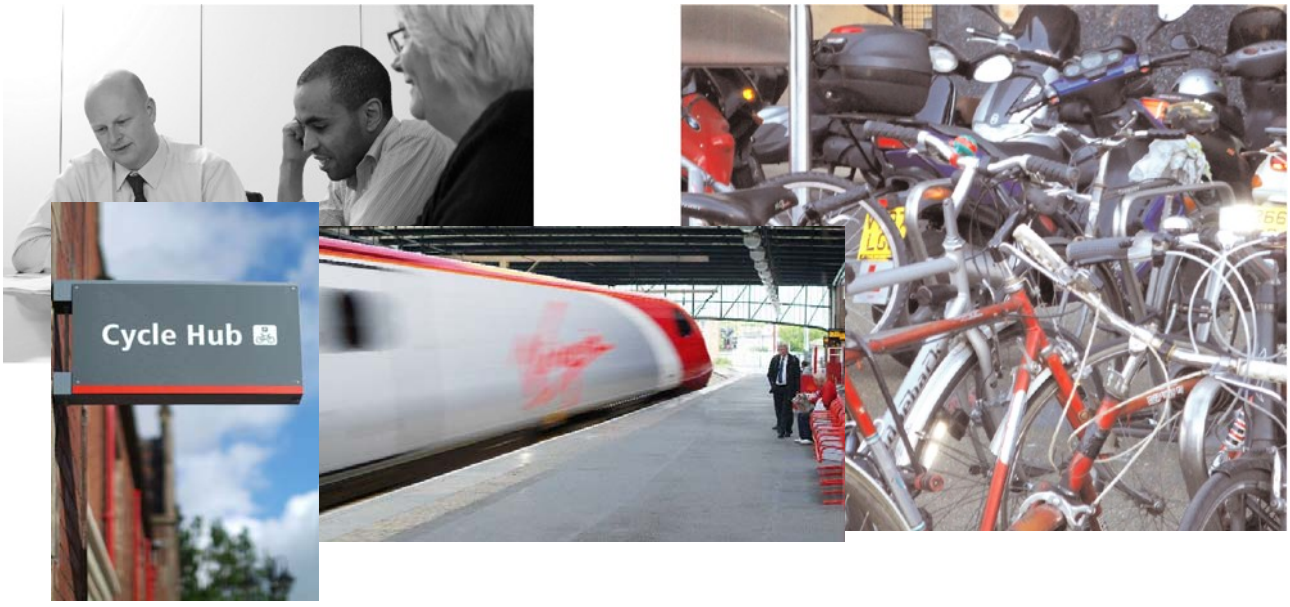
Bike ‘n’ Ride

Programme Evaluation

Report for Association of Train Operating Companies

July 2011



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Introduction

This report presents the findings of an independent evaluation of the Department for Transport funded Bike 'n' Ride programme, to improve cycle facilities at stations covering four rail franchises – Northern Rail, Merseyrail, Virgin Trains and South West Trains. The evaluation was based on short interviews to determine access-mode conducted with a random sample of station users, and complemented with the distribution of self-completion questionnaires. Also, station inspections were undertaken to collect detailed information on usage of cycle facilities pre- and post-Bike 'n' Ride.

Overall, the evidence suggests that the Bike 'n' Ride programme has led to a positive change in behaviour, awareness and attitudes in relation to cycling as a form of access and egress to rail stations and that the programme has created several quantifiable benefits that meet the goals of government, local highway authorities and the rail industry.

What has been delivered through the Bike 'n' Ride programme?

The Bike 'n' Ride programme has delivered an additional 2,800 'standard' cycle parking spaces, 1,161 secure cycle parking spaces, 48 cycle lockers, 310 hire bikes, and three cycle hub and cycle hire facilities. At a Train Operating Company level, this represents:

- **Northern**: 961 additional cycle spaces and, separately, 36 cycle locker spaces.
- **Merseyrail**: 1,059 additional cycle spaces which include 811 secure cycle parking spaces. Also, 12 cycle lockers and a cycle hub facility are now provided at Southport station.
- **Virgin Trains**: 294 extra cycle parking spaces, 110 cycles for hire and a cycle hub at Stoke-on-Trent station.
- **South West Trains**: 1,297 additional 'standard' cycle spaces and a further 350 secure cycle parking spaces; and a cycle hire/shop facility within Richmond station.

What has been the impact of additional cycle facilities on cycles parked and cycle access?

An audit of cycle facilities and a survey of passengers before and after scheme implementation were carried out across 120 of the 178 Bike 'n' Ride stations.

A comparison of pre- and post-implementation audit figures showed there has been **an increase in cycles parked of 12%**. This means an additional 180 cycles were parked at the time of the post-audits, from a benchmark of 1,457 cycles parked at stations prior to Bike 'n' Ride.

The findings suggest that the best return in investment of new cycle facilities at stations, in terms of increasing the numbers of passengers parking their cycles at stations, is through large-scale schemes (80 or more additional cycle parking spaces/secure cycle parking spaces and/or cycle hire/hub). Such stations saw an increase of +33% in cycles parked (+17% in terms of cycle access mode switch). By comparison, +2% in cycles parked (+5% in terms of cycle access mode switch) was observed at stations where medium sized schemes were implemented (adding between 21-80 cycle parking spaces).

It is also clear from the audit that there has been latent demand for additional cycle parking at smaller stations where the type of Bike 'n' Ride scheme was more modest (20 or less additional cycle parking spaces). At these stations, an increase of +49% in cycles parked was observed. However, because only a fairly small proportion of passengers would be able to take advantage of the new facilities at each

station, and the survey would only be able to represent a sample of these, the passenger survey suggests no overall impact in terms of cycle access mode switch (i.e. in percentage of rail passengers who access the station by bicycle).

Rail station access mode was obtained via face-to-face interviews with a random sample of passengers at each station, before and after Bike 'n' Ride implementation. At an overall level, the evaluation of the survey findings suggested that **the Bike 'n' Ride programme has led to a 6% increase in rail passengers travelling to or from their station by cycle** (i.e. doubling cycle mode share from 6% to 12%).

Amongst passengers now cycling to the station, 78% referred to aspects of Bike 'n' Ride as the main reason for cycling to the station (in particular improved cycle routes and better cycle parking, improved feelings of safety, and to a lesser extent, improved signing).

What has been the impact of additional cycle facilities on passenger behaviour, attitudes and awareness?

Overall, the evidence suggests that the Bike 'n' Ride programme has led to positive change in behaviour, awareness and attitude. Interviews conducted with rail passengers, and self-completion questionnaires, confirmed the following:

- Rail passengers that cycle to the station now travel more frequently compared to pre-Bike 'n' Ride, with 57% now travelling 5 or more time a week, an increase of 10%
- Rail passengers are now more likely to cycle to the station (+7%) and are less influenced by the weather and other external factors
- Cyclists now choose to park their cycles within station grounds using formal cycle stands (+12%)
- Rail passengers are less likely to take their cycle on the train (-7%)
- Rail passengers are now more aware of the cycle facilities available at their station; 95% of rail passengers that cycle to a station are aware of cycle parking at the station, an increase of +9%
- Rail passengers who cycle to the station are now more satisfied with the ease of accessing cycle facilities (+13%) and the quality and security of cycle parking at the station (+26%)
- Cyclists are also more satisfied with the quantity of adequate cycle parking (+20%)

Conclusions

This evaluation, conducted over a two-year period, demonstrates that the Bike 'n' Ride programme has, therefore, been effective in: increasing the use of cycling to railway stations, increasing the number of cycles parked formally and securely at railway stations, reducing the number of cycles taken onto trains, and increasing awareness of cycle facilities and improved cycle access to stations amongst passengers.

It is also worth noting that marketing of many of the facilities implemented as part of Bike 'n' Ride had yet to take place when the audit and surveys were done, as such there is a significant chance that usage of these facilities could increase sharply in the short term when the planned marketing promotes and increases awareness.

It is fair to say that the Bike 'n' Ride programme overall has created at least a +6% mode shift towards cycle (as demonstrated by the passenger survey) and +12% increase in formal cycles parked at stations (as observed in the audit of parked cycles). Further recommendations on future implementation are identified in the conclusions.

1 Introduction

1.1 Background

1.1.1 In 2009 the Department for Transport (DfT), with Cycling England (CE), in partnership with the Association of Train Operating Companies (ATOC) launched the Bike 'n' Ride (BnR) programme to improve cycle facilities at stations. Competitive bids were encouraged for the BnR fund and four rail franchises were successful: Northern Rail, Merseyrail, Virgin Trains and South West Trains.

1.1.2 DfT and CE tasked ATOC to independently evaluate the impact of the BnR programme, and MVA Consultancy was commissioned to undertake this work on behalf of ATOC.

1.1.3 This report gives the findings of a benchmarking survey undertaken at stations during February, March and April 2010 (pre-BnR implementation) and evaluates this against a survey undertaken at the same period in 2011 (post-BnR implementation). The report sets out the impact of the BnR programme on cycle use, and any changes in rail passenger behaviour and attitudes to cycle use and improved facilities, and the underlying reason(s) for any change(s).

1.1.4 It should be noted that at some stations BnR facilities were still being installed when fieldwork was completed. In addition to this, several stations were added to the BnR programme only after we undertook the benchmark survey in 2010 so a full evaluation of BnR facilities installed at these stations has not been possible. For completeness, a separate summary of all measures funded by the BnR programme, but not necessarily part of the full evaluation, is set out at the beginning of Chapter 2.

