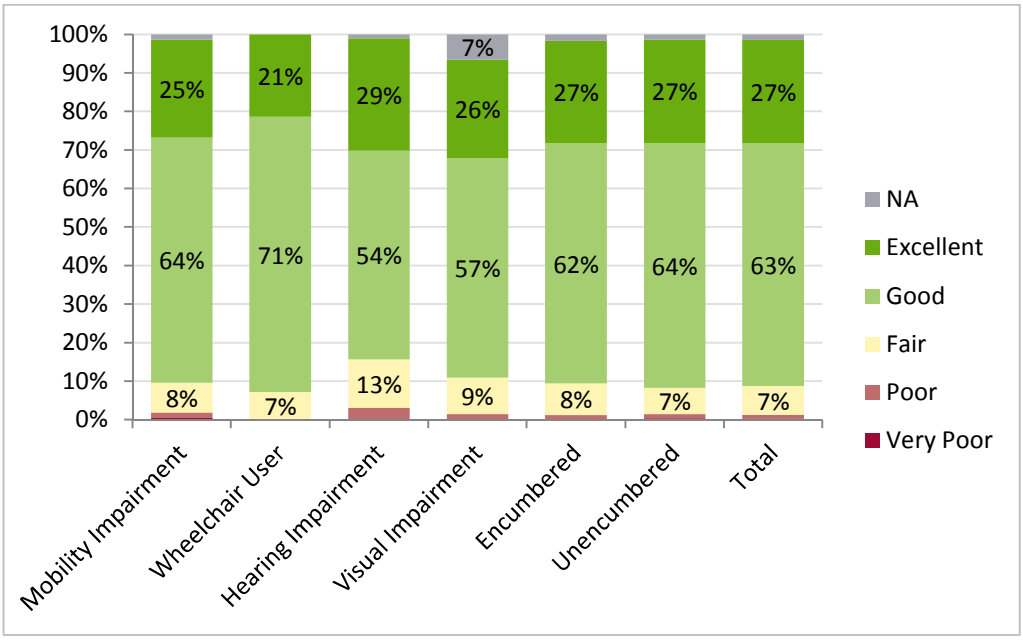
5.38 Again, respondents were positive about the accuracy of information provided at stations, with very few 'poor' ratings, as shown in the following figure.

Figure 5.25: The Accuracy of Information Displayed



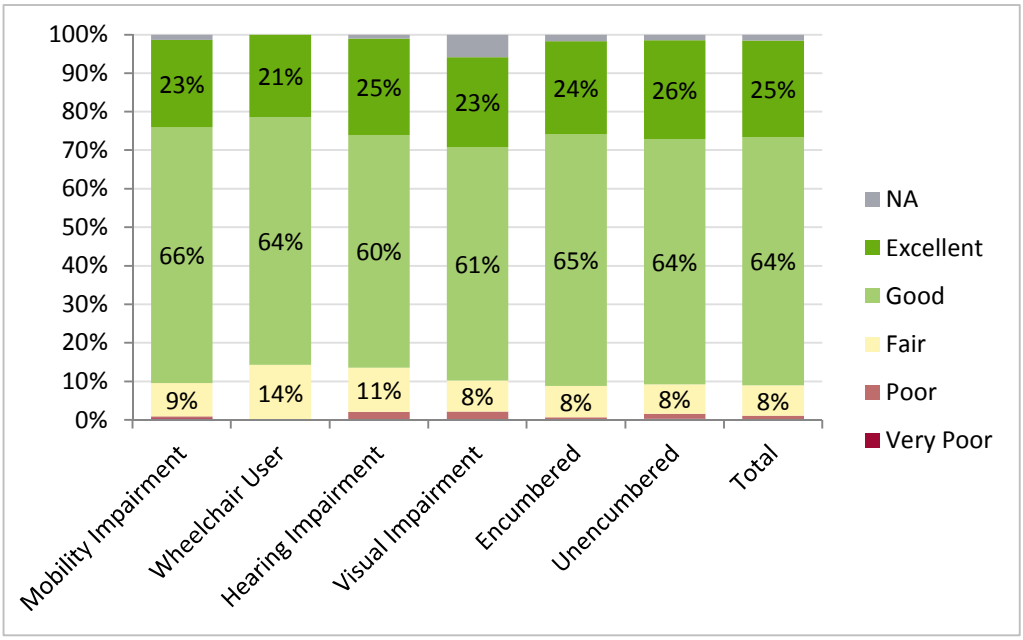
5.39 The ratings for providing all the information needed were generally positive, with only 2% saying that this was 'poor'. Those that did give a 'poor' rating were most likely to be those with a mobility or hearing impairment.

Figure 5.26: Providing the Information I Need



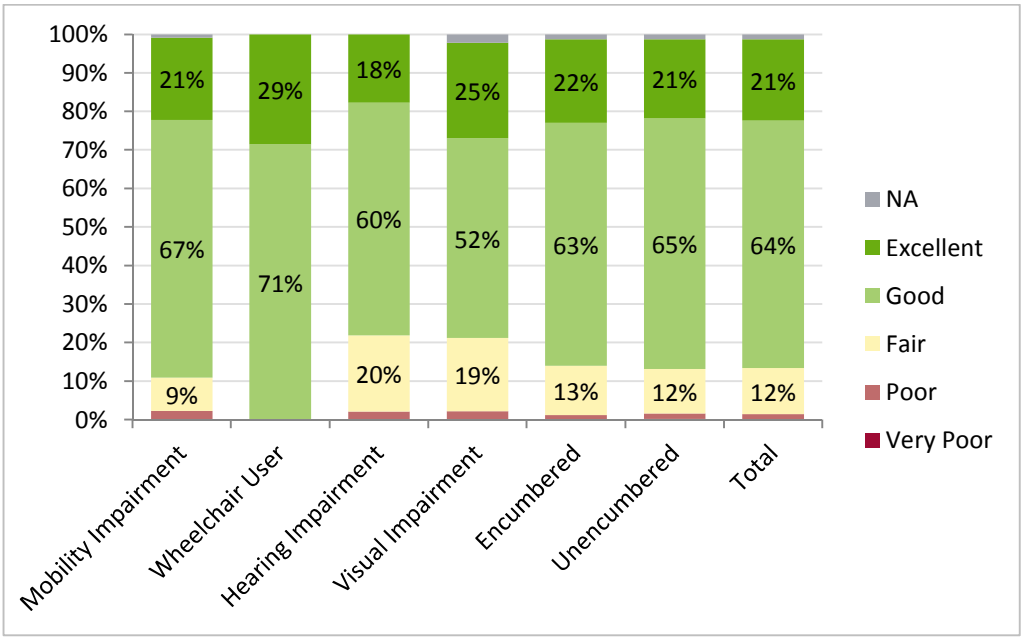
5.40 The ratings for visual information overall reflect the individual ratings, with 89% of A4A station users rating as either 'good' or 'excellent'.

Figure 5.27: Essential Visual Journey Information Overall



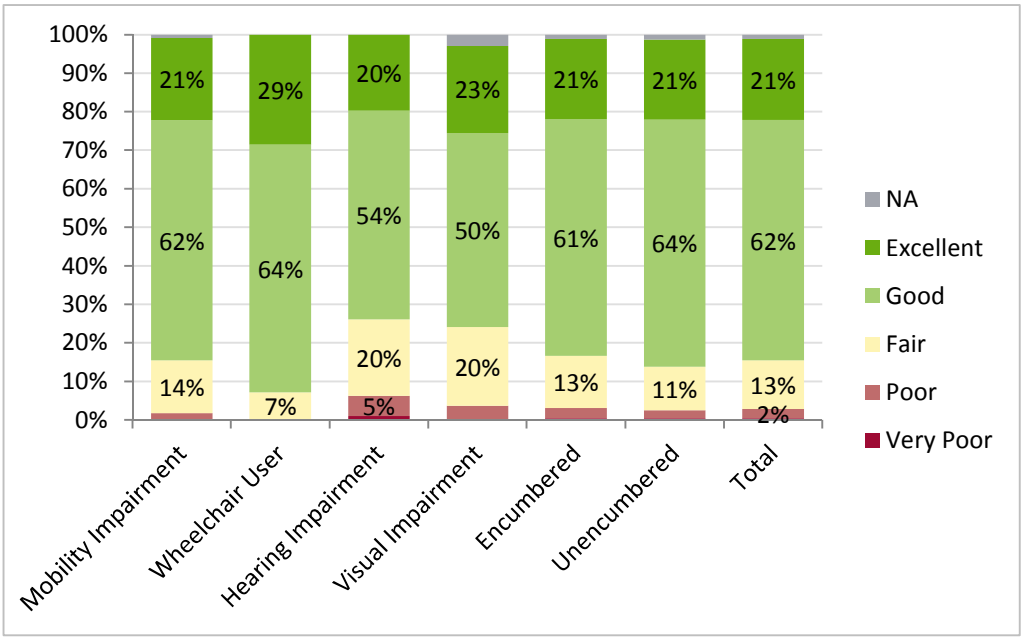
5.41 Consistent with the ratings of visual information, respondents were positive about the different elements of audio information at the six A4A stations. In terms of the frequency of announcements, 85% rated them as either 'good' or 'excellent'.

Figure 5.28: The Frequency of Announcements



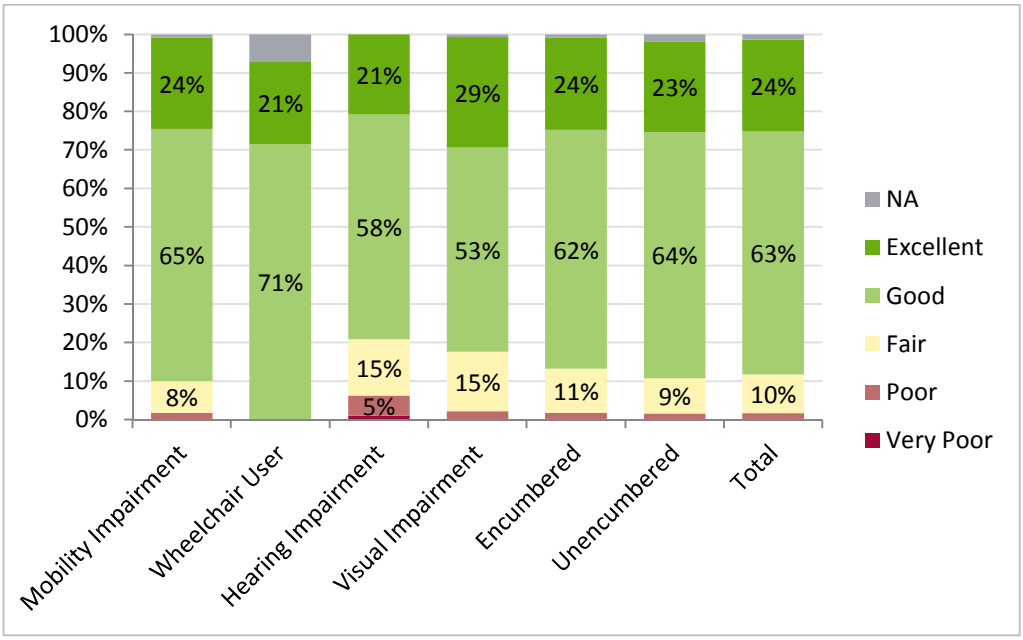
5.42 Similarly, the clarity of announcements was also rated highly by respondents, with 83% describing it as 'good' or 'excellent', and only 2% describing it as 'poor'. Those with a hearing impediment were more likely to describe it as poor.