1.1.5 As well as the above, an additional set of BnR schemes are being funded by the DfT at stations operated by Northern, Merseyrail and South West Trains. Because these schemes were not in place during this evaluation they have not been included in the assessment.

Bike 'n' Ride Programme

1.1.6 The BnR programme has enabled the four train operating companies to fund cycle improvements at stations with the aim of increasing the number of cycle journeys to and from rail stations. The improvement in cycle facilities has included one or more of the following at each target station:

- increased cycle parking;
- new cycle-hire facilities;
- better information and signing of cycle facilities;
- improved cycle access to/from the station; and
- the introduction of 'cycle-hubs' – dedicated cycle facilities combining secure parking with other cycling services (e.g. cycle shop and/or repair workshop).

1.2 Research Objectives

1.2.1 The main objectives of the research were to:

- assess the existing cycle facilities at each of the stations in scope **before** the improvements;
- understand the perceptions, and needs/aspirations of cyclists and would-be cyclists at stations; and
- monitor the change in behaviour and attitude amongst station users **after** the introduction of improved cycling facilities.

1.2.2 As well as a quantitative evaluation of the BnR programme, complementary qualitative research gained additional insight into the rationale for any changes in behaviour (i.e. specific aspects of the BnR programme, as distinguished from other externalities) giving examples/descriptions of individual cyclist's perspectives, perceptions and experience.

1.3 A Two-stage Research Programme

Bike 'n' Ride Evaluation

1.3.1 The evaluation has been undertaken in two stages:

- Stage 1 – a benchmarking audit of cycle facilities, quality of cycle access and signage; and survey of passenger awareness of, and attitudes to, existing facilities at the station was undertaken in 2010, prior to implementation of the BnR programme; and
- Stage 2 – a follow-up audit of cycle facilities, and observation and interview surveys to examine any changes in cycle use and/or attitudes amongst rail passengers was carried out in 2011, post BnR programme implementation.

BnR Stations

1.3.2 In total, 178 stations were surveyed as part of the BnR monitoring and evaluation programme, but due to uncertainty concerning implementation issues on the ground, several stations were either dropped, or added, for the second stage of fieldwork. As a result, 120 stations were fully evaluated (both Stage 1 and Stage 2) covering: Northern Rail (76 stations) Merseyrail (18), Virgin Trains (6) and South West Trains (20). A full breakdown is provided in Table 1.1.

Table 1.1: Evaluation Type by TOC

TOC/Evaluation Type	Full Evaluation	Stage 1 Only	Stage 2 Only	Total
Northern	76	23	1	**100**
Merseyrail	18	0	1	**19**
Virgin Trains	6	1	0	**7**
South West Trains	20	16	16	**52**
Total	**120**	**40**	**18**	**178**

1.4 Evaluating BnR by Station Patronage and BnR Scheme

1.4.1 To provide more meaningful evaluation of the BnR programme, stations have been defined according to passenger footfall, and separately, by BnR scheme, as follows:

Station patronage

1.4.2 Stations have been classified according to passenger footfall at each station. The latest entry and exit data from Office of Rail Regulation was used[1], and stations have been defined as:

- **Low** – annual rail passenger entries and exits is less than 500,000.
- **Medium** – annual rail passenger entries and exits is between 500,000 and 2 million.
- **High** - annual rail passenger entries and exits is greater than 2 million.

BnR scheme

1.4.3 To help evaluate the impact of BnR by the quality and quantity of schemes implemented, three categories of scheme type have been defined as follows:

- **Small**: the equivalent of 10 or less additional cycle parking stands.
- **Medium**: the equivalent of 40 or less additional cycle parking stands/secure cycle parking.
- **Large**: the equivalent of more than 40 additional cycle parking stands/secure cycle parking spaces &/or cycle hire/hub.

1.5 Report Structure

1.5.1 The remainder of this report comprises:

- a description of the research methodology and survey procedures in **Chapter 2**;
- the results of our detailed audit of cycle facilities and their use pre- and post-BnR, at the stations surveyed, in **Chapter 3**;
- changes in station access mode share for cycle, and other modes, pre- and post-BnR, are set out in **Chapter 4**;
- evidence of changes (pre- vs. post-BnR) in: profiles of passengers accessing the station by bicycle; attitudes to cycling and cycling facilities at station; and perceived barriers to station access in **Chapter 5**;
- Conclusions and recommendations are provided in **Chapter 6**.

[1] Station Usage 2009-2010, www.rail-reg.gov.uk

1.5.2 Accompanied with this report is a series of appendices, as follows:

- Appendix A – list of stations surveyed, by Train Operating Company.
- Appendix B – a detailed research methodology including sampling and weighting procedures.
- Appendix C – survey materials (station inspection form, rail passenger interview questionnaire and self-completion questionnaire).
- Appendix D – annotated station plans for each station.
- Appendix E - cycle information by TOC and station (cycle access, and availability and use of formal and informal cycle parking), and separately, insight into rail passengers who do not cycle to the station.

2 Research Methodology

2.1 Introduction

2.1.1 Stage 1 (benchmarking assessment) and Stage 2 (evaluation) of the BnR evaluation involved an audit of facilities at each of the BnR stations (**station inspections**), and interviews with station users to establish access mode share, and attitudes and behaviour towards cycling and cycle facilities (**rail passenger interviews**).

2.1.2 Both stages of the fieldwork adopted similar data collection techniques to ensure comparisons could be made on a consistent basis[2]. The following paragraphs provide a summary of the research design, and separately, the weighting procedures used for data analysis. A more detailed account of the research methodology is contained within Appendix B.

2.2 Station Inspection

2.2.1 Inspections were undertaken at all BnR stations during February, March and April 2010, prior to the introduction of cycling facilities, and at the same period in 2011, after the introduction of facilities.

2.2.2 The inspections took place between 09.00 and 16.00 on weekdays. At the three largest stations, in terms of passenger footfall, across the BnR programme (Clapham Junction, Manchester Piccadilly and Surbiton) additional inspections were undertaken in the evening (between 20.00 and 22.00) so that comparisons between day and night cycle parking use could be made.

2.2.3 For each of the BnR stations, a cycle facilities record form was compiled, and separately, a station map, was annotated by the station auditor. Observed information on existing cycle facilities and use was recorded, including the following:

- the number of formal and informal parking spaces for cycles in, and around, the station;
- types of formal cycle parking available (e.g. 'Sheffield', 'butterfly', 'two-tiered', 'secure lockers');
- the level of other provision for cyclists – including information provision, signing and repair facilities; and
- the number of formally, and informally, parked cycles and use of any other cyclist facilities.

2.2.4 The time of day/day of week and light and weather conditions when the survey was carried out was also recorded.

2.2.5 A copy of the station inspection form, pre- and post-BnR, is contained within Appendix C.

[2] there are no externalities affecting cycle access to rail stations during the period spring 2010 – spring 2011 that the researchers were aware of, except the general backdrop of continuous gradual increase in national patronage figures year on year

2.2.6 A station layout plan for each station was obtained from the National Rail Enquiries website and annotated by the auditor to show/confirm the location of all cycle parking facilities and access points to the station. Annotated station plans for all BnR stations, pre- and post-BnR, are contained within Appendix D.

2.3 Rail Passenger Interviews

2.3.1 Information from a randomly selected sample of rail passengers, on their mode of access to the station (or egress mode for those departing the BnR station) and some limited insights into attitudes, were obtained via a short at-station interview. All short interview respondents were subsequently invited to take a self-completion questionnaire to provide additional behavioural and attitudinal information at a time and place convenient to them. As a means of boosting insight into existing cyclists' attitudes, self-completion questionnaires were also handed-out to cyclists at, or around, the station and attached to bikes formally parked at each station.

2.3.2 The following information was obtained via the short interview and self-completion questionnaires. Copies of the short interview form and self-completion questionnaire are contained within Appendix C.

Short Interview:

- most common means of accessing the station [if not cycling, whether the respondent ever cycles];
- [Stage 2 only] means of accessing the station a year ago [if now cycle but didn't a year ago, why cycle?]; and
- [if non-cycle] the main reason why they do not cycle to the station and any barriers that they perceive to cycling to the station.

Self-completion questionnaire:

- [if cycle] whether they take their cycle onto the train, or park at/around the station, and whether this is their preferred action;
- [if non cycle] why not cycle?;
- whether they use rail for more than one journey purpose, and whether/how access mode changes with journey purpose and/or by weekday/weekend;
- awareness of cycling facilities at the station;
- views about cycling facilities;
- [Stage 1 only] opinions on planned improvements (including whether their station access behaviour is likely to change – and whether people currently taking their cycles on trains would continue to do so); and
- demographics (including postcode OD, car availability, bus availability, frequency of train use, and personal profile information).

2.3.3 As explained above, respondents of the short interview were contacted at random. In general, at busy stations, every 3rd passenger was approached. When footfall at the station was low, every 2nd passenger or every person was approached. If groups were intercepted

only one person from the group travelling together was asked for an interview. The random nature of recruitment for the short interview means that the resulting sample can be considered to be fully representative of passengers using the station.

2.3.4 Passengers changing trains at the station were not in scope for the survey.

2.3.5 Interviews were spread out across the day between 07.00 and 16.00; and at the three largest stations (Clapham Junction, Manchester Piccadilly and Surbiton) supplementary interviews were also carried out between 20.00 and 22.00.

2.3.6 Table 2.1 shows the sample breakdown for achieved interviews, and returned self-completion questionnaires at those stations for which we have pre- and post-scheme information.