Figure 5.29: The Clarity of Announcements



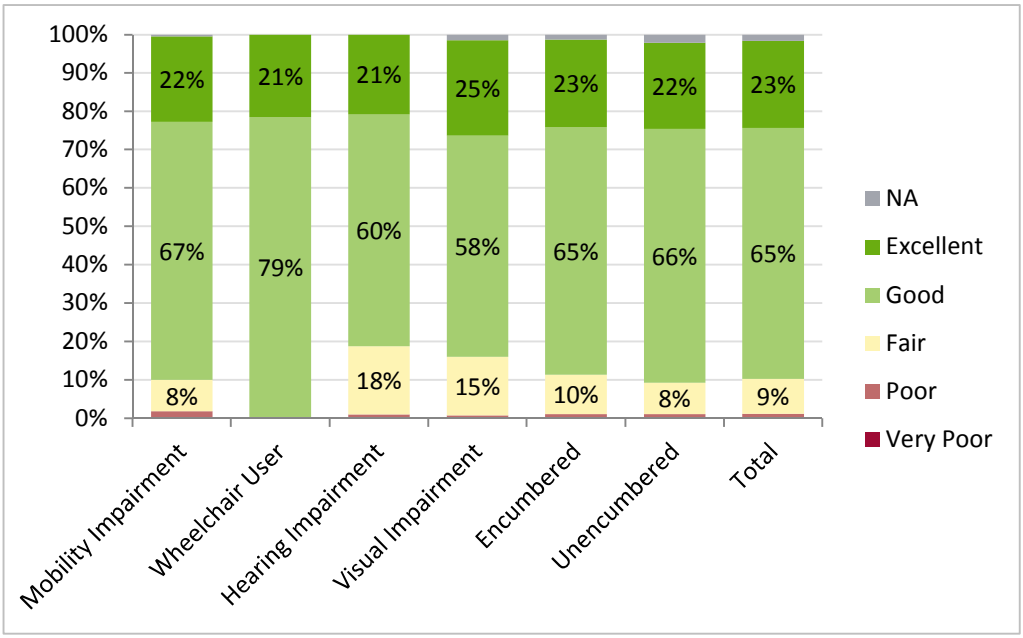
5.43 The picture for providing all the audio information needed was similar, with the vast majority (87%) being satisfied, compared to just 1% that were unsatisfied. Again, those with a hearing impediment were more likely to be unsatisfied.

Figure 5.30: Providing Audio Information that I Need



1.2 The overall rating for audio journey information was 88% 'good' or 'excellent', reflecting the level of satisfaction with each of the individual elements.

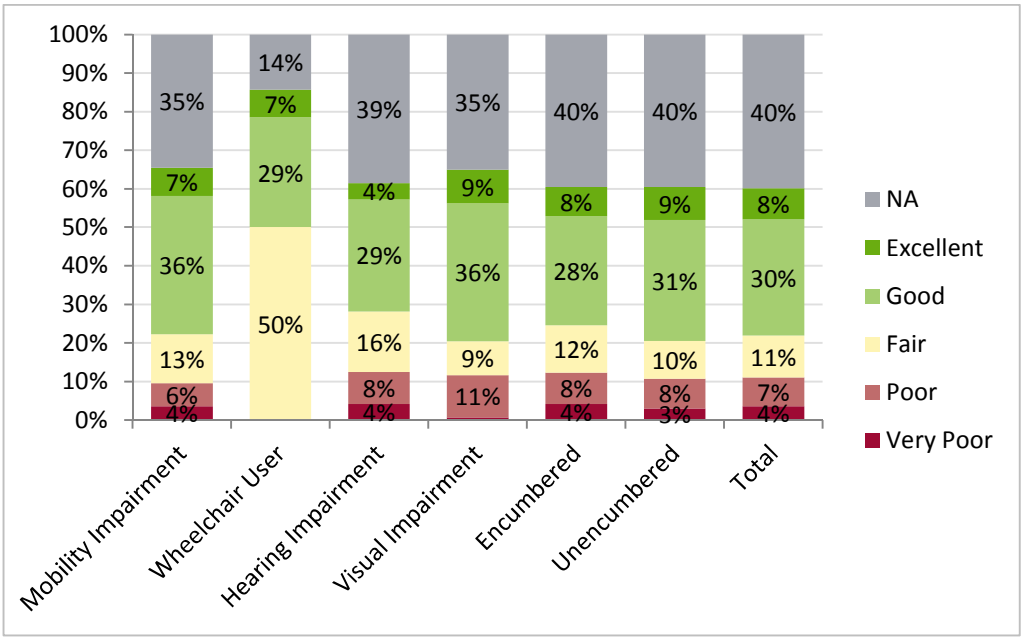
Figure 5.31: Essential Audio Journey Information Overall



Comfort Facilities

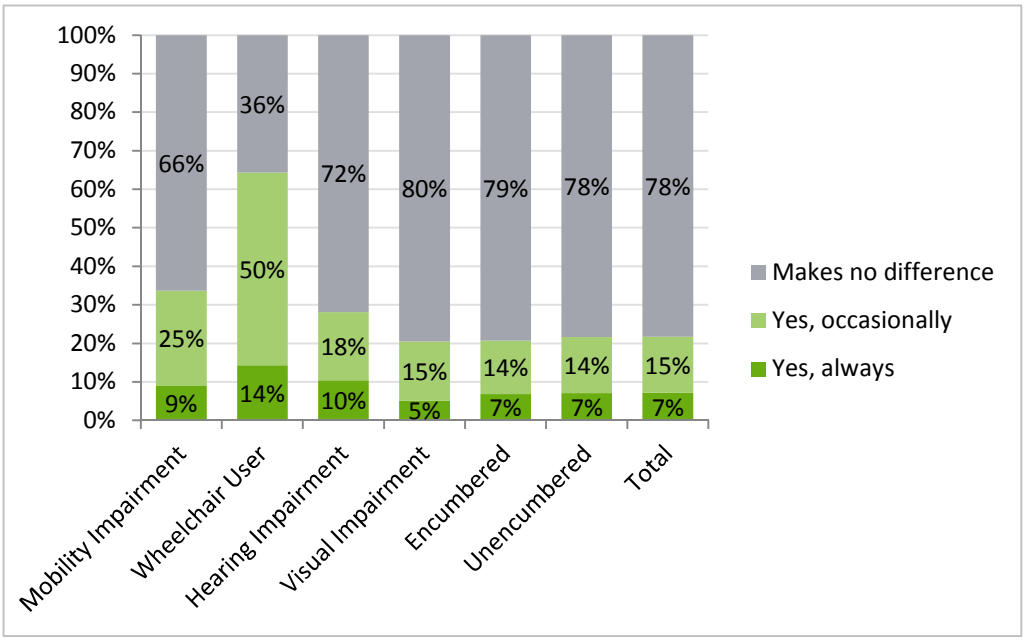
5.44 Compared to the accessibility and information elements, the opinions of respondents on the accessible toilet facilities were less positive, though this still only equates to 11% rating it as either 'poor' or 'very poor' (though 40% indicated that this question was not applicable to them).

Figure 5.32: The Accessible Toilet Facilities



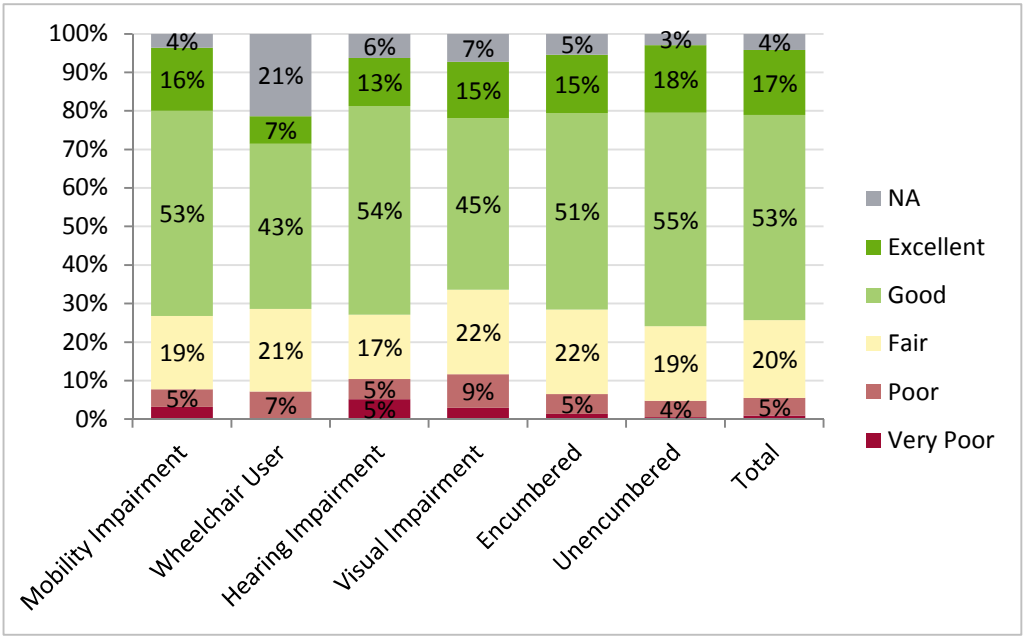
5.45 The provision of an accessible toilet does have an impact on the choice of station to use amongst passengers, in particular amongst those using wheelchairs or with a mobility impairment. Overall, 22% said that it has some bearing on their decision of which station to use, with 7% saying that it is always has some influence in the choice.

Figure 5.33: In general when considering which station to use, would you travel further in order to start or end your journey at a station which has an accessible toilet?



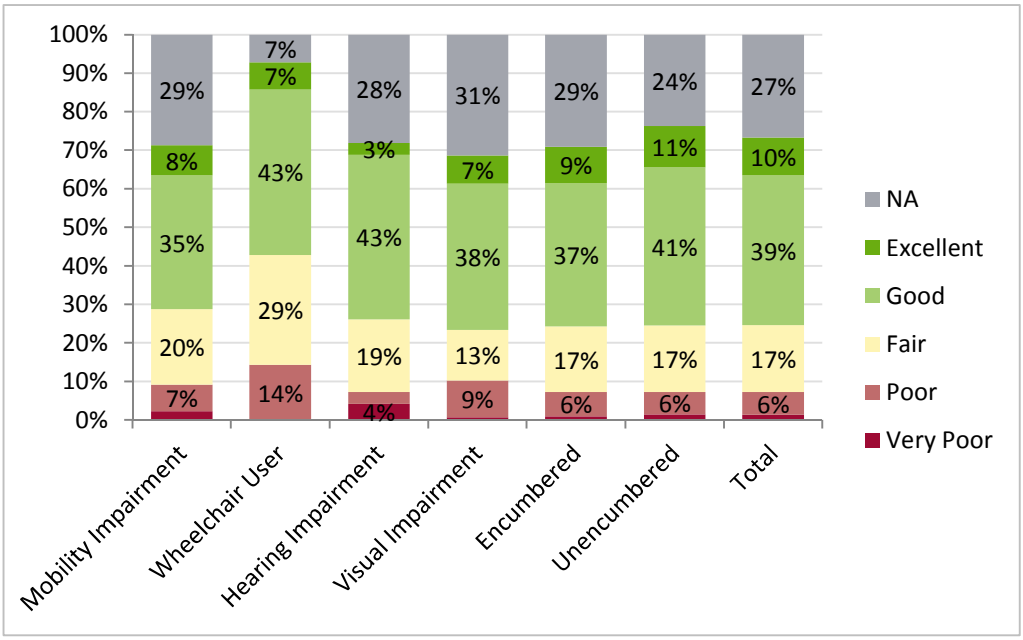
5.46 The quality of waiting and retail facilities are not directly impacted by the A4A programme, but poor facilities could reduce the impact of the investment by making a station generally less attractive. Overall, respondents were satisfied with the waiting facilities, though they were less positive compared to other aspects: 70% said that the waiting facilities were either 'good' or 'excellent'. The level of satisfaction was slightly lower amongst those with a visual impairment.

Figure 5.34: The Waiting Facilities



5.47 The situation regarding retail and catering facilities is similar, with just under half of all respondents rating them as either good or excellent.

Figure 5.35: The Retail and Catering Facilities

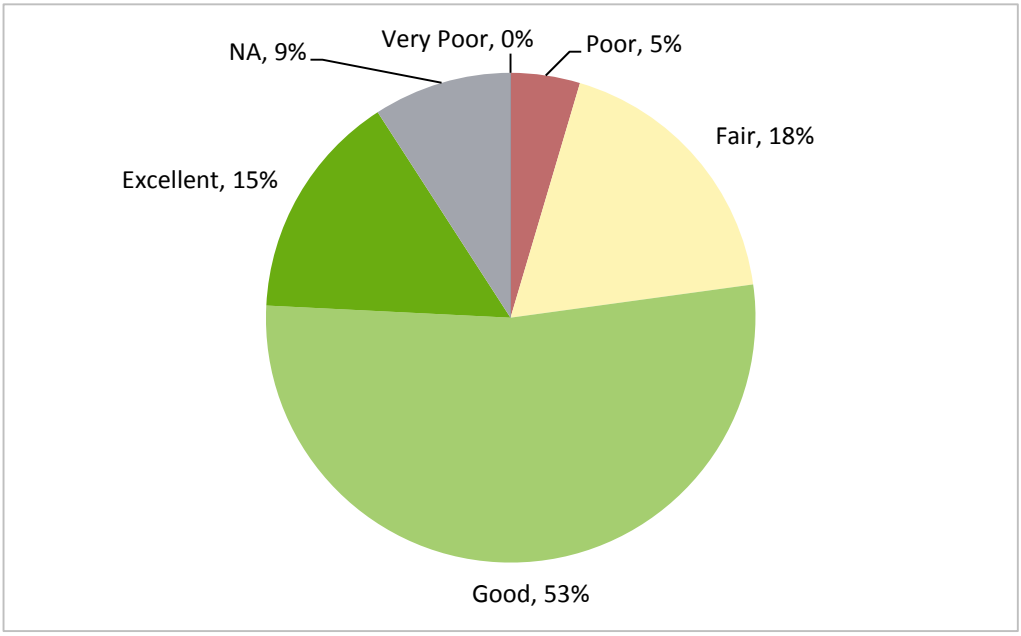


Provision for Passengers with Different Disabilities

5.48 This section considers the overall provision at the stations for passengers with different disabilities, assessing suitability for those with difficulties walking seeing, hearing and carrying luggage.

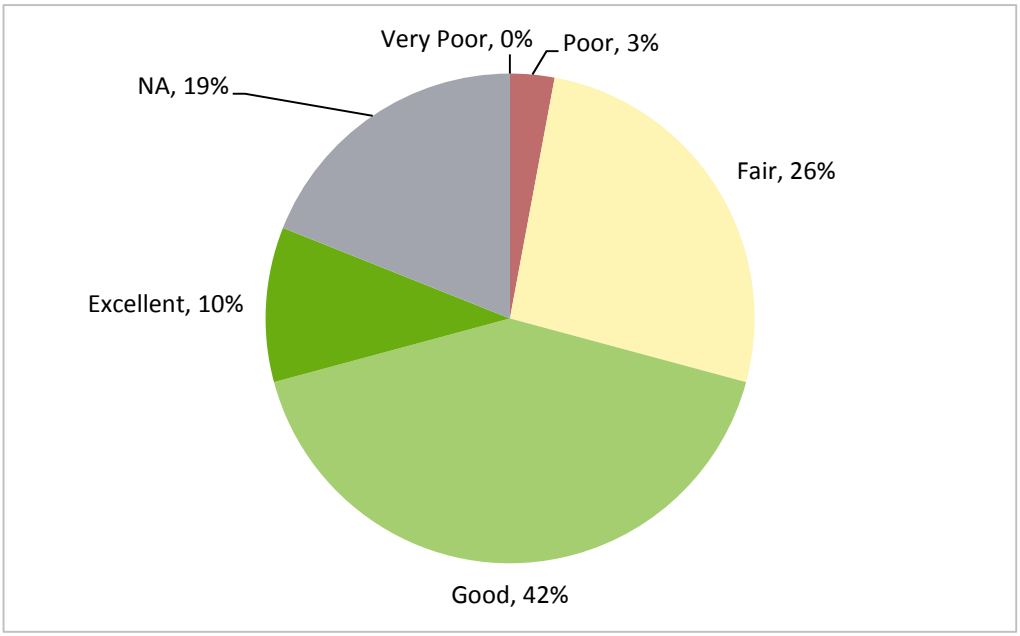
5.49 Those with a mobility impairment were generally satisfied with the facilities provided for passengers that have difficulty walking – 68% described them as either 'good' or 'excellent', with only 5% describing them as 'poor'.

Figure 5.36: Facilities to Help People with Difficulties Walking



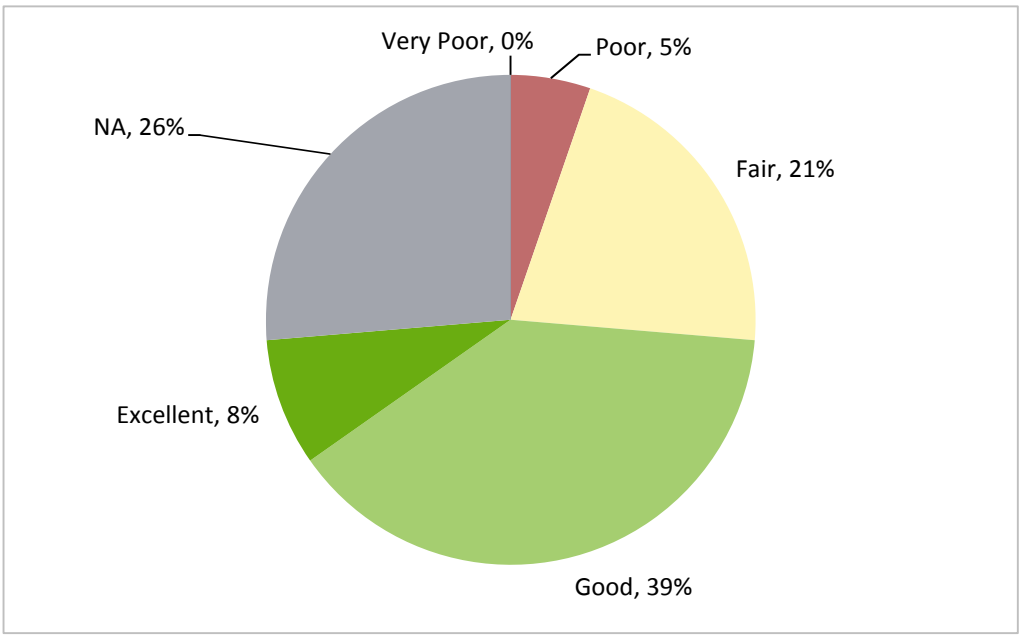
5.50 A notable proportion (19%) of respondents with a visual impairment said that the question asking for their satisfaction with facilities for people with difficulties seeing was not applicable. Of the remainder, just under 70% described them as either 'good' or 'excellent' with only 3% describing them as 'poor'.

Figure 5.37: Facilities to Help People with Difficulties Seeing



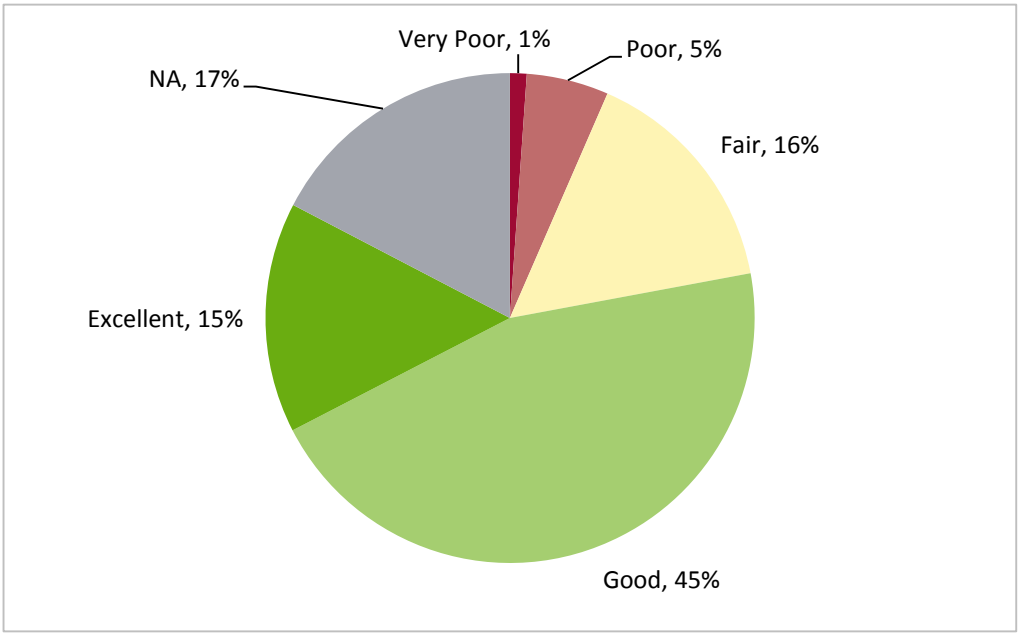
5.51 Similarly, a significant proportion (26%) of those with a hearing impediment said that the question of satisfaction with facilities for people with hearing impediments did not apply to them. Of the remainder, just under two-thirds rated the facilities as either 'good' or 'excellent'. On the other hand, 5% rated the facilities as 'poor', but none as 'very poor'.

Figure 5.38: Facilities to Help People with Hearing Impairments



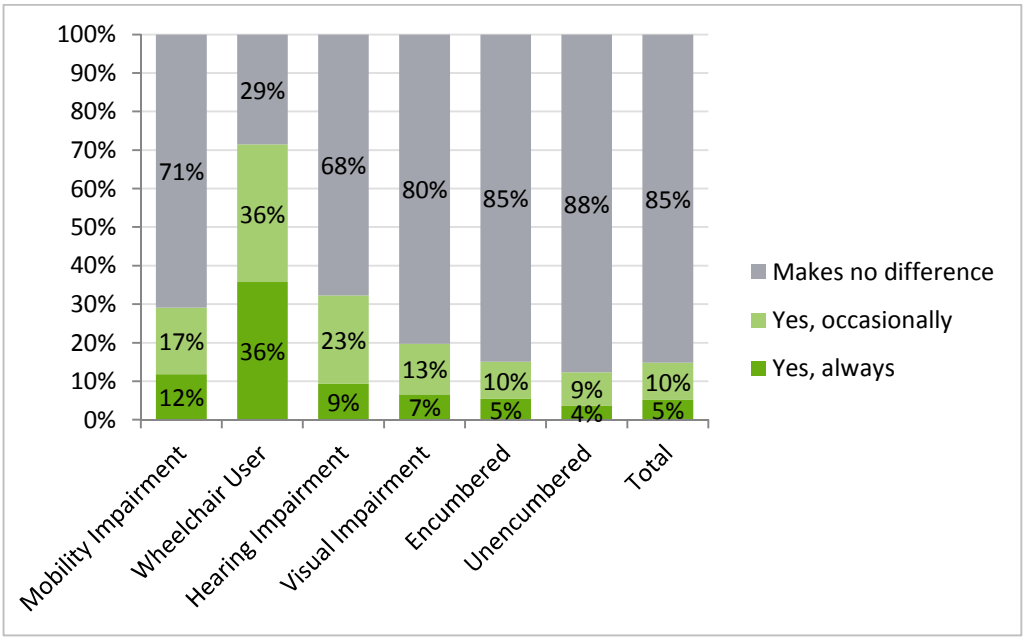
5.52 Overall, those carrying bulky luggage or equipment were happy with the facilities provided for them, as shown in the following figure. However, 6% did rate the facilities as 'poor' or 'very poor'. A significant proportion felt the question was not applicable to them.

Figure 5.39: Facilities to Help People with Difficulties Carrying Bulky Luggage or Equipment



5.53 The impact of provision of facilities for disabled people on station choice is notable amongst some disability groups, particularly for wheelchair users, with the majority saying that they would either always or occasionally travel further to a station which is easier for disabled people to use. Just under a third of mobility impaired and hearing impaired passengers felt the same.

Figure 5.40: When considering which station to use, would you travel further in order to start or end your journey at a station that is easy to use for people with disabilities?



Staff

5.54 The ratings of staff, in terms of both availability to help and their helpfulness, show that generally passengers are very satisfied with both aspects with 84% of passengers saying that the availability of station staff to provide information and assistance was good or excellent, and 88% saying the same about the helpfulness of station staff.