Table 2.1: Interview and Questionnaire Sample Breakdown

Train Operating Company	Number of Stations	Number of Rail Passengers Randomly Selected & Interviewed		Number of Returned Self Completion Questionnaires	
		Pre-BnR	Post-BnR	Pre-BnR	Post-BnR
Northern	76	675	751	311	318
Merseyrail	18	269	171	71	55
Virgin	6	218	262	81	79
South West Trains	20	307	361	248	242
Total	**120**	**1,469**	**1,545**	**711**	**694**

2.4 Data Weighting

Data from the Short interviews

2.4.1 To ensure that the evaluation of the BnR facilities at stations correctly takes into account the number of passengers who have the opportunity to experience them, the data obtained from the representative sample of passengers responding to the short interviews have been weighted by station-specific passenger footfall. This means that a station with twice as many passengers as another station has double the weighting in our analysis of station-access mode choice. Also, by using the same footfall volumes for weighting both the pre- and post-BnR survey data, we isolate the impact of BnR from the general trend in passenger figures over the past 12 months.

2.4.2 The latest footfall data (2009-2010) was obtained from the Office of Rail Regulation website and is "*an estimate of the number of rail passengers travelling to and from each station (entries and exits)*"[3].

[3] 2009-2010 Station usage data, Office of Rail Regulation, http://www.rail-reg.gov.uk/server/show/nav.1529

Data from the Self-completion questionnaires

2.4.3 The purpose of the self-completion responses was to provide added insight into the rationale for rail passenger behaviour. As such, the views of a cyclist accessing a small station are considered to be as valid as the views of a cyclist accessing a station with greater footfall. In light of this, the self-completion data has not been weighted by station footfall. However, in recognition of the potential bias with self-completion surveys, between those responding and passengers overall, self-completion data was weighted to match overall passenger profiles, by station, according to gender, age and mode choice, as reflected in the short interviews.

2.4.4 Full details of both data weighting methodology are given in Appendix B.

2.5 Qualitative Research

2.5.1 Qualitative research was also undertaken to complement the short interviews with rail passengers and self-completion questionnaires. The purpose of the interviews was to: probe rail passengers for the rationale in their change in behaviour (i.e. BnR improvements and/or other externalities) and, where appropriate, giving examples or descriptions of their experience and circumstances; and obtain verbatim insights that underlie their perceptions and experience.

2.5.2 Telephone interviews were conducted with 23 rail passengers who had completed a Stage 2 self-completion questionnaire and who had agreed to take part in further research. The profile of the respondents' was as follows:

- Gender: 17 were males, 6 females.
- TOC: 13 respondents travelled with South West Trains; 6 Northern; and 4 Merseyrail.
- Age: five were aged between 26-34yrs; five between 35-44yrs; eight between 45-54yrs; three between 60-64yrs; one aged 65-69yrs; and one aged 70+ were interviewed.

2.5.3 We deliberately targeted a range of different rail passengers so as to get insight into the difference perspectives and experiences of different rail customers.

3 Impact of Additional Cycle Facilities

3.1 Introduction

3.1.1 A total £4.48m has been provided by DfT to fund the BnR programme[4]. This has enabled Merseyrail, Northern Rail, South West Trains and Virgin Trains to fund one or more of the following at each target station:

- new, safe and secure cycle parking stands;
- cycle-hire facilities;
- better information and signing of cycle facilities;
- improved cycle access to/from the station; and
- the introduction of 'cycle-hubs' – dedicated cycle facilities combining secure parking with other cycling services (e.g. cycle shop and/or repair workshop).

3.1.2 A key part of the evaluation was the inspection of BnR stations in order to quantify the number of cycle parking spaces available, before and after implementation of the BnR programme, and separately, to identify other new facilities installed, as indicated above. A count of parked cycles was also undertaken at each station, pre- and post-BnR, to determine whether the number of cycles parked following BnR had changed.

3.1.3 This chapter reports the results of the station inspections at an overall level – by TOC, and separately, by BnR scheme type - as well as providing a snap shot of results from the 'top' performing stations in terms of any increase in cycle parking spaces and cycles parked. It also highlights other key cycle facilities introduced as part of the BnR programme.

3.1.4 This chapter provides a context for results presented in subsequent chapters which investigate changes in passenger behaviour (e.g. station access mode) and attitudes to cycling pre- and post-BnR. Appendix D reports the quantity of cycle parking and their use across all BnR stations surveyed.

3.2 Full BnR Implementation Programme

3.2.1 Before confirming the findings of additional facilities and cycles parked at the 120 stations which took part in the full BnR evaluation, this section provides an overview of all measures funded through the BnR programme including stations where a benchmark survey was not carried out and/or the implementation of BnR measures was delayed and therefore not taken into account during the evaluation survey.

3.2.2 Table 3.1 presents the total quantity and type of additional facilities funded by the BnR programme across 138 stations.

[4] This includes an extra £480,000 for addition schemes not assessed as part of this evaluation

Table 3.1: Total Additional Cycle Infrastructure Funded by BnR

TOC (no. of stations)	Type of Additional BnR Facility				
	Standard** cycle parking spaces	Secure cycle parking spaces	Cycle locker spaces	Bikes for hire	'Cycle Hub'/Cycle shop
Northern (77)	961	-	36	-	
Merseyrail (19)	248	811	12	-	1
Virgin (6)	294	-	-	110##	1
South West Trains* (36)	1,297	350#	-	200	1
Total	**2,800**	**1,161**	**48**	**310**	**3**

* South West Trains also obtained 3rd party funding for schemes

** such as cycle parking using 'Sheffield' stands

includes cycle parking in a secure compound

60 hire bikes had yet to be installed at the time of writing

3.2.3 Overall, Table 3.1 confirms that the BnR programme has successfully delivered an additional 2,800 'standard' cycle parking spaces, an extra 1,161 secure cycle parking spaces, 48 cycle lockers, 310 hire bikes and three cycle hubs including cycle hire and maintenance. At TOC level, this represents:

- **Northern**: 961 additional 'standard' cycle spaces, and separately, 36 cycle locker spaces.
- **Merseyrail**: 248 additional 'standard' cycle spaces and a further 811 secure cycle parking spaces. Also, 12 cycle lockers are now provided for rail passengers, and a cycle hub facility is provided at Southport station.
- **Virgin Trains**: 294 extra cycle parking spaces, 110 cycles for hire and a cycle hub facility at Stoke-on-Trent station.
- **South West Trains**: 1,297 additional 'standard' cycle spaces and a further 350 secure cycle parking spaces; 200 cycles for hire; and a cycle hire/shop facility within Richmond station.

3.3 Evaluation of Cycle Facilities and Use at 120 BnR Stations

3.3.1 The following paragraphs confirm the findings from 120 of the 178 BnR stations, where a full evaluation was undertaken (i.e. a Stage 1 and Stage 2 station inspections and passenger interviews). The information presented in this chapter reflects facilities observed/available at the time of the station inspections, which were undertaken in winter and early spring 2010 and 2011, when cycle use is generally lower than in the peak summer months. The evaluation does not reflect BnR measures implemented in May 2011 onwards.

3.4 Observed Weather Conditions during the Station Inspections

3.4.1 Weather, particularly inclement conditions, can impact on cycle behaviour. In light of this, weather conditions were noted at the time of the audit, pre- and post-BnR, and a summary of observed conditions is shown in Table 3.2.

Table 3.2: Observed Weather Conditions Pre- and Post-BnR

Weather Condition	No. of Stations		
	Pre-BnR	Post-BnR	Difference (Pre – Post)
Sunny/clear sky	51	44	-7
Cloudy – no wind	21	30	+9
Windy	16	17	+1
Intermittent showers	11	13	+2
Rain/ snow/ice/hail	21	16	-5
Total	**120**	**120**	

3.4.2 Table 3.2 confirms that overall there was no significant difference at stations where weather conditions were observed to be suitable for cycling (i.e. sunny/clear sky or cloudy – no wind) pre-BnR (72 stations) and post-BnR (74 stations).

3.4.3 An assessment of changes in numbers of cycles parked (pre- versus post-BnR) by variation in weather (pre- versus post-BnR) showed no consistent effect overall, nor at TOC level. Even at stations most affected by variations in weather between the 2010 and 2011 audits, there was no evidence of complications for our evaluation.

3.4.4 At the time of the Pre-BnR station inspections, snow/ice/hail conditions were observed at 7 Merseyrail stations – Bebington, Birkenhead Central, Bromborough, Green Lane, Port Sunlight, Rock Ferry and Spital – but not during the post-BnR inspection. However whilst, in principle, this could have impacted on observed cycle behaviour, comparisons between the number of cycles parked, pre- and post-BnR, provided no evidence to suggest the weather had significantly impacted on observed cycle parking (3 cycles were parked across the seven stations at the time of the pre-BnR stations inspections compared to 1 during the post-BnR inspections). There was also no significant difference in cycle access mode share (see Chapter 4).

3.4.5 Whilst the observed weather conditions have not had a significant impact on our evaluation (as discussed above) it is noted that the winter of 2009/10, prior to the pre-implementation survey, was bad, and that the winter of 2010/11 was even worse - so overall cycle usage is likely to be down in the early spring months of the two years audited compared to years of less harsh preceding winters.

3.5 Cycle Parking Spaces

3.5.1 In total, **5,052 formal cycle parking spaces were observed** across all 120 BnR stations. This represents an increase of **2,581 parking spaces** (an extra 20 per station, on average) from the pre-BnR situation. A detailed breakdown of the changes in the quantity of cycle parking spaces by TOC, and station size, is provided in Table 3.3.