Figure 5.41: Availability of Station Staff to Provide Information and Assistance

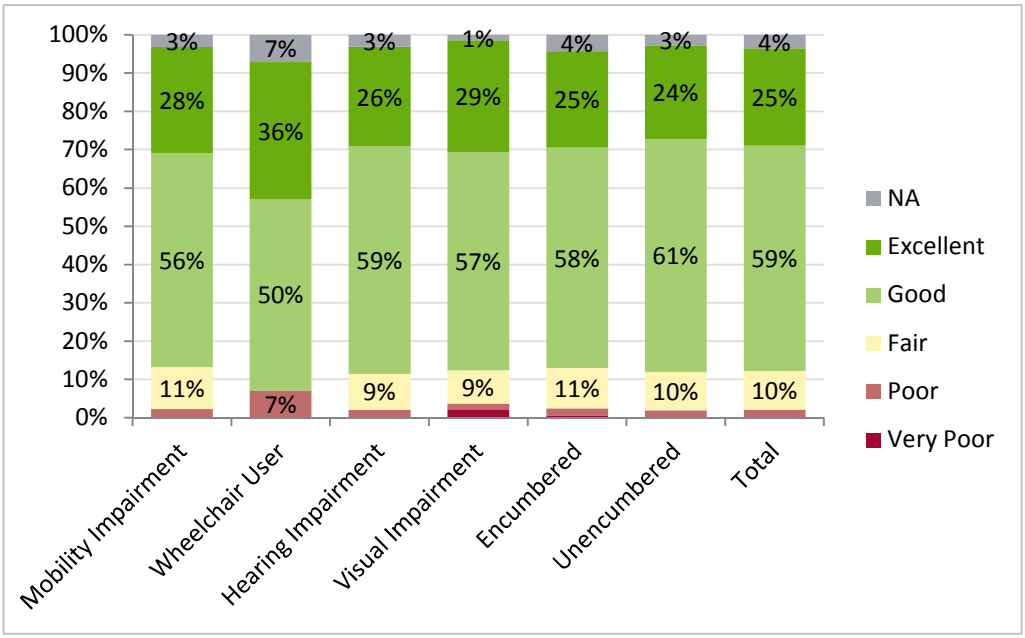
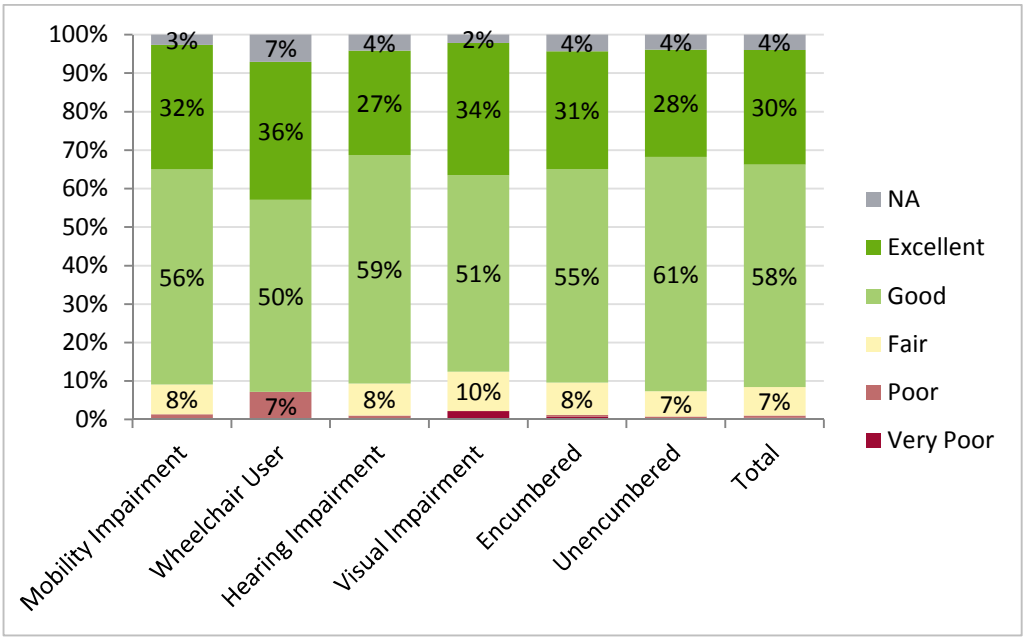


Figure 5.42: The Helpfulness of Station Staff

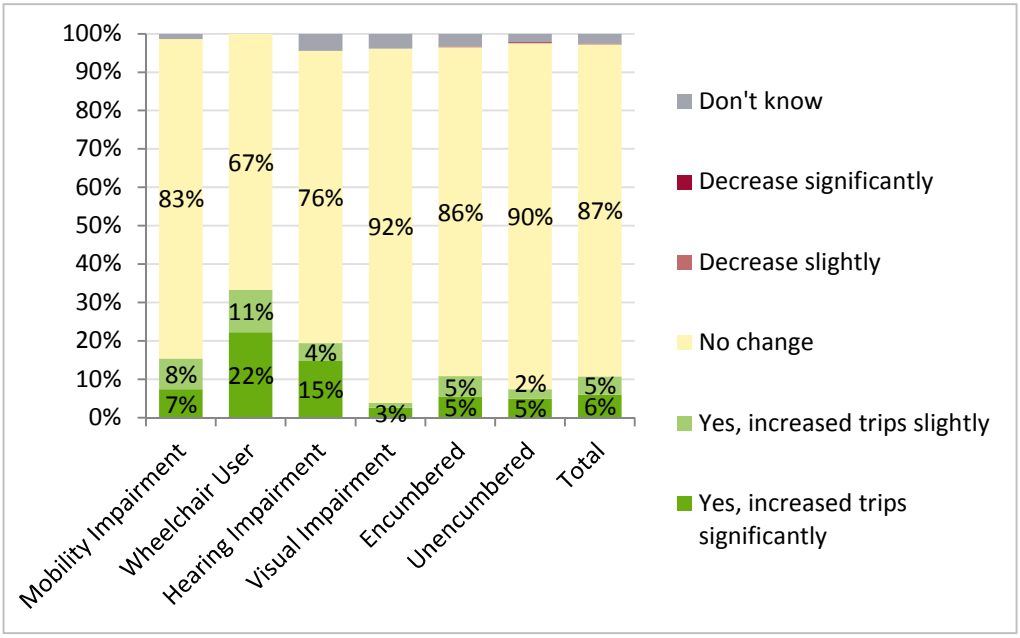


Impact of Improvements

5.55 This section examines the impact of the A4A improvements as identified by the station users. Respondents who said they were aware of improvements were asked if the improvements had affected their use of the station and 11% of all station users said that they had increased the number of trips they made from that station, with 6% having increased the number of trips significantly.

5.56 This figure was higher amongst some disabled groups, with a third of wheelchair users, 19% of hearing impaired passengers, and 15% mobility impaired passengers having increased their use of the station.

Figure 5.43: Have any of these improvements affected your use of this station?

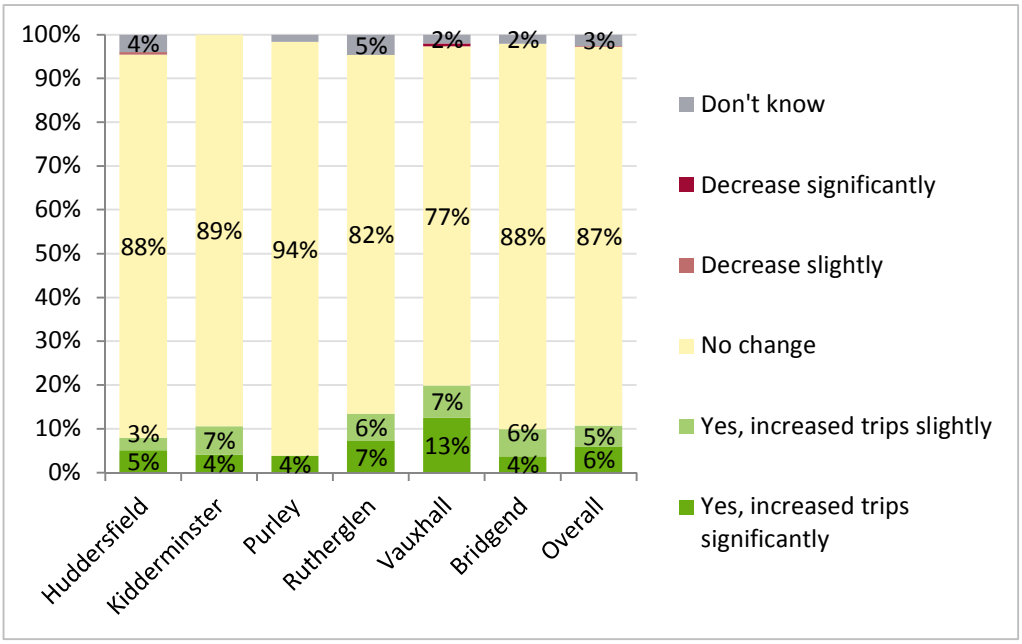


Base: Those aware of improvements at the station

5.57 The stations that saw a greater proportion of respondents making additional trips were Vauxhall (20% said they had increased the number of trips they made from the station) and Rutherglen (13% said they had increased the number of trips they made from the station). Purley and Huddersfield had the lowest levels of increased trips of the six stations.

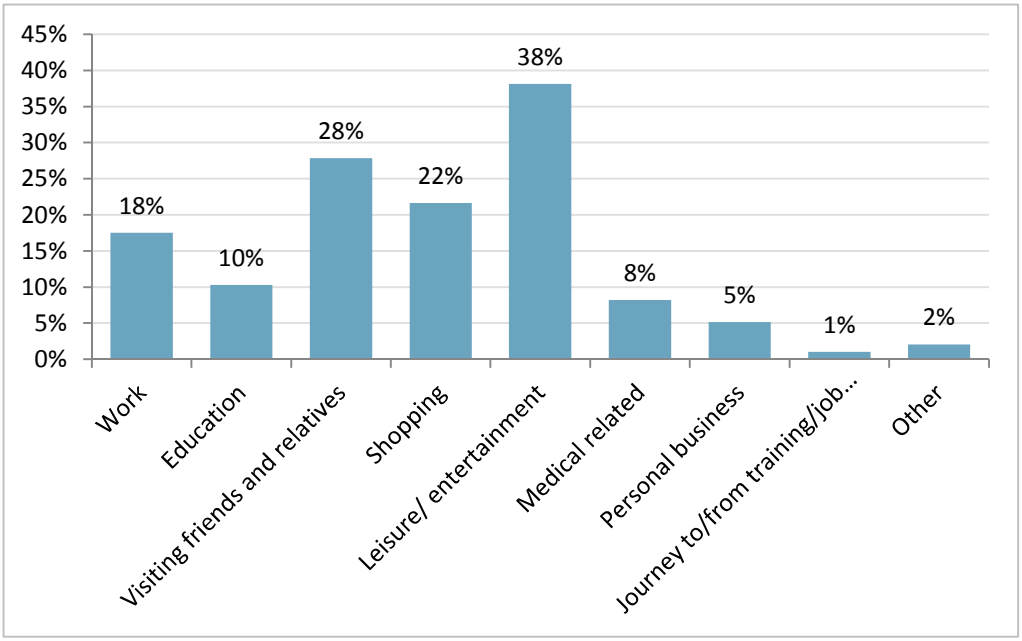
5.58 The type of trip most likely to have been encouraged by the A4A improvements is a leisure/entertainment trip, or a trip to visit friends and relatives. There were also a number of additional work and shopping trips made.

Figure 5.44: Have any of these improvements affected your use of this station – by A4A station



Base: Those aware of improvements at the station

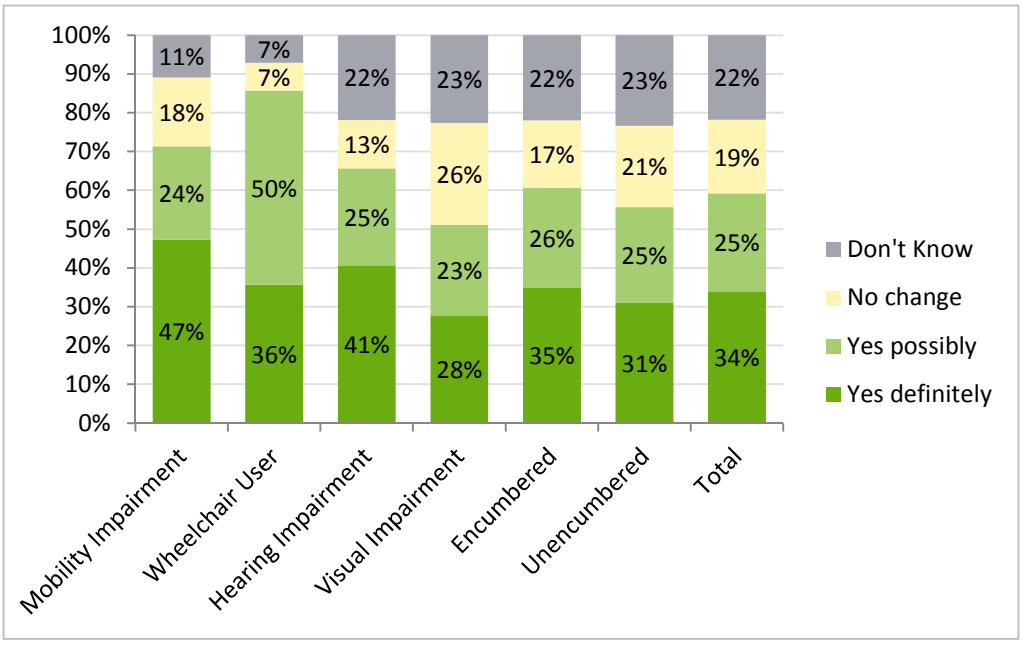
Figure 5.45: What purposes have you made additional trips?