Table 3.3: Cycle Parking Availability by TOC and Station Size

Train Operating Company / Station Patronage	No. of Stations	Total Formal Parking Spaces Pre-BnR	Total Formal Parking Spaces Post-BnR	+/- Difference
Northern				
Low	62	122	697	+575
Medium	13	83	254	+171
High	1	3	10	+7
Average per TOC Station	-	*2.7*	*12.6*	*+9.9*
Merseyrail				
Low	4	44	218	+174
Medium	13	243	697	+454
High	1	14	168	+154
Average per TOC Station	-	*16.7*	*60.2*	*+43.5*
Virgin				
Medium	3	159	297	+138
High	3	134	290	+156
Average per TOC Station	-	*48.8*	*97.8*	*+49.0*
South West Trains				
Low	3	90	145	+55
Medium	10	686	1,120	+434
High	7	893	1,156	+263
Average per TOC Station	-	*83.5*	*121.3*	*+37.6*
Total	**120**	**2,471**	**5,052**	**+2,581**

3.5.2 In summary, data obtained during the station inspections of the availability of cycle parking spaces provides the following insight at TOC level:

Northern

- 961 cycle parking spaces are now provided across 76 stations, a rise of 753 cycle spaces (increasing the average number of formal parking spaces per BnR station from 3 to 12) following the BnR programme.
- The 'top' 6 stations in terms of quantity of formal cycle parking spaces are: Harrogate (32 spaces); Shipley (25 spaces); Hebden Bridge (24); Accrington (24); Bingley (24); and Barnsley (24).
- Secure cycle lockers have been installed at the following stations: Bingley; Brighouse; Crossgates; Ilkey; Guiseley; Mirfield; and Shipley.

Merseyrail

- 1,083 cycle parking spaces are now provided across 18 stations, a rise of 782 cycle spaces (increasing the average number of formal parking spaces from 17 to 60) following the BnR programme.

- The 'top' 6 stations in terms of availability of formal cycle parking spaces, at the station, are: Southport (168 spaces); Bromborough (80 spaces); Blundellsands and Crosby (74); Port Sunlight (68); Eastham Rake (64); and Hooton (62).
- Cycle parking racks in secure compounds are also provided at a majority of Merseyrail BnR stations, most of which require a deposit. Stations include: Birkdale; Blundellsands & Crosby; Hightown; and Hall Road.

Virgin Trains

- 587 cycle parking spaces are now provided across 6 stations, a rise of 294 cycle spaces (increasing the average number of formal parking spaces from 49 to 98) following the BnR programme.
- The 'top' 6 stations in terms of availability of formal cycle parking spaces, at the station, are: Crewe (156 spaces); Stoke-On-Trent (120); Stafford (95 spaces); Macclesfield (82); Manchester Piccadilly (70); Stockport (64).
- Security of cycle parking has been improved at all six Virgin stations through the installation of CCTV and better lighting.

South West Trains

- 2,421 cycle parking spaces across 20 stations, an increase of 752 cycle spaces (increasing the average number of formal parking spaces from 84 to 121) following the BnR programme.
- The 'top' 5 stations in terms of availability of formal cycle parking spaces, at the station, are: Fleet (230 spaces); Surbiton (230 spaces); Guildford (200); Farnborough (196); Walton-On-Thames (180); and Brookwood (158).
- Cycles are also available for hire at Richmond (70 traditional/Brompton bikes) and Guildford (80 Brompton bikes) stations.

3.6 Cycles Parked

3.6.1 Across the 120 BnR stations, there has been **an increase in cycles parked of 12%**, the equivalent of an additional 180 cycles parked since the BnR programme was introduced. Table 3.4 shows cycles parked at a TOC level, and by station size.

Table 3.4: Cycles Parked Use by TOC and Station Size

Train Operating Company / Station Size	No. of Stations	Total Cycles Parked Pre-BnR*	Total Cycles Parked Post-BnR*	+/- Difference Pre- and Post-BnR (% change)
Northern				
Small	62	35	46	+11 (+31%)
Medium	13	21	34	+11 (+52%)
Large	1	0	3	+3 (-%)
Average for TOC Station	-	*0.7*	*1.1*	*+0.4 (+48%)*
Merseyrail				
Small	4	2	3	+1 (+50%)
Medium	13	18	41	+23 (+128%)
Large	1	6	14	+8 (+133%)
Average for TOC Station	-	*1.4*	*3.2*	*+1.8 (+123%)*
Virgin				
Medium	3	75	74	-1 (-1%)
Large	3	86	84	-2 (-2%)
Average for TOC Station	-	*26.8*	*26.3*	*-0.5 (-2%)*
South West Trains				
Small	3	65	58	-7 (-11%)
Medium	10	472	521	+49 (+10%)
Large	7	677	761	+84 (+12%)
Average for TOC Station	-	*60.7*	*67.0*	*+6.3 (+10%)*
Total	**120**	**1,457**	**1,637**	**+180 (+12%)**

*the number of parked bicycles at the time that the audit was conducted

3.6.2 In summary, Table 3.4 shows, at an overall TOC level:

Northern

- Post-BnR, 83 cycles were parked across 76 stations, an increase of 27 cycles parked following the BnR programme.
- The 'top' 6 stations in terms of the highest observed cycle parking use, at the station, are: Cottingley (10 bicycles parked); Harrogate (10); New Pudsey (5); Steeton & Silsden (5); and Ilkey (24).

Merseyrail

- Post-BnR, 58 cycles were parked across 18 stations, an increase of 32 cycles parked following the BnR programme.
- The 'top' 6 stations in terms of the highest observed cycle parking use, at the station, are: Birkdale (24 bicycles parked); Southport (10); Formby (5); Hooton (5); and Ainsdale (1).

Virgin Trains

- Post-BnR, 158 cycles were parked across 6 stations, a decrease of -3 cycles parked following the BnR programme.
- The 'top' 6 stations in terms of the highest observed cycle parking use, at the station, are: Stafford (57 bicycles parked); Crewe (53); Manchester Piccadilly (26); Stoke-On-Trent (16); Stockport (5); and Macclesfield (1).

South West Trains

- Post-BnR, 1,340 cycles were parked across 20 stations, an increase of 126 cycles parked following the BnR programme.
- The 'top' 6 stations in terms of the highest observed cycle parking use, at the station, are: Fleet (152 bicycles parked); Surbiton (142); Farnborough (Main) (141); Walton-On-Thames (113); Guildford (108); and Teddington (108).

3.6.3 The qualitative interviews undertaken with a sub-set of rail passengers confirm that the additional BnR measures implemented above are considered to be a significant improvement:

"The cycle facilities are 1st class" (Male, aged 60-64, Birkdale).

"When the secure facilities were put in I was happy to park my bike at the station. It is easier to leave my bike there rather than take it on a train as I have to take it up the escalators at Liverpool" (Male, aged 35-44, Rock Ferry).

"Yes, it has definitely improved. There are new cycle racks, and a roof has been added" (Male, aged 35-44, Richmond).

"Improved, yes! Before we only had Sheffield stands on the platform. Really, really pleased that the lockers were installed just as I needed to use cycle and train". (Male, aged 45-54, Bingley).

"Yes, it has improved as there is always room to park my bike at the station now. (Male, 45-54, Southampton Airport Parkway).

"There are better facilities now with more security." (Male, aged 35-44, Richmond).

3.7 Cycles Parked by Type of BnR Scheme

3.7.1 To help evaluate the impact of BnR by the quality and quantity of schemes implemented, three categories of scheme type, have been defined as follows:

- **Small**: the equivalent of 10 or less additional cycle parking stands.
- **Medium**: the equivalent of 40 or less additional cycle parking stands/secure cycle parking.
- **Large**: the equivalent of more than 40 additional cycle parking stands/secure cycle parking spaces &/or cycle hire/hub.

3.7.2 Table 3.5 reports the increase in cycles parked by type of BnR scheme, as highlighted above.

Table 3.5: Cycles Parked by Type of BnR Scheme

BnR Scheme Type	No. of Stations	Total Formal Cycles Parked Pre-BnR	Total Formal Cycles Parked Post-BnR	+/- Difference Pre- and Post-BnR (% change)
Small	75	174	259	+85 (+49%)
Medium	24	1,041	1,057	+16 (+2%)
Large	21	242	321	+79 (+33%)
Total	**120**	**1,457**	**1,637**	**+180 (12%)**

3.7.3 The findings shown in Table 3.5 suggest that the best return in investment of new cycle facilities at stations, in terms of absolute increases in the number of passengers parking their cycles at stations, is through large-scale schemes (80 or more additional cycle parking spaces/secure cycle parking spaces and/or cycle hire/hub). Such stations saw an increase of +33% in cycles parked or the equivalent of an additional 4 cycles parked, on average, per station. By comparison, +2% in cycles parked (or 1 additional cycle parked per station) was observed at stations where medium sized schemes were implemented (adding between 21-80 cycle parking spaces).

3.7.4 It is also clear from the station inspections that there has been latent demand for additional cycle parking at smaller stations where the type of BnR scheme was more modest (20 or less additional cycle parking spaces). At these stations, an increase of +49% in cycles parked was observed (the equivalent of 1 additional cycle parked per station).

3.7.5 Table 3.6 reports the proportion of cycles parked by total spaces available at the time of the audit pre- and post-BnR. Overall, utilisation of spaces (as a percentage of total available) has gone down by -4%, indicating the increased provision of parking spaces has exceeded (just) the increase in cycle parking. Note, this spare capacity may be required in the peak summer months when cycle parking (and use) is expected to increase.

Table 3.6: Cycle Parking Use by Type of BnR Scheme

BnR Scheme Type	No. of Stations	% Cycle Parking Utilisation Pre-BnR	% Cycle Parking Utilisation Post-BnR
Northern	76	29%	8%
Merseyrail	18	14%	7%
Virgin	6	55%	27%
SWT	20	73%	55%
Total	**120**	**38%**	**34%**

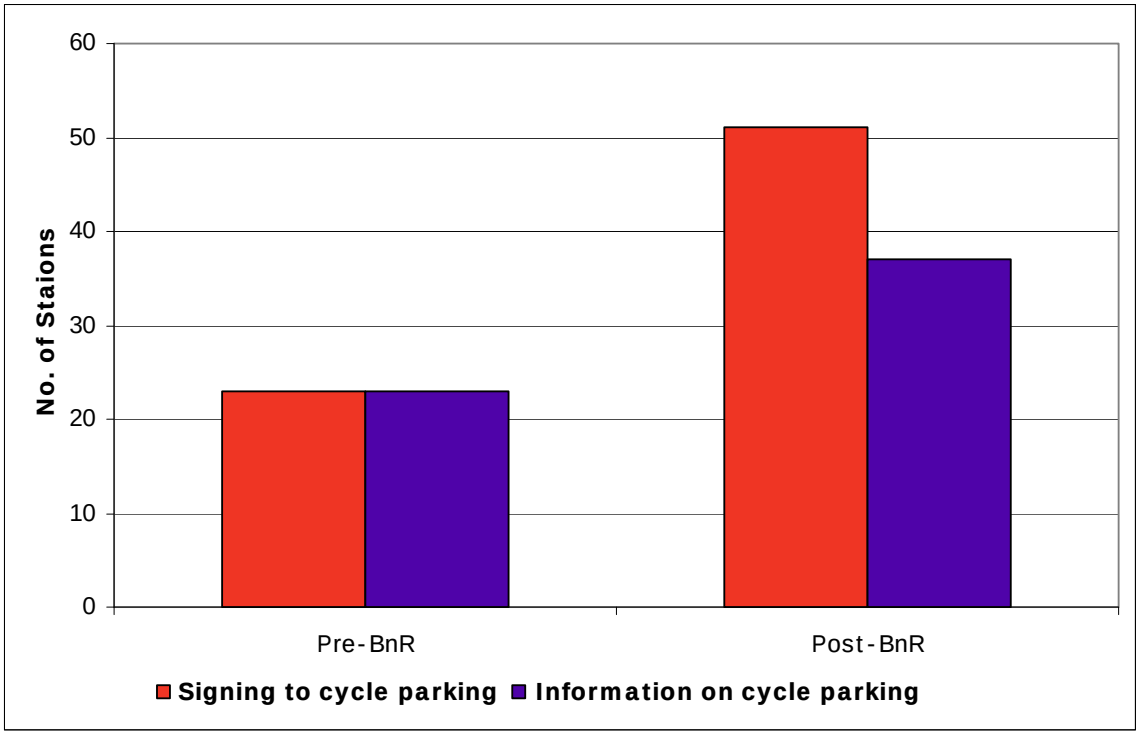
3.8 Other Station Facilities

3.8.1 In terms of other provisions to facilitate and encourage cycling to stations, the key findings of the station inspections are as follows:

Signing and Information on Cycle Parking Areas

3.8.2 Figure 3.1 shows results of the pre- and post-BnR observations of signing and information on cycle parking areas at the 120 BnR stations.

Figure 3.1: Observed Signing and Information to Cycle Parking



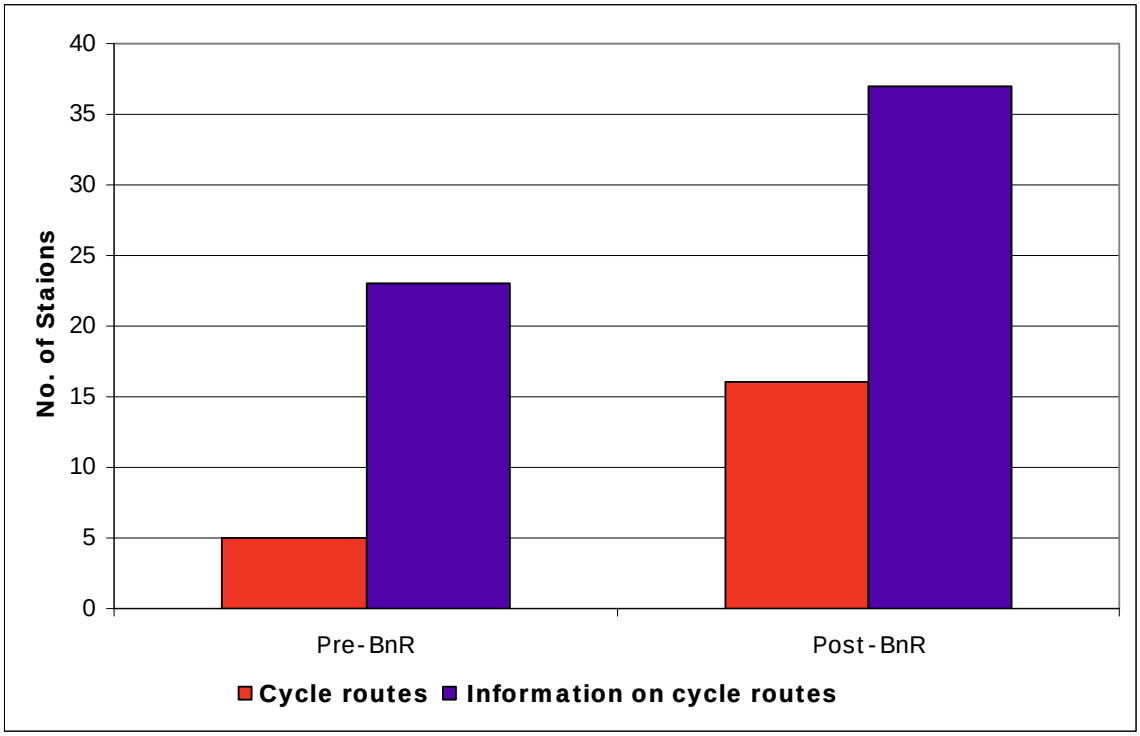
3.8.3 Figure 3.1 shows signing to all or some cycle parking areas was observed at 51 BnR stations (Northern: 31; South West Trains: 4; Merseyrail: 15; and Virgin: 1) during the post-BnR stations inspections. This compares to only 23 stations at the pre-BnR inspections.

3.8.4 In terms of information on cycle parking, 37 stations were observed to have such information post-BnR, compared with 23 pre-BnR.

Cycle Routes and Information on Cycle Routes

3.8.5 Figure 3.2 shows results of the pre- and post-BnR observations of cycle routes and cycle route information at the 120 BnR stations.

Figure 3.2: Observed Cycle Routes and Cycle Route Information



3.8.6 Figure 3.2 confirms that at 37 stations, information on cycle routes, at or near the station, was observed (post-BnR): South West Trains (15 stations); Merseyrail (12); Northern (9); and Virgin (1). Before the BnR programme was implemented, only 23 BnR stations were observed to have had information on cycle parking.

3.8.7 In terms of cycle routes, at 16 stations, formal cycle routes (on/off-road) were observed (post-BnR) near a main or side station entrance(s): Northern (7 stations); Merseyrail (3); South West Trains (4); and Virgin (2). This compares to only 5 BnR stations before BnR.

BnR Cycle Repair and Hire Facilities

3.8.8 At three stations, cycle repair and/or cycle hire facilities are now provided as a result of funding from the BnR programme.

- Richmond (South West Trains): 'Turning Hub' operates the cycle facility within Richmond station. This was established with funding from the BnR programme and from the local authority. A mixture of 70 folding and non-folding bikes are available for hire.
- Stoke-On-Trent (Virgin): 50 folding Brompton bikes are now available for hire at the station.
- Southport Cycle Centre (Merseyrail): The Cycle Centre is based at Southport station and provides cycle hire, secure cycle parking and cycle maintenance[5]. A total of 32 adult and 14 child bikes are for hire for a minimum of an hour. The Cycle Centre, part of the BnR programme, is a partnership between Sefton Council, Merseytravel and Merseyrail.

3.8.9 Cycle hire/repair facilities are also provided near the following stations, although they are not associated with BnR or the relevant TOC:

- Brockenhurst (South West Trains): Country Lanes and Cycle Experience offer cycles for hire.
- Hampton (South West Trains): Birdies Bikes is situated close to Hampton station and offers cycle repair facilities.
- Horsley (South West Trains): Horsley Cycle Birdies Bikes is situated close to Horsley station and offers cycle repair facilities.
- Wareham (South West Trains): Cycle Experience shop is located at the station.

[5] http://www.sefton.gov.uk/default.aspx?page=9548

4 Station-Access and Cycle Mode Share

4.1 Introduction

4.1.1 The short interview with rail passengers provided an **overall assessment of cycle access** pre- and post-BnR. In this chapter, comparisons between pre- and post-BnR cycle mode-share are presented at a TOC level, and separately by type of BnR scheme. Indicative reasons why new rail passengers now choose to cycle to their station are also given. Mode-share at a station specific level for cycle, car and all other of modes, are contained within Appendix E.