Base: Those increasing their use of the station following the improvements

5.59 In general, station users felt that the improvements at the A4A stations would encourage people with limited mobility or a disability to use the station more, with 59% saying that the improvements would definitely or possibly encourage others with a disability to use the station more. This figure was higher amongst wheelchair users (86%), the mobility impaired (71%) and the hearing impaired (66%).

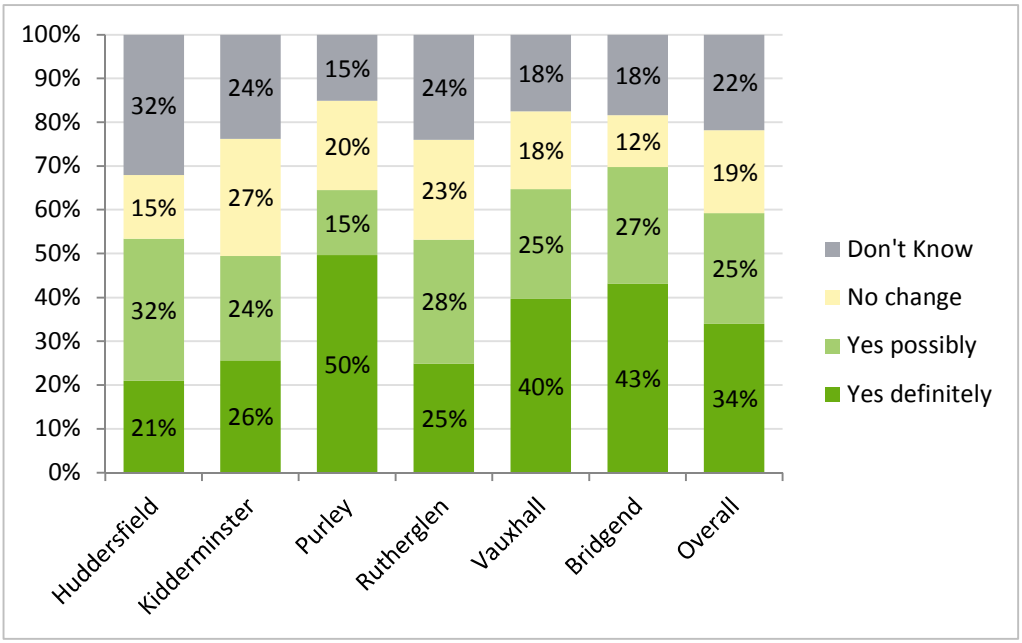
Figure 5.46: Do you think these improvements have encouraged other people with limited mobility or a disability to use this station more?



Base: Those aware of improvements at the station

5.60 Passengers at Purley, Vauxhall and Bridgend were more likely to take the view that the improvements to the station would have encouraged other people with limited mobility or a disability to use the station more. In particular, half of passengers at Purley said that it would definitely encourage others with limited mobility to use the station more. This is opposed to the relatively low number of people at Purley that stated that the improvements had led to themselves using the station more.

Figure 5.47: Do you think these improvements have encouraged other people with limited mobility or a disability to use this station more? – by station



Base: Those aware of improvements at the station

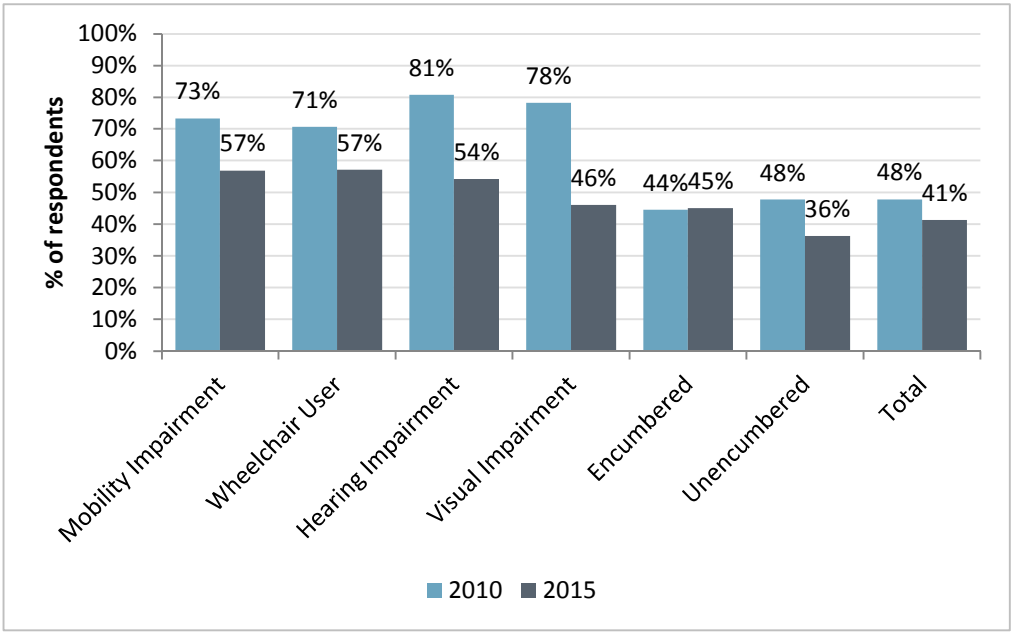
Comparison with 2010 Study Results

5.61 This section provides a short comparison between the findings in the 2015 surveys and the similar survey undertaken in 2010[4]. Because the questionnaire was kept largely the same, this comparison is possible.

5.62 Generally awareness of the improvements made to the surveyed stations was lower in 2015 compared with the previous surveys undertaken in 2010. In 2015, 41% of all respondents said that they were aware of the improvements made at the stations, compared to 48% in 2010. There was a notable difference for each of the disability groups, in particular for those with a visual impairment (46% awareness in 2015 compared to 78% in 2010) and those with a hearing impairment (54% in 2015 compared to 81% in 2010). The only group that saw a slight increase was the encumbered group, which had 45% awareness in 2015 compared to 44% in 2010. The difference between each of the groups is shown in the following figure.

5.63 A potential reason for the reduction in awareness is the longer time passed since the improvements were put in place for some of the stations in the 2015 study. While this allows for longer bed-in, it also means there might be higher proportions of users having started to use the station after the improvements were put in place.

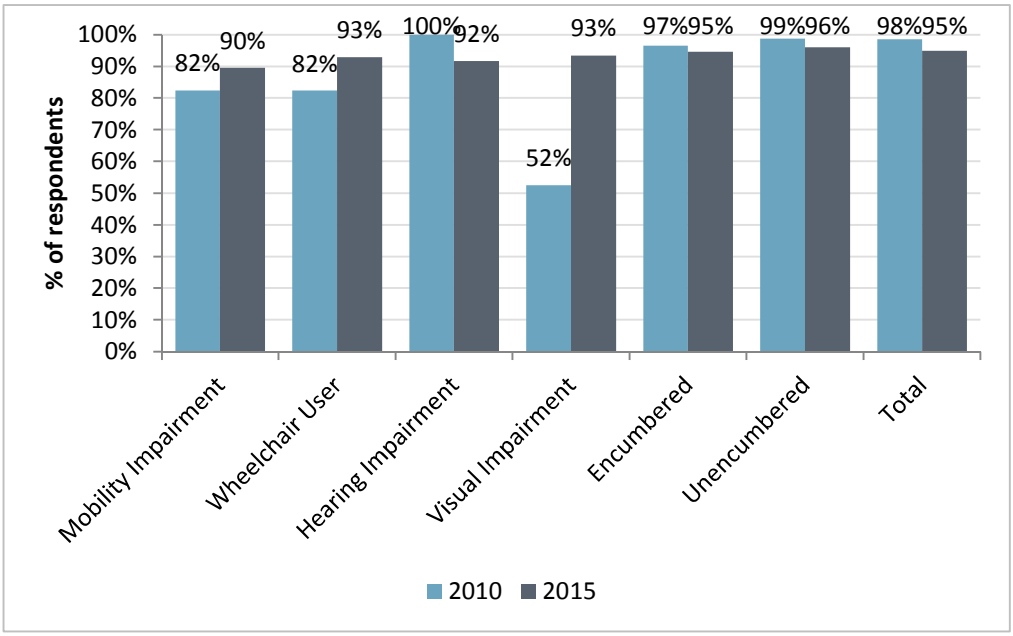
Figure 5.48: Respondents who were Aware of Station Improvements – 2010 and 2015



5.64 The vast majority of respondents said that getting from the station entrance to the platforms was straightforward in both 2010 and 2015. Overall, 95% of respondents in 2015 said that it was either 'quite easy' or 'very easy' to get from the entrance to the platforms, compared with 98% in 2010 (the difference was not significant). One notable improvement was amongst the visually impaired group – 52% in 2010 said it was easy to get from the station entrance to the platform, which grew to 93% in 2015.

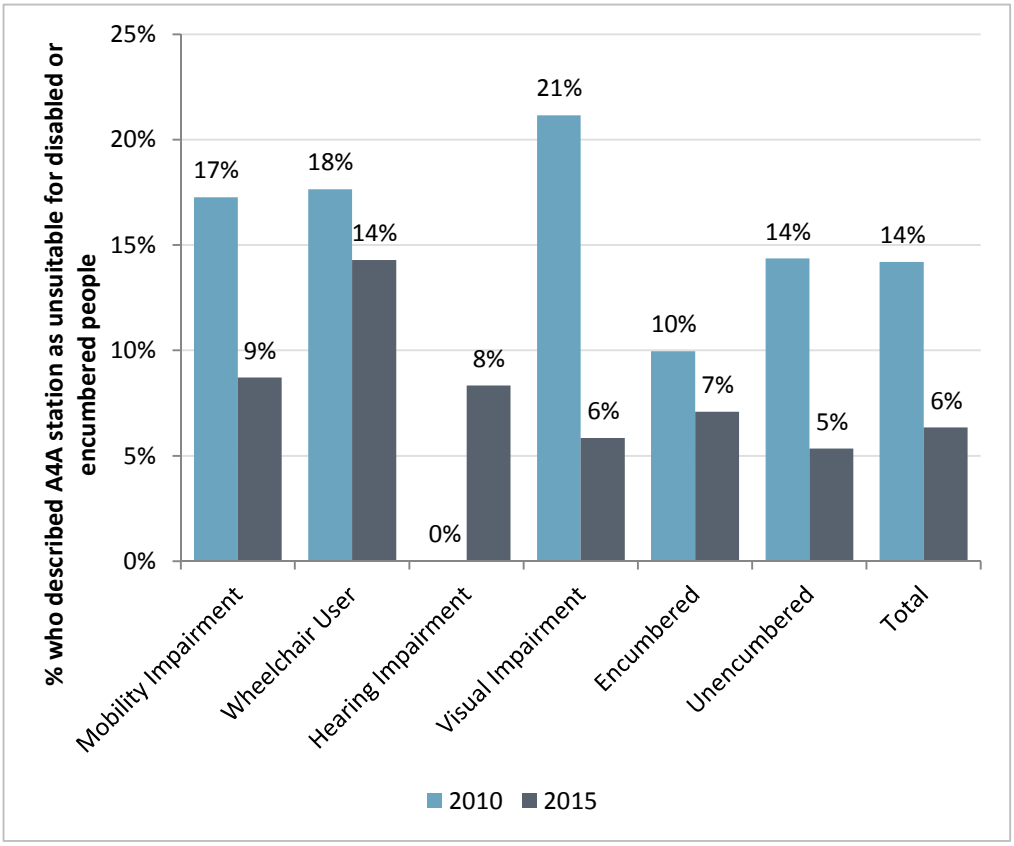
[4] Access for All – Benefit Research, August 2010, Steer Davies Gleave for Department for Transport

Figure 5.49: Respondents who Found it Easy to Get From the Station Entrance to the Platform – 2010 and 2015



5.65 The vast majority of respondents in both 2010 and 2015 said that the Access for All stations were suitable for disabled people and those travelling with bulky items. Only 6% of the respondents in 2015 said that the surveyed stations were unsuitable – this was an improvement on 2010, when 14% said that the stations were unsuitable, as shown in the following figure.