4.2 Cycle Access

4.2.1 Overall, across the 120 BnR stations, there has been **a 6% increase in rail passengers travelling to or from their station by cycle**. The results, by TOC, are presented in Table 4.1. This finding is considerably outside the variation in finding that could be associated to sample error alone, and can be considered a statistically significant finding.

Table 4.1: Cycle Access Mode Share by TOC

TOC	% Cycle Pre-BnR	% Cycle Post-BnR	Overall Change ± %	95% Confidence Intervals[6]
Northern	3%	3%	+0%	±2%
Merseyrail	8%	22%	+14%	±5%
Virgin Trains	7%	6%	-1%	±3%
South West Trains	8%	17%	+9%	±4%
Overall	**6%**	**12%**	**+6%**	**±1%**

4.2.2 As shown in Table 4.1, the only statistically significant increase in cycle mode-share has been at stations operated by Merseyrail (+14%) and South West Trains (+9%). In general, the implemented BnR schemes were more significant, in terms of additional formal parking spaces and other facilities, than the schemes at Virgin and Northern stations. [Note: the improved weather in the post-BnR survey at many Merseyrail stations is not the reason for the evaluated increase in cycle access mode share. In fact, cycle mode share went down at these seven stations following BnR (-4%)].

4.2.3 Results show that there has been no discernable change in cycle access by Northern rail passengers, with 3% travelling by cycle pre- and post-BnR. However, because of the relatively small passenger numbers at Northern BnR stations so, too, were our survey sub-sample sizes. Sampling error means that a small percentage increase in cycle access at Northern stations might not be picked up through the interview-based approach. The observed level of cycles parked in the audit provided complementary evidence of a change in level of cycle station access – the 48% increase in cycles parked (reported in Chapter 3) implies a 1% increase in cycle access mode share to 4%.

[6] 95% CIs around the post-BnR cycle mode-share figures, based upon the sub-sample sizes obtained in the post-BnR fieldwork

4.2.4 At BnR stations operated by Virgin Trains, the evaluation results provide no evidence of an increase in cycle access to stations – indeed, there is evidence of a slight reduction in cycle access (but Table 4.1 shows that this can be put down to sampling error). Furthermore, it should be borne-in-mind that, as a consequence of delayed construction of BnR schemes at Virgin stations, the post-BnR fieldwork was undertaken almost immediately after scheme implementation. Thus, any positive passenger action in response to the BnR scheme would have to be immediate for it to be 'picked-up' in the post BnR survey.

4.2.5 In addition to this, cycle mode-share at Manchester Piccadilly has a significant impact on the overall cycle mode for all Virgin BnR stations because of its large footfall in comparison to the other Virgin stations (i.e. footfall is double that of all the other Virgin BnR stations put together). Since the BnR scheme at Manchester Piccadilly was relatively modest (i.e. around 10 additional cycle stands and passenger numbers of around 20 million p.a.), it is not surprising that the overall evaluation for Virgin BnR stations suggests minimal impact in terms of cycle-access. [Note: both Stoke-On-Trent and Stockport have had around 60 additional cycle stands, and the evaluation of Virgin BnR stations would show an increase in cycle mode-share of +2% if Manchester Piccadilly was excluded].

4.2.6 Table 4.2 reports the impact on cycle mode-share by type of BnR scheme. The findings suggest that the evaluation, in terms of increased cycle mode-share, is strongly influenced by the quality and quantity of BnR scheme. [Note: the evaluation of stations with a small BnR scheme is again dictated by the finding at Manchester Piccadilly, as discussed above in paragraph 4.2.6, and should be interpreted as 'no change' to cycle access mode share].

Table 4.2: Cycle Access Mode Share by Scheme Type

Type of BnR Scheme	% Cycle Pre-BnR	% Cycle Post-BnR	Overall Change +/- %	95% Confidence Intervals[7]
Small	5%	4%	-1%	±1%
Medium	8%	13%	+5%	±4%
Large	6%	23%	+17%	±5%
Overall	**6%**	**12%**	**+6%**	**±1%**

4.2.7 Table 4.2 suggests that when a few additional cycle parking spaces are implemented at rail stations, the effect on cycle access mode-share is minimal. However, given that a majority of small schemes were implemented at Northern BnR stations, the sampling issues highlighted in paragraph 4.2.4 above is also relevant here, and it should be borne-in-mind that small schemes have seen significant increases in observed levels of cycles parked compared to medium BnR schemes (as reported in Chapter 3).

4.2.8 Table 4.2 confirms that the impact on cycle access mode-share at stations with larger BnR schemes is significant, and indicates that considerable change in access mode-share can be achieved.

[7] 95% CIs around the post-BnR cycle mode-share figures, based upon the sub-sample sizes obtained in the post-BnR fieldwork

4.2.9 Given that rail patronage at the 120 BnR stations increased, on average, by +4% per year, between 2007/08 and 2010/11[8], the number of passengers accessing the railways by bicycle will have increased by more than is implied by the results in Tables 4.1 and 4.2, which assumes a constant footfall at each station evaluated.

4.2.10 The researchers are unaware of any national or TOC-specific changes in policy or scheme, other than BnR, that may have influenced station access mode-share, making the BnR scheme the most likely reason for the positive change in passenger behaviour at the 120 stations. Insight was obtained from the sub-sample of passengers who now cycle to the railway station but did not do so a year ago, confirming that aspects of the BnR scheme were the main reason for their change in travel behaviour. Of those passengers who switched to cycle following BnR:

- 78% of passengers referred to aspects of BnR as the main reason for cycling to the station now (39% improved cycle routes and greater feeling of safety, 28% better cycle parking, and 11% improved signing); and
- 28% referred to perceived reductions in quality of service for alternative station access modes (i.e. car travel costs increased, public transport quality decreased, etc).

4.2.11 In-depth interviews with a sub-set of rail passengers who said a year ago they did not usually cycle to the station but do now, and indicated that they had been partly or wholly influenced by the improved cycle facilities at the station:

> *"Cycle parking at the station had just been improved, six cycle lockers were added. This helped me to decide on the cycle/train option. Cycle is quickest and most convenient way to get to station and I have now sold the car" (Male, aged 45-54, Bingley).*

4.3 Overall Access Mode-Switch

4.3.1 Table 4.3 reports station access mode-share for walk, cycle, car and public transport modes, pre- and post-BnR, by TOC.

[8] *LENNON rail data for 120 BnR stations 2007/08 – 2010/11*

Table 4.3: Station Access Mode Share by TOC

TOC	% Pre-BnR	% Post-BnR	Overall Change ± %
Northern			
Walk	56%	61%	+5%
Cycle	3%	3%	+/-0%
Car	23%	24%	+1%
Public transport*	18%	12%	-6%
Merseyrail			
Walk	58%	44%	-14%
Cycle	8%	22%	+14%
Car	25%	20%	-5%
Public transport*	9%	14%	+5%
Virgin			
Walk	41%	45%	+4%
Cycle	7%	6%	-1%
Car	22%	27%	+5%
Public transport*	31%	22%	-9%
SWT			
Walk	42%	31%	-11%
Cycle	8%	17%	+9%
Car	27%	44%	+17%
Public transport*	23%	8%	-15%

**includes taxis*

4.3.2 In terms of access mode-switch, Table 4.3 suggests that where there has been a switch to cycling (i.e. at MerseyRail and South West Trains BnR stations), the switch of access mode has come mainly from rail passengers who previously walked, or travelled by public transport. This is similar to other cycle improvement projects. For example, the cycle hire scheme in London was estimated to see the largest mode shift occur from walking (34%) and also buses (32%), whereas car was estimated to account for only a small change (5%)[9].

4.3.3 This means that there is at present no indication that the BnR scheme has made any significant contribution to helping the rail industry to reduce carbon emissions or increase healthy activities, since the proportion accessing stations by car has remained the same. Indeed, at South West Trains' BnR stations there has been a significant increase in access by car, although it is understood that there has been no new parking policy or scheme introduced over the same period as the BnR programme, but there has been a general increase in patronage levels. [Note: a new multi-story car park has been constructed at Southampton Airport Parkway, operated by South West Trains, but this opened after post-BnR fieldwork was completed so is not considered to have had any material influence on the research findings].

[9] http://legacy.london.gov.uk/mayor/mayor-decisions/docs/20090617-md-347-delegation-power-cyclehire.pdf

5 Passenger Behaviour, Attitudes, Awareness and Profiles

5.1 Introduction

5.1.1 The short interviews with rail passengers and self-completion questionnaires obtained a variety of information about rail passengers including their:

- frequency of travel;
- attitudes and awareness of cycle facilities at stations; and
- profiles in terms of age and gender, for example.

5.1.2 Using this information, this chapter provides further insight about rail passengers that cycle to the station and compares this pre- and post-BnR. Post-BnR cyclists, includes those passengers that did not cycle a year ago but choose to cycle now because of BnR and/or other circumstances.

5.1.3 As previously mentioned in Chapter 1, in recognition of the potential bias with self-completion surveys, between those responding and passengers overall, the self-completion data was weighted to match overall passenger profiles, by station, according to gender, age and mode choice, as reflected in the short interviews.

5.1.4 For completeness, insights into the behaviour and attitudes of passengers who do not cycle to the station are contained within Appendix E.

5.2 Rail Passengers who Cycle to the Station

Frequency of travel

5.2.1 Table 5.1 shows the frequency of travel to the station by rail passengers who cycle to the station pre- and post- BnR. The information was obtained via the self-completion questionnaires.