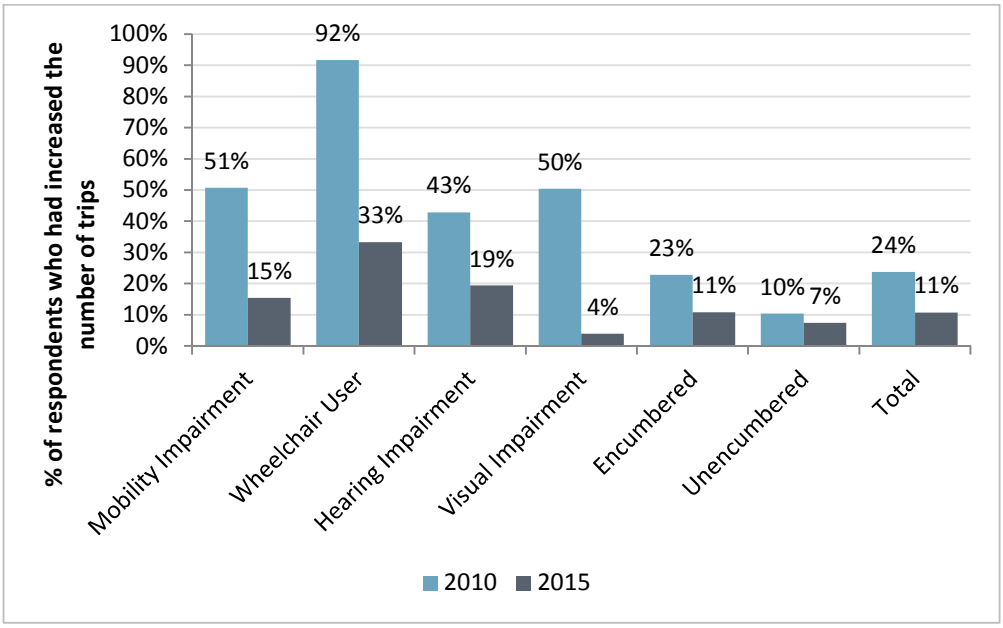
Figure 5.50: Respondents who Said Stations were Unsuitable for Disabled People or People Travelling with Bulky Items – 2010 and 2015



5.66 Though more people felt that stations were suitable in 2015 compared to 2010, the proportion of respondents that had increased the number of trips they had made from the Access for All stations fell notably, from 24% in 2010 to 11% in 2015. This drop was consistent across each of the user groups, as shown below.

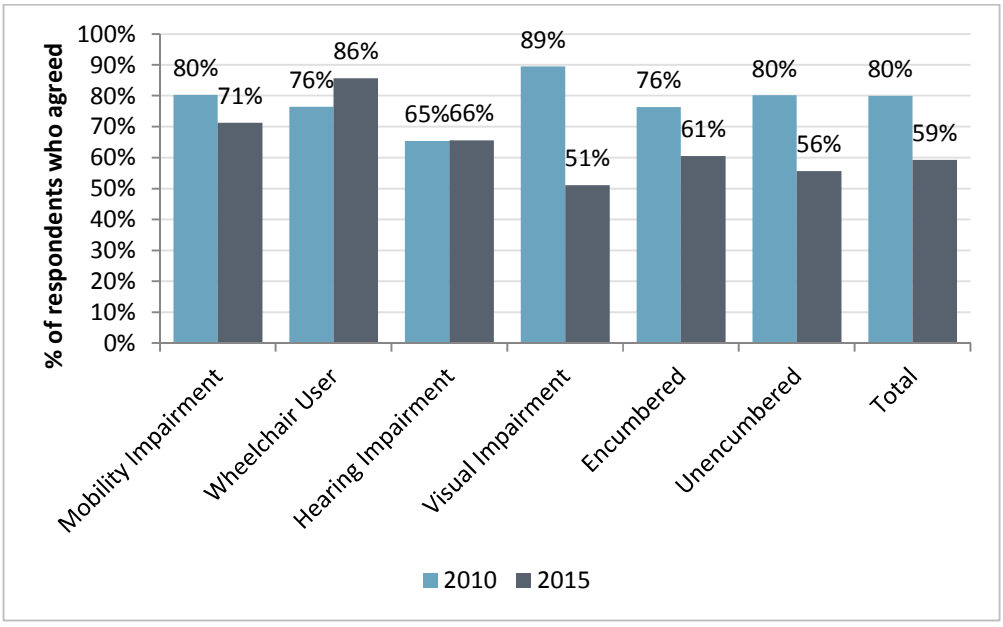
5.67 This is in line with the similar drop in awareness between the two studies, indicating the importance of informing both existing and potential station users about the improvements being made.

Figure 5.51: Respondents Increasing the Number of Rail Trips – 2010 and 2015



5.68 Furthermore, far fewer respondents said that they felt that the improvements made to the station have encouraged other people with limited mobility or a disability to increase their use. In 2010, 80% said the improvements would encourage greater use from disabled users, compared to only 59% in 2015.

Figure 5.52: Likely to Encourage People to Make More Trips – 2010 and 2015



6 Outline Economic Appraisal

Introduction

6.1 An economic appraisal of the six selected Access for All stations has been undertaken and is presented below.

6.2 This appraisal is for the programme of Access for All improvements as a whole, as the benefit forecasts are based on estimated changes in demand, which are attributable to the whole programme (and the overall improvement in access offered) rather than individual scheme elements (e.g. lifts).

6.3 The appraisal has been conducted in line with the principles of DfT appraisal guidance. The main 'innovation' within the appraisal is the use of a 'reverse-elasticity' approach to estimate user benefits. This approach is summarised later in this chapter.

Economic Appraisal – Overview

6.4 The economic appraisal of the Access for All schemes is presented both for combined station improvements (i.e. across the six stations) and on a station by station basis.

Overview of Economic Appraisal Model

6.5 A spreadsheet based model has been developed based on Department for Transport WebTAG guidance[5]. The model therefore has 'standard' elements (e.g. economic appraisal parameters and economic performance metrics) that are common to all economic appraisals and fully consistent with current WebTAG guidance, as well as 'scheme specific' elements that will vary on a case by case basis (e.g. scheme cost, demand, benefits, opening date etc.).

6.6 This model is based on the one developed for the 2010 study[6], with amendments to reflect updated WebTAG guidance and standard values, as well as station specific data.

6.7 The appraisal has been constructed in a manner consistent with the Transport Economic Efficiency (TEE) Table, and is based on the following assumptions:

- Scheme capital and renewal costs (the Long Term Charge) are assumed to be funded by addition to the Regulatory Asset Base;
- Scheme operating & maintenance costs are assumed to be borne by the TOCs. Operation and Maintenance costs, along with scheme revenues (which also accrue to the TOCs), are categorised within the TEE as 'provider impacts', and are represented in the 'benefits' side of the cost-benefit equation; and

[5] https://www.gov.uk/transport-analysis-guidance-webtag

[6] Access for All – Benefit Research, August 2010, Steer Davies Gleave for Department for Transport

- Taxation impacts of the scheme on Central Government are included as a dis-benefit. This covers both the impact on tax revenue from higher expenditure on non-VAT rated rail fares and from reduced vehicle duties as a result of mode shift from car.

Benefits of Station Accessibility Improvements

6.8 There are a number of potential economic benefits from improved accessibility at stations. In broad terms these accrue to three sets of people; existing station users who gain from an improvement in the accessibility and general quality of provision; new users who are attracted to use the station due to these improvements and who gain a benefit from doing so; and non-users who are indirectly affected as a result of 'externality' impacts stemming from a change in transport demand and network costs. These potential benefits are set out in Table 6.1.

Table 6.1: Potential Economic Benefits from Station Accessibility Improvements

User group	Description	Example impacts of accessibility schemes
Existing Trips / Users	People who already use the stations.	Benefits from improved accessibility – due to obstacle free access, better signage and information, trained staff etc.
New Trips / Users	New station and rail users.	Benefits from improved accessibility – due to obstacle free access, better signage and information, trained staff etc.
Non-Users	People who do not change their behaviour as a result of the scheme, but who are affected in some way as additional people using rail have 'second order' impacts on the wider transport network.	Benefits from a reduction in car trips, leading to reduced accident and emissions costs, as well as decongestion benefits for other road users. Crowding impacts will occur if accessibility improvements lead to enough increase in rail passengers to create crowding disbenefits for existing rail users.

6.9 In addition there are ongoing financial impacts from the additional operating costs and incremental TOC revenues from additional rail users as a result of the Access for All programme.

Economic Appraisal Assumptions

6.10 The economic appraisal is based on the following key assumptions:

- Overall scheme construction start year of 2009 –for the purpose of appraisal a single representative start point has been selected, and scheme opening year of 2010. This reflects the average construction start and opening years for the selected stations (however, exact construction start years have been used for the cost rebasing for each individual station);
- An appraisal period of 60 years, as standard in DfT appraisal guidance. In addition a sensitivity test at 30 years has been undertaken;
- All scheme costs and benefits are presented in 2010 prices and values in line with DfT guidance;
- The discount rate used is 3.5% for the first 30 years, then 3.0% thereafter, in line with guidance;

- Costs are assumed to grow in real terms, e.g. a real increase above general inflation. The assumption employed is that all costs (operating costs and fares / revenues) increase at a real growth rate of 1% per annum;
- Values of Time and Value of Time Growth in line with DfT guidance:
  - All benefits have been valued at an average non-work value of time of £6.04 per hour based on the 'other' market price (in 2010 prices). This is a prudent assumption as the value of 'other' travel time is lower than that of 'commuting' and 'business';
  - The non-work real growth in the VoT has been applied to all benefits over the appraisal period (from WebTAG);
- Average rail demand growth of 2.5% per annum has been assumed up to 2035, beyond which no further growth is assumed. This is somewhat lower than the observed rail growth between 1987 and 2014[7], so provides a conservative estimate. The growth rates and 'cap year' are consistent with those employed for 'standard' DfT rail appraisals; and
- Externality benefits based on DfT's Marginal Externality Costs (WebTAG). This varies by station depending on location and dominant road type assumption.

User Groups Benefiting from the Improvements

6.11 For both existing and new users the groups benefiting from the accessibility improvements have been segmented based on their impairment. The different user groups are as listed below:

- Mobility impaired, e.g. passengers with varying levels of walking difficulties;
- Wheelchair users;
- Hearing impaired;
- Sight impaired;
- Encumbered, e.g. passengers travelling with young children, prams, heavy luggage; and
- Unencumbered, e.g. passengers with none of the above impairments.

6.12 For the appraisal, benefits to unencumbered users have not been included. This to remain conservative in the benefits forecast and also to be in-line with the 2010 study. The benefits to unencumbered passengers have been examined in a sensitivity test.

Scheme Costs

6.13 Scheme costs are taken from the actual costs of the accessibility improvements for each station, provided by Network Rail. This has been rebased from the individual construction start year cost to 2010 prices to provide an even comparison. The scheme implementation costs vary from £1.4m to £3.8m.

6.14 The renewal costs are set to be half that of the original implementation cost and due to take place every 20th year. This cycle is based on a general asset life expectancy for lifts, the installation of which is an important part of all the accessibility schemes, of 20 - 30 years minimum, with several manufacturers offering 20 years guaranties. The operation and maintenance costs are assumed to be 1.5% of the implementation cost.

[7] ORR: http://dataportal.orr.gov.uk/displayreport/report/html/02136399-b0c5-4d91-a85e-c01f8a48e07e

Table 6.2: Capital Costs

Station	Construction Start	Opening Year	Costs (2010 market prices)
Huddersfield	September 2007	September 2011	£2,413,312
Kidderminster	August 2007	July 2008	£2,233,471
Bridgend	August 2011	March 2012	£1,411,707
Rutherglen	November 2007	March 2009	£1,702,564
Vauxhall	August 2011	July 2012	£2,746,876
Purley	May 2007	July 2008	£3,847,730

Scheme Demand

6.15 Base demand is calculated using 2013/14 ORR entry/exit data for the selected stations, which are split between the different user groups based on the station counts. In the business case calculations the base demand has been rebased to the average scheme opening year of 2010, based on the average annual rail use growth of 2.5%.

Table 6.3: Base Demand per Station and User Group, ORR entry/exit counts 2013/14

	Hudders-field	Kidder-minster	Bridgend	Ruther-glen	Vauxhall	Purley	Total
Mobility impaired	9,031	5,017	26,999	1,140	58,707	6,142	9,031
Wheelchair	4,684	1,004	1,633	361	1,025	453	4,684
Hearing	2,758	793	1,633	515	2,698	566	2,758
Sight	24,582	3,822	7,162	5,912	24,279	15,536	24,582
Encumbered	309,682	40,375	113,611	30,079	768,994	134,162	309,682
Unencumbered	4,465,370	1,534,832	1,520,476	992,797	18,546,013	2,907,311	4,465,370

6.16 The demand uplift is calculated based on post implementation surveys undertaken at the six stations, where passengers were asked if the accessibility improvements had led to an increase in their usage of the station.

6.17 The percentage that stated that they had increased their usage, either significantly or slightly, was multiplied with the assumed increase, 1/3 more trips for significant increase and 1/10 more trips for slight increase, as shown in the formula below:

$$Usage\ Growth = (No_{significant\ increase} * 1/3 + No_{slight\ increase} * 1/10) / No_{total}$$

6.18 To take into account response bias, e.g. stated increased usage unrelated to the accessibility improvements at the selected A4A stations, the growth numbers have been reduced by subtracting the weighted average growth based on stated increased station usage at the control stations as defined in the 2010 study[8]. This has been done to provide a conservative estimate and also to be in-line with the previous study. The resulting demand uplift factors are provided in Table 6.4.

[8] In the 2010 study, four A4A stations and four comparable non-A4A stations were surveyed, with the users of the non-A4A stations reporting a small increase in station usage following improvements to the station.

6.19 As mentioned above, the unencumbered group is assumed to have no growth related to the station accessibility improvements. This is a conservative assumption as 3% of this group indicated that they had increased their use following the station accessibility improvements, the same level as visually impaired and encumbered passengers.

Table 6.4: Assumed Demand Uplift per Station and User Group

	Hudders-field	Kidder-minster	Bridgend	Ruther-glen	Vauxhall	Purley	Weighted average
Mobility impaired	3.1%	1.5%	3.9%	3.2%	6.3%	1.0%	4.9%
Wheelchair	11.0%	0.0%	21.5%	0.0%	0.0%	0.0%	9.5%
Hearing	0.0%	0.0%	6.8%	10.9%	13.2%	11.0%	6.5%
Sight	1.0%	0.0%	2.5%	0.0%	8.3%	0.0%	3.0%
Encumbered	1.5%	0.8%	1.6%	2.8%	5.5%	0.9%	3.7%
Unencumbered	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

6.20 It should be noted that, at this broken down level the data for the demand uplift is based on relatively small sample sizes. From a total interview question sample of 1,230[9] - 784 were identified as belonging to the business case target groups (disabled or encumbered users). Of these, 94 station users - or 12%, reported an increase in use following the station improvements. For this reason the aggregate results across the six A4A stations should be regarded as more reliable, and the individual station results as indicative only.

6.21 As can be seen in Table 6.5, the reported increased usage varies between the stations - from 4% at Purley to 22% at Vauxhall. Similarly it also varies by type of impairment - from 4% for visually impaired passengers to 33% for wheelchair users. It's clear the number of station users reporting an increase in use is particularly small for some stations and impairment groups, and even smaller when divided by both.

Table 6.5: Interview Question "Impact on Use of Station?" Details

	Hudders-field	Kidder-minster	Bridgend	Ruther-glen	Vauxhall	Purley	Total
Question sample size	236	164	228	236	165	201	1230
Target group size (% of question sample)	179 (76%)	109 (66%)	141 (62%)	166 (70%)	89 (54%)	100 (50%)	784 (64%)
Of which, reported increased use	13 (7%)	7 (6%)	23 (16%)	27 (16%)	20 (22%)	4 (4%)	94 (12%)
	Mobility Impairment	Wheelchair User	Hearing Impairment	Visual Impairment	Encumbered	*Unencumbered*	Total
Target group size	149	9	67	78	481	*475*	784
Of which, reported increased use	23 (15%)	3 (33%)	13 (19%)	3 (4%)	52 (11%)	*92 (13%)*	94 (12%)

Note: Unencumbered users not part of target group, just shown for information, not included in totals

[9] Question was only asked to those who were aware of the changes to the station, so sample for this question is smaller than sample for interview survey overall of 1849, as reported in Table 2.3

6.22 Of the new demand 50% is assumed to be modal transfer from car. This assumption is consistent with that employed for many 'standard' rail appraisals, and also in line with the 2010 study. There are potential reasons why the proportion of car transfer could be higher or lower than the average, but no solid evidence upon which to make any alternative assumption at this stage. We have undertaken sensitivity test to consider the impact of this assumption and the effect of halving the modal transfer.

Scheme Benefits – User Benefits

6.23 Scheme user benefits are primarily driven by the improvement in perceived quality benefits that station users, existing and new, experience between the 'Do Minimum' (base) and the 'Do Something' (improved) provision. Users will benefit from improved accessibility through obstacle free access to station facilities and platforms, better information and signage etc.

6.24 The user benefits are based on the growth in station usage due to the station improvements, as stated in the post-implementation surveys. This is then used to calculate the percentage change in generalised costs per station and user group using a generalised cost elasticity of -1. The 'Do Minimum' generalised costs (in minutes) are calculated based on the weighted journey times for the different elements of a rail journey, and the 'Do Something' generalised costs (in minutes) are the 'Do Minimum' generalised cost multiplied by the percentage change in station use.

6.25 The user benefits for the existing users are based on the difference between the 'Do Something' and the 'Do Minimum' generalised costs, the value of time (VoT) and the number of existing users, as shown in the formula below:

$$\textit{User Benefits}_{\textit{existing users}} = (\text{'Do Something' GC} - \text{'Do Minimum' GC}) * \textit{VoT} * \textit{No}_{\textit{existing users}}$$

6.26 New users get half of the benefits experienced by existing users. The 'rule of half' is based on the assumption that new users' willingness to pay is equal to that of the average existing user.

6.27 The estimated change in user benefit per trip, in generalised minutes, is presented in the table below.

Table 6.6: Change in User Benefits per Trip (generalised time in minutes)

	Hudders-field	Kidder-minster	Bridgend	Ruther-glen	Vauxhall	Purley	Average
Mobility impaired	4	2	5	4	8	1	4
Wheelchair	14	0	28	0	0	0	7
Hearing	0	0	9	14	17	14	9
Sight	1	0	3	0	11	0	3
Encumbered	2	1	2	4	7	1	3
Unencumbered	0	0	0	0	0	0	0

Scheme Benefits – Non-User Benefits

6.28 Non-user benefits are benefits that accrue to people and businesses who are not direct users of the improved stations. The externality benefits are derived from the reduction in car

vehicle kilometres resulting from modal transfer to rail due to the accessibility improvements at the stations.

6.29 The car kilometre savings have been estimated on the basis of the following assumptions:

- An average car to rail transfer of 50% of new rail users;
- Car occupancy of 1.63, to convert car trips to car transfer kilometres. This is based on WebTAG values for the average car occupancy per kilometre travelled for all trips (work, commuting and other) for all week days (including weekend); and
- The average distance saved due to transfer to rail, specifically calculated per station and in correspondence with the respective average rail revenues / trip lengths.

6.30 The reduction in vehicle kilometres drives the following externality benefits:

- Decongestion - Decongestion benefits result from the removal of cars from the road and accrue to remaining cars on the road network. The benefit per kilometre removed depends on the existing level of congestion;
- Infrastructure - Reduced infrastructure costs resulting from a reduction in car kilometres;
- Accident reduction - Accident reduction results from the removal of car kilometres;
- Reduction in carbon emissions - Carbon emissions are also reduced as a consequence of the reduction in car kilometre;
- Reduction in local air and noise pollution - Locally, air and noise pollution is reduced as a consequence of the reduction in car kilometre.; and
- Indirect taxes – indirect loss in government tax revenue following reduced car kilometres principally due to reduced petrol usage.

6.31 The calculations of the above externality benefits are based on standard marginal external costs per car kilometre, as presented in Table 6.7, based on location and type of roads dominating the local road network. For this assessment, location was station specific, while A-roads were deemed to experience the main impacts at all stations. For the congestion benefits the average impact over all congestion bands were used.

Table 6.7: Marginal External Costs & Indirect Tax - Cars (pence per car km, 2010 prices)

Cost type	Band	London			Inner and Outer Conurbations			Other Urban	
		Motor ways	A roads	Other	Motor ways	A roads	Other	A roads	Other
Congestion	*1*	0.0	1.4	12.4	0.0	0.9	2.3	0.6	2.3
	2	0.0	4.4	25.6	0.0	3.0	9.2	1.8	8.7
	3	0.0	19.7	52.9	0.6	24.8	20.5	10.7	18.8
	4	13.8	131.8	145.9	25.2	132.2	148.8	45.5	130.1
	5	0.0	258.0	199.3	57.9	169.6	226.4	71.0	215.2
	Ave.	0.1	67.1	46.4	2.8	34.2	23.8	13.2	10.8
Infrastructure	*All*	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1
Accident	*All*	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0
Local Air Quality	*All*	0.3	0.3	0.3	0.2	0.1	0.1	0.1	0.1
Noise	*All*	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Greenhouse Gases	*All*	0.9	1.0	1.2	0.9	0.9	1.0	0.8	0.9
Indirect Taxation	*All*	-5.3	-5.6	-7.1	-5.2	-5.2	-5.7	-4.8	-5.4
Total		**-3.8**	**66.1**	**44.1**	**-1.1**	**33.3**	**22.5**	**12.6**	**9.7**

Source: WebTAG, table A5.4.2

TOC Revenues

6.32 The growth in station use will result in an increase in rail fare revenue to the train operating companies (TOCs). The additional rail revenue is calculated based on the increase in demand per user group and station and the average cost of a return ticket at each station.

6.33 The average rail ticket estimate has been calculated based on fares information from the National Rail Enquiries Service (NRES) and best estimates of the destinations and origins of passengers who use the six stations. The estimation process was composed of two steps.

- Step one - choosing the destinations to which passengers were most likely to travel from the station, taking into account the following factors; proximity to large centres of employment, headways between trains on a particular line/route, and the existence of amenities / workplaces within walking distance of the station which would constitute trip attractors; and
- Step two - estimate the shares of demand that each of the stations would attract, based on the following factors: population in the area around the station, the stations commuter potential, and retail opportunities around the station.

6.34 To give a conservative estimate, and reflect that many of the passengers benefitting from the accessibility improvements are not likely to travel in peak time, off-peak return tickets has been chosen as the basis for the average fare estimate. Where available, e.g. in London and Glasgow, local travel cards prices and zones have also been included in the fare estimation.

6.35 In addition we have adjusted the yield to take account of railcards based on the level of use identified in the interview survey for each station. For simplicity, all railcards where assumed to entitle the cardholder to a 33 % (1/3) reduction of initial ticket price, as is the case with National Rail railcards, including the Disabled Persons Railcard.

6.36 Additional revenue from retail spending on stations and trains and railcard purchase has not been included, although these would be expected to increase with increased station usage.

Economic Appraisal Results

6.37 The appraisal results are summarised below for the programme overall and also presented for each station for more detail. Other non-monetised benefits and costs to be included in the overall the overall 'value for money' considerations case for the scheme are then discussed.