Table 5.1: Frequency of Travel to the Station amongst Rail Passengers who Cycle

Frequency of Travel	% Pre-BnR	% Post-BnR	Overall Change +/-%
Base	**220***	**245***	
5 or more times a week	47%	57%	+10%
3 or 4 times a week	28%	17%	-11%
Twice a week	6%	5%	-1%
Once a week	5%	6%	-1%
Several times a month	7%	8%	+1%
Less frequently	7%	7%	+/-0%
Overall	**100%**	**100%**	

**weighted base*

5.2.2 The results in Table 5.1 suggest rail passengers that cycle to the station now travel more frequently compared to a year ago, with 57% now travelling 5 or more times a week, an increase of 10%.

Reasons why rail passengers choose to cycle to the station

5.2.3 Rail passengers who cycled to the station were asked why they choose to cycle. Table 5.2 compares results pre-and post-BnR.

5.2.4 The evaluation shows that rail passengers are now more likely to cycle to the station whenever they need to get to a station (+7%) as apposed to only cycling for certain journeys (-8%) and when the weather is fine (-8%). This suggests that cyclists, post-BnR, are more in the habit of cycling to their rail station, although they are also more likely to only cycle on a weekday (+8%).

Table 5.2: Circumstances Rail Passengers Choose to Cycle to the Station

Circumstance when Cycle	% Pre-BnR	% Post-BnR	+/-%
Base	**240***	**261***	
Whenever I need to get to the station	58%	65%	+7%
Only for certain journeys	17%	9%	-8%
Only on a weekday(s)	14%	22%	+8%
Only when the weather is fine	12%	4%	-8%
Depending on the season	0%	0%	+/-0%
Only at the weekend	0%	0%	+/-0%
Overall	**100%**	**100%**	

**multiple choice and weighted base*

Where rail passengers park their cycle

5.2.5 Table 5.3 compares, pre- and post-BnR, where passengers usually park their cycle.

Table 5.3: Cycle Parking Location

Parking Location	% Pre-BnR	% Post-BnR	Overall Change +/-%
Base	**218***	**243***	-
Within station grounds, using formal stands	69%	81%	+12%
I take my bike on the train	21%	14%	-7%
Within station grounds, using informal parking	4%	2%	-2%
Outside station grounds, using informal parking	4%	2%	-2%
Outside station grounds, using formal parking	2%	1%	-1%
Total	**100%**	**100%**	

**weighted base*

5.2.6 Table 5.3 confirms that rail passengers have changed where they usually park their cycle. In particular, more cyclists now choose to park there cycles within station grounds using formal cycle stands (81%) compared to before the implementation of BnR (69%). Rail passengers are now less likely to take their cycle on the train (-7%) or park informally within or outside the stations grounds (-2% and -1% respectively).

Distances cyclists' travel to/from their station

5.2.7 Rail passengers were asked to confirm the distance travelled between where they had just come from, if they were about to catch a train, or go to, if they had just got off a train. The results are presented in Table 5.4.

Table 5.4: Distance Travelled when Accessing the Station

Distance Travelled	% Pre-BnR	% Post-BnR	Overall Change +/-%
Base	**216***	**244***	-
Up to 1 mile	30%	44%	+14%
Over 1 mile and up to 2 miles	33%	20%	-13%
Over 2 miles and up to 4 miles	16%	16%	+/-0%
Over 4 miles	21%	20%	+1%
Total	**100%**	**100%**	

**weighted base*

5.2.8 The evaluation confirms that the proportion of rail passengers that cycle distances of a mile or less has increased (+14%). This can be linked to a significant number of rail passengers who now choose to cycle, to/from their station, switching from walk as their main mode of travel (as previously discussed in section 4.3).

5.3 Cyclists' Attitudes and Awareness of Cycle Facilities

5.3.1 Rail passengers were asked about their awareness of a range of cycle facilities available at the station they use including cycle parking and information on cycle facilities and routes. The results are presented in Table 5.5.

Table 5.5: Awareness of Facilities

Type of Cycle Facility	Base	% Pre-BnR	Base	% Post-BnR	+/-%
Cycle parking at the station	**217***	86%	**245***	95%	+9%
Information on cycle facilities	**210***	20%	**231***	26%	+6%
Cycle signing to/from and at the station	**211***	7%	**228***	16%	+9%
Local cycle routes/lanes to/from the station	**210***	5%	**228***	10%	+5%
Cycle hire/repair services	**209***	1%	**228***	4%	+3%

**weighted base*

5.3.2 The evaluation confirms that passengers are now more aware of the cycle facilities available at their station compared to before the BnR programme was implemented. In particular, 95% of rail passengers that cycle to stations are aware of cycle parking at the station, an increase of +9%.

5.3.3 To understand satisfaction levels, passengers were asked to rate a number of selected cycle issues according to a 5 point scale between very satisfied or very dissatisfied. The results show that, in most cases, passengers who cycle are now more satisfied with cycle issues at their station, as shown in Table 5.6.

Table 5.6: Satisfaction with Cycle Issues

Cycle Issue	Base	% Pre-BnR Satisfied	Base	% Post-BnR Satisfied	+/-%
Ease of access to cycle facilities at and around the station	**214***	57%	243	70%	+13%
The quality and security of cycle parking at the station	**215***	37%	243	63%	+26%
Your personal safety whilst cycling to/from the station	**215***	36%	242	44%	+8%
Information about cycle facilities at and around the station	**213***	29%	241	41%	+12%
The quantity of adequate cycle parking at the station	**215***	17%	245	37%	+20%
The amount of directional signing to/from and at the station	**215***	32%	242	23%	-9%
The usefulness of directional signing to/from and at the station	**215***	28%	242	19%	-9%
The extent and quality of cycle routes to/from the station	**215***	11%	243	12%	+1%

**weighted base*

5.3.4 Table 5.6 shows a majority of passengers who cycle to the station are now satisfied with the ease of accessing cycle facilities (70%) and the quality and security of cycle parking at the station (63%). This was also brought up in the qualitative interviews:

> *"Cycle parking is easy to access, the system is easy to use and the cycle cages are reasonably secure". (Male, aged 35-44, Rock Ferry).*

> *"Now I can use Bingley station - I didn't want to before as the cycle parking was poor. There is safer, better/more parking now. It is more convenient now being able to use my local station. Before I used to cycle to Leeds or Shipley, just to use the cycle parking". (Male, 45-54. Bingley).*

> *"It is now under cover which is a great bonus as it stops my bike rusting. Also, the parking area is visible from the road so more of a deterrent for thieves. Anyway, it feels more secure". (Male, 26-34, Weeton).*

5.3.5 Cyclists are also more satisfied with the quantity of adequate cycle parking at the station now (37%), compared to before the implementation of the BnR programme (17%).

5.3.6 It appears that passengers are however less satisfied with the amount, and usefulness, of directional signing, with satisfaction decreasing by -9% for both cycle issues. Findings from the station inspections confirm that signing of cycle routes is provided at all stations where cycle routes were observed. Lower levels of satisfaction suggests signing could however be

improved (the quality or appropriateness was not recorded during the station inspection). Indeed, one of the qualitative interviews highlights this:

"There needs to be better signing; painted cycle path perhaps? Access needs to be more "cycle friendly" to rear of station". (Male, aged 35-44, Richmond).

5.3.7 The qualitative interviews also confirm signing is just not available as some stations:

"*I am not aware of any signing*". *(Male, 60-64, Walton on Thames).*

5.3.8 It should also be borne in mind that rail passengers who now choose to cycle to the station may not be aware of signing available at their station.

5.3.9 The qualitative interviews with rail passengers gave further evidence of satisfaction with cycle facilities at the station:

"The cycle parking is next to the platform which makes it quicker than driving. It is secure as it is close to the platform and is also covered by CCTV, I think? I know I will always get a space as there is plenty of parking" (Female, 26-34, Southampton Airport Parkway).

"Yes, the new facility is available and I prefer it." (Female, aged 26-34 Sandal and Agbrigg).

5.3.10 Whilst a majority of passengers are satisfied with cycle facilities, this is not a consensus:

"It has got worse. They have built a compound which has made less available space outside it. There is no information on how to get access to the compound, whether there is a charge etc. The compound obscures the view of those bikes that are not in it. You see men hanging around in this area, giving concerns for the security of your bike. The lighting is poor or not working, bad for women, young girls after dark - even I feel uneasy. It is very smelly as the area is used by men, especially taxi drivers, as a toilet". (Male, 35-44, Surbiton).

"Only 6 lockers, sometimes all full in the better weather (ok in winter). I worry that I may have to use Sheffield stands if all lockers already taken". (Male, 45-54, Bingley).

"I don't think anything has improved for those who don't want to use the cage. We need statistics on cycle theft inside/outside the cages. If it is proven that the cages are statistically safer then they will be worth using them". (Male, 70+, Surbiton).

5.4 The Profile of Cyclists

5.4.1 Table 5.7 and 5.8 show the age breakdown of male and female cyclists respectively, that cycle to the station pre- and post-BnR.

Table 5.7: Breakdown of Male Cyclists by Age

Gender	Age	% Cycle to Station Pre-BnR	% Cycle to Station Post-BnR	Overall Change +/-%
	Base	**50**	**107**	
Male	<31years	42%	41%	-1%
	31-59yrs	52%	51%	-1%
	60+ years	6%	8%	+2%
Total		**100%**	**100%**	**100%**

5.4.2 Table 5.7 shows there has been no significant change in the age profile of male cyclists pre- and post-BnR.

Table 5.8: Breakdown of Female Cyclists by Age

Gender	Age	% Cycle to Station Pre-BnR	% Cycle to Station Post-BnR	Overall Change +/-%
	Base	**21**	**25**	
Female	<31years	52%	48%	-4%
	31-59yrs	33%	44%	+11%
	60+ years	14%	8%	-6%
Total		**100%**	**100%**	**100%**

5.4.3 The results in Table 5.8 suggest a change in the proportion of females cycling aged 31-59 years old (+11%).

5.4.4 At an overall level, the results confirm that more men are now cycling to/from their station (+7%), following BnR, whereas the proportion of women who cycle to/from their station has remained unchanged.