Appraisal Results Summary

6.38 The results from the appraisal of accessibility improvements at each of the six stations, as well as an appraisal of the stations combined, are presented in Table 6.9 overleaf. All numbers within the appraisal are in present values, discounted over 60 years.

6.39 The scheme demonstrates a positive economic performance, with benefits overall exceeding costs by 2.4 : 1 over a 60-year appraisal period. However, the benefit cost ratio (BCR) does vary noticeably between the stations, with Vauxhall having an exceptionally high BCR of 11.3 : 1, compared to Huddersfield and Bridgend with decent BCRs around 1.2 : 1, and Kidderminster, Rutherglen and Purley with very low BCRs around zero.

6.40 The key economic benefits of the scheme are user benefits, especially benefits to existing users, which provide over half of the total benefits. Externality benefits also contribute significantly, while new user benefits and rail ticket revenue benefits to the TOCs are smaller.

6.41 The latter is for some of the stations not sufficient to cover the maintenance costs of the A4A improvements (assumed to be borne by the TOCs). This is due to a set of causes, including a low number of current disabled and encumbered users, relatively low stated uplift in demand following the improvements, and relatively low average rail fares for these stations.

6.42 To better understand the key drivers of the business case appraisal for each station, the table below presents the key metrics for each station.

Table 6.8: Overview of Key Drivers per Station

	Hudders-field	Kidder-minster	Bridgend	Ruther-glen	Vauxhall	Purley
Capital cost	£2,498 m	£2,312 m	£1,461 m	£1,762 m	£2,843 m	£3,982 m
Annual demand	4.36 m	1.44 m	1.51 m	0.93 m	17.58 m	2.78 m
Target group demand	318 k (7%)	46 k (3%)	137 k (9%)	34 k (4%)	775 k (4%)	145 k (5%)
Increased trips	5126 (2%)	349 (1%)	3165 (2%)	860 (2%)	44,044 (6%)	1151 (1%)
Capital cost per additional trip	£ 487	£ 6631	£ 462	£ 2048	£ 65	£ 3461

6.43 As can be seen, Vauxhall has a very low cost per additional trip, which is caused by a high level of demand in the target user group (disabled and encumbered users) and a significant increase in trips following the station improvements paired with an average capital cost level.

6.44 Huddersfield and Bridgend, while seeing lower overall demand, have both high proportions of the target group users and a relatively good level of growth in trips for these groups following the station improvements. Additionally the capital costs lies around low to average.

6.45 The poorly performing stations, Kidderminster, Rutherglen and Purley, all have high capital expenditure per new trip, however the reasons for this differ somewhat. For Kidderminster, the poor value if caused by the low level of target user groups and the low growth in usage. For Rutherglen, the causes are more the overall low demand for this station and low proportion of the target user groups. For Purley, a key impact is the high capital and operational cost, combined with a limited increase in use following the improvements.

Table 6.9: Economic appraisal (£ 000 PV, 2010 Prices & Values)

	Huddersfield	Kidder-minster	Bridgend	Rutherglen	Vauxhall	Purley	*Total*
Provider (TOC) Impacts							
Operating / Maintenance Costs	-1,511	-1,398	-884	-1,066	-1,720	-2,409	**-8,988**
Rail Ticket Revenue	2,473	116	1,374	184	15,272	357	**19,776**
Net TOC Impacts	*962*	*-1,283*	*490*	*-882*	*13,553*	*-2,052*	***10,788***
User Benefits							
Existing A4A Station Users	4,939	355	2,998	810	40,835	1,166	**51,103**
New A4A Station Users	61	2	67	14	1,195	8	**1,347**
Total User Benefits	*5,000*	*357*	*3,065*	*824*	*42,030*	*1,174*	***52,450***
Non-User Benefits							
Car Externality Impacts	868	52	720	251	19,219	494	**21,605**
Government VAT Revenue Impact	-495	-23	-275	-37	-3,054	-71	**- 3,955**
Total Benefits	**6,335**	**- 897**	**4,000**	**157**	**71,747**	**- 455**	**80,887**
Capital Expenditure	-2,972	-2,751	-1,739	-2,097	-3,383	-4,739	**-17,681**
Renewal (Long Term Charge)	-2,614	-2,420	-1,529	-1,844	-2,976	-4,168	**-15,551**
Total Costs	**- 5,587**	**- 5,170**	**- 3,268**	**- 3,941**	**- 6,359**	**- 8,907**	**- 33,233**
Net Present Value (NPV)	748	- 6,067	732	- 3,785	65,389	**- 9,362**	**47,655**
Benefit Cost Ratio (BCR)	**1.13**	**- 0.17**	**1.22**	**0.04**	**11.28**	**- 0.05**	**2.43**

Other Benefits and Costs

6.46 It is important to recognise that the economic appraisal does not include the following benefits:

- Benefits to 'unencumbered' users - there will also be benefits the unencumbered due to general renewal of station facilities and improved quality of signage, information, lighting and removal of clutter (the survey results provide good supporting evidence for these benefits, both for unencumbered users stating and increase in use following the accessibility improvements and the observed high use of lifts by unencumbered users);
- The value of improvements of this nature (i.e. inclusiveness) that the general population (i.e. those who do not use the scheme) place on such interventions, based on their principles and ethics about the role of Government (and by extension Government expenditure) in supporting an inclusive society;
- 'Option values' for potential users of the scheme - the value that potential users would derive from the possible future benefits associated with:
  - Anticipation of future need – i.e. people who will have children / get old;
  - Ability to travel if temporarily incapacitated e.g. injured ; and
- The ageing of the population - in the future more people will likely come into the various disabled categories.

6.47 Though these additional benefits are difficult to quantify, and hence include in the benefit cost ratio, they should be considered as part of the overall 'value for money' case for the scheme.

6.48 There are also possible additional costs that have not been included, such as disruption to existing rail users or closing of stations during implementation.

Sensitivity Tests

6.49 Given that there are some uncertainties surrounding the business case appraisal, we have undertaken an extensive sensitivity testing exercise in order to identify the key drivers behind the business case, and the robustness of the central case. The following assumptions have been tested:

1. Operating & maintenance costs (central case 1.5% pa, test case 3% pa);
2. Capital cost (test case +50% on actual costs);
3. Demand elasticity (central case -1, test case -0.5);
4. Generalised Cost (central case 130, test case 100);
5. Uplift in demand (central case based on survey results from each station applied to that station, test case based on the average survey response across all stations applied to each station);
6. Base Demand (50% of central case);
7. Benefits from new trips (central case 50% benefit, test case 25%);
8. Including unencumbered users (central case 0% benefit, test case 1% increase in trips);
9. Modal shift from car (central case 50% modal shift, test case 25%);
10. Fare levels (test case 50% of estimated fare levels);
11. Appraisal period (central case 60 years, test case 30 years); and
12. Rail trip growth (central case 2.5%, test case 5.0% - closer to the observed growth in national rail trips over the last 30 years).

6.50 The results of the sensitivity tests are summarised in Table 6.10 below. It can be seen that the Benefit Cost Ratio / BCR ranges from 1.08 to 19.45, though it is important to bear in mind that:

- The majority of these tests are 'downside' tests, e.g. a worsening of conditions;
- The chief 'upside' test - including unencumbered passengers, is considered to be marginal in reality and quantifying it is very difficult. So, although there is likely to be a benefit to unencumbered passengers, it might be better treated as an additional, unquantified benefit; and
- The probability of the different tests being genuine does vary, though in all cases they can be considered to be extreme in their extent. That is, although there is some uncertainty regarding the correct values to use the margin for error is narrower than implied by these tests, which aim to illustrate the boundaries.

6.51 Bearing in mind these points, these tests do illustrate the relative impact of different variables, highlighting the importance of the base demand at the station, and specifically the volume of disabled and encumbered passengers (test 6). Even so, halving the assumed demand still leads to a positive BCR (1.1 : 1) indicating that there can be a business case for implementing A4A improvements at slightly smaller stations (though not at very small stations where the justification would need to be on social grounds).

6.52 The highest BCR is for including benefits to unencumbered based on the stated increased usage in the interview surveys (taking into account response bias). Despite this error margin adjustment leading to zero increase for several stations and the average increase being only 1.3% overall, this does have a significant impact.

6.53 In all other cases, the BCR remains above 1.5, and in most cases above 2.0, indicating that the case for improving these stations through the A4A programme is robust.

Table 6.10: Sensitivity Test Results

Test		Net TOC Impacts	Total benefits	Total costs (capex + renewal)	NPV	BCR
-	**Central case**	**£ 10,788 m**	**£ 80,887 m**	**£ 33,233 m**	**£ 47,655 m**	**2.43**
1	Opex & Maintenance 3%	£ 1,800 m	£ 71,899 m	£ 33,233 m	£ 38,667 m	2.16
2	Capex +50%	£6,294m	£ 76,393 m	£ 49,849 m	£ 26,545 m	1.53
3	Elasticity -0.5	£ 10,788 m	£ 54,663m	£ 33,233 m	£ 21,430 m	1.64
4	Generalised cost -25%	£ 10,788 m	£ 68,784m	£ 33,233 m	£ 35,551m	2.07
5	Average response	£ 11,382 m	£ 78,064m	£ 33,233 m	£ 44,831 m	2.35
6	Base Demand -50%	£ 900 m	£ 35,950m	£ 33,233 m	£ 2,717 m	1.08
7	1/2 new user benefits	£ 10,788 m	£ 80,241m	£ 33,233 m	£ 46,982 m	2.41
8	Including unencumbered	£ 133,203 m	£ 646,343m	£ 33,233 m	£ 613,110 m	19.45
9	25% mode shift from car	£ 10,788 m	£ 70,085m	£ 33,233 m	£ 36,852 m	2.11
10	Halved fares	£ 900 m	£ 72,977m	£ 33,233 m	£ 39,744 m	2.20
11	30-year appraisal period	£ 5,328 m	£ 43,125m	£ 23,157 m	£ 19,968 m	1.86
12	Rail trip growth 5%	£ 20,337 m	£ 127,176 m	£ 33,233 m	£ 93,943 m	3.83

7 Conclusions and Recommendations

7.1 The overall conclusion is that the A4A programme has a positive business case based on the economic appraisal undertaken.

7.2 At the same time, the economic appraisal did vary substantially between the six study stations, with the crucial factors being the number of disabled and encumbered passengers using the station in the first place, and the number stating that the A4A improvements have led to them increasing their use.

7.3 It is also important to recognise that the business case is only part of the story. A4A has important social benefits in terms of giving everyone the opportunity to travel by rail. Its benefits also extend well beyond people with a disability, most obviously to passengers with luggage, but also to what we have termed "unencumbered" passengers: in effect, all passengers benefit to some extent. Both the passenger interview survey and the lift counts provide good supporting evidence for this – both stated and observed behaviour showing unencumbered passengers benefitting from A4A investments.

7.4 Furthermore, there are other benefits of A4A not directly captured in the economic appraisal. These includes the value of inclusiveness experienced by non-users, due to the value we as a society puts on equality and inclusiveness, and 'option value' for potential future users, who would permanently or temporarily benefit from increased accessibility – either through short term injury, having children or growing old. The ageing of the population means that in the future more people will likely come into the various disabled categories.

7.5 This study does, however, highlight some important lessons for the A4A programme which if acted upon could greatly increase its value (and economic case). In particular, the relative lack of awareness of the improvements even after having time to bed-in, seem to point to insufficient consideration to the communications aspects of the programme. At the most basic level, we noted that there is room for improvement in signage at the stations, with noticeable numbers of A4A station users unaware of the existence of the lifts. Similarly, the presence of lifts was not always evident from the information on the National Rail Enquiries Stations Made Easy web pages (even some years after their construction). On this basis, we recommend that:

- The A4A programme is continued;
- An amount equivalent to 10% of the A4A cost is set aside for communications and promotions;
- A complementary communications plan is developed alongside the A4A implementation plan;
- Communications begin ***before*** construction starts to let people know that improvements are coming (and when);

- Signage and wayfinding information is reviewed and updated at the same time as A4A improvements are implemented;
- Station staff are engaged within programme so they are empowered to play their part in raising awareness of the improvements;
- Communications are targeted not just at rail users at the station and visiting the National Rail Enquiries website, but at people living within the local community – for example, this might be achieved through working with the local media; and
- An opening event is a standard part of the communications plan – this should be timed to be roughly three months after completion to allow for bedding-in.

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