5.5 Further Cycle Improvements

5.5.1 Through the qualitative research rail passengers were invited to suggest further improvement to cycle facilities at the station. It should be noted that the qualitative findings were undertaken with a smaller sub-set of rail passengers, with the majority using South West Trains' services. Therefore, the opinions expressed are not considered representative of all rail passengers using the station, and there are more recommendations associated with South West Trains because of the fact that a larger sample of interviewees travelled with them:

"The station needs more cycle stands which don't all have to be covered. There are insufficient spaces because all are taken by 7am. Also, cycle paths would be useful and potholes of local roads need repairing. There has been a marked increase in the incidence of cycling but the authorities have not kept up with the pace. There should be more signing and facilities for cycle parking in towns as well as at stations. Perhaps cycle hire and blue routes would be appropriate like they have in London". (Male, 60-64, Walton on Thames).

"Yes, possibly one improvement: The turning into the car park is awkward, busy with people, buses, cabs, and you have to cross the traffic lights. A ramp could be installed instead of steps from Church Road. Instead, people use railings at the front of the station rather than going round to the cycle parking at the back". (Male, aged 35-44, Richmond).

"1. There is a roof but the cycle shelter is open to the weather from front and back; it would be better if it was enclosed - I sometimes come back to a wet saddle! 2. It is difficult to get from the cycle facilities onto the road. There is a zebra crossing, cars wait, then I cycle off in front of them which they don't like! 3. The cycle storage is open to the road on one side so I have some concerns about security although I believe there is CCTV. 4. You have to know where cycle parking is as there is no signage whatsoever". (Female, 26-34, Southampton Airport Parkway).

"Access to the station should be improved - it is a major route, I would like a cycle route but realise it is impossible as there is no space on the road. The capacity of cycle parking is about right as it is now fully used. It used to be just me, now there is regularly one other and frequently another two bikes parked there". (Male, 26-34, Weeton).

"A lot has been done in the past year. More people are definitely using the facilities, some days it is virtually full. But there is no bike routing to station. This could be improved". (Male, 45-54. Bingley).

"A cycle path/shared-use path would be good as it is a busy road to the station. Cycle parking on both sides of the station would be better. Currently parking is only on one side at the moment". (Female, 26-34, Starbeck).

"Get rid of the cycle lockers, or mend them. Children are able to get inside where they are broken and vandalise the cycles. I know where I'm going so I don't need signs, but others might find them helpful." (Female, aged 26-34 Sandal and Agbrigg).

"There is a high level of theft as the cycle parking is not secure - CCTV would help. I have a big moan – I used to be able to take bikes on the train but some trains only take 2 bikes. I have missed the train when trying to put my bike when there are already two bikes on-board. The train won't wait while you lock it up, and you don't know if there is space before the train arrives. I now have two old bikes, one at each end of the train journey. I don't park my good bike". (Male, 60-64, Brockenhurst).

6 Conclusions and Recommendations

6.1 Key Findings

6.1.1 The BnR programme has enabled Northern Rail, Merseyrail, South West Trains and Virgin Trains to fund a range of infrastructure improvements to increase cycling to their stations:

- +2,800 new 'standard' cycle parking spaces.
- +1,161 'secure' cycle parking spaces.
- +48 cycle locker spaces.
- +310 bikes for hire.
- +3 cycle hubs providing cycle hire and maintenance services.

6.1.2 Our comparison of pre- and post-implementation audit figures showed there has been **an increase in cycles parked of 12%**. This means an additional 180 cycles were parked at the time of the post-audits, from a benchmark of 1,457 cycles parked at stations prior to BnR.

6.1.3 At a TOC level, this represents:

- **Northern**: a 48% increase in cycles parked (increasing the total number of cycles parked from 56 to 83 following BnR).
- **Merseyrail**: a 123% increase in cycles parked (increasing cycles parked from 26 to 58).
- **Virgin Trains**: zero increase in cycles parked in cycles parked (probably due to our fieldwork being undertaken immediately after installation, and possible during a period of cycle parking transition).
- **South West Trains**: a 10% increase in cycles parked (increasing the total number of cycles parked from 1,214 to 1,340 cycles following BnR).

6.1.4 At an overall level, the evaluation of the survey findings has suggested that the BnR programme has led to a **6% increase in rail passengers travelling to or from their station by cycle (i.e. doubling cycle mode share from 6% to 12%)**. At a TOC level, this represents:

- **Northern**: a 1% increase in cycle access mode share to 4%.
- **Merseyrail**: a 14% increase in cycle access mode share to 22%.
- **Virgin Trains**: no change in mode share, remaining at 7%.
- **South West Trains**: a 9% increase in cycle access mode share to 17%.

6.1.5 In general, the greater the scheme implemented, the more significant impact on cycle access to the station.

- Small (10 or less cycle parking stands): **minimal** change in cycle access mode share.
- Medium (11-39 cycle parking stands/secure cycle parking: **+5%** change in cycle access mode share.

- Large (40+ cycle parking stands/secure cycle parking spaces &/or cycle hire/hub): **+17%** change in cycle access mode share.

6.2 Recommendations for Future Evaluation of Similar BnR Schemes

6.2.1 The evaluation combined a random passenger interview survey and an audit of cycle facilities before and after scheme implementation, and we consider that this is the most appropriate method for future evaluations of this type of transport scheme.

6.2.2 In principle, future evaluations must:

Before the evaluation

- Define evaluation indicators (e.g. cycle parking counts, mode choice and mode shift, levels of satisfaction).

Data collection

- Conduct a pre- and post-audit at every station where new BnR facilities are introduced.
- Obtain station access mode information from a representative sample of passengers at the station, pre- and post-implementation (with the larger schemes only, if budget constraints).
- Collection of data should be undertaken in neutral (or more cycle friendly) months (e.g. April, May, June, September and October).
- Passenger interviews should be very short (1 minute only) to ensure the maximum response rate. Additional information must be captured through a follow-up survey of some kind.
- Post-implementation data collection undertaken after 1-2 years, and at the same time period as per baseline data collection.

Data weighting

- To ensure that the evaluation of the BnR facilities at stations correctly takes into account the number of passengers who have the opportunity to experience them at each station, the data obtained from the representative sample of passengers responding to the short interviews should be weighted by station-specific passenger footfall.
- In recognition of the potential bias with self-completion surveys, between those responding and passengers overall, self-completion data should be weighted to match overall passenger profiles, by station, according to gender, age and mode choice, as reflected in the short interviews.

6.3 Recommendations for Future BnR Schemes

6.3.1 BnR has shown that significantly improving the quality and quantity of cycle parking at stations can reduce the need or at least help manage the current provision of cycle carriage on trains. It provides a practical and feasible way of managing the needs of cyclists for

TOCs. It is therefore recommended that an increase in cycle parking and cycle hire infrastructure be considered at all sites where cycle carriage is an ongoing issue of concern or where terms of condition of cycle carriage have had to be altered. It is also recommended that increased requirement for such facilities are included in new franchise agreements, to ensure future provision for cyclists and reduce possible conflict between growing passenger numbers and the growing popularity of cycling as an access and egress mode.

6.3.2 Good cycle parking at a station can increase the use of cycling as an access mode. However this evaluation suggests that, in the short term at least, the conversion to cycling as an access mode is likely to be largely at the cost of walking and public transport mode share rather than by car access to the station. Therefore, it is recommended that cycle parking should not be increased at the expense of reducing car parking facilities.

6.3.3 Increasing customer loyalty to the rail mode is likely to benefit from improvement of cycling infrastructure, as this evaluation indicates that such improvements increase regularity of passenger use of the station. Therefore, where increased customer loyalty is a goal, it is recommended that such improvements be considered as part of an overall strategy in achieving this aim.

6.3.4 This study also shows that schemes similar to the BnR will increase satisfaction amongst those rail passengers who also cycle, which could help to meet key indicators and contribute to TOCs' existing commitments. However, whilst this is likely to be the case whatever the scale of scheme implemented, perceptible improvements in satisfaction are only likely at stations where large BnR schemes have been implemented, due to the greater numbers of passengers affected as well as the increased degree of raised satisfaction large scale improvements will lead to. Where passenger satisfaction is therefore a key driver and there is the demand for such improvements, a large scale cycle infrastructure programme should be implemented.

6.3.5 It is worth pointing out however that a large amount of small schemes combined across a network do produce an increase in access by cycle roughly in the same numbers as a few large schemes and provide a valuable contribution in terms of creating more equitable and easier accessibility to more stations for passengers. Therefore, whilst the benefits of large scale improvements will be more clearly perceptible (and measurable), smaller scale programmes of improvements should not be discounted, as these will deliver meaningful benefits to customers.

6.3.6 Responses to the BnR evaluation also showed the need for greater investment in cycle infrastructure in and around the station by local authorities, including signing, access and routing issues. Partnership with government / highway authorities should be created when implementing cycle infrastructure at stations to add value both on- and off-site in order to create a better overall cycling environment around the station and likelihood of increased cycle access.

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