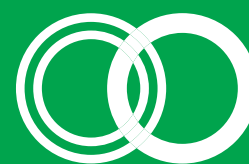




CYCLE-RAIL TOOLKIT 2

APRIL 2016

Rail Delivery Group



**Cycle
Rail**
Working
Group

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FOREWORD BY MINISTER OF STATE FOR TRANSPORT



Cycle-rail continues to be a success story. In 2015, 47 million rail journeys included a bike, which is a significant increase of around 40% since 2010. The industry is beginning to appreciate the requirement for more sustainable travel to and from the station and the need to give people more choice to make greener travel options. This can help trips to and from the station be more reliable, while easing congestion on our roads and improving air quality.

That is why I am delighted to provide the foreword for this updated version of the Cycle-Rail Toolkit. Train operators and Network Rail are delivering cycle improvements across the network, and this toolkit will help ensure that high-quality infrastructure is in place to support the anticipated increase in cycle-rail journeys.

The first Cycle-Rail Toolkit was published in July 2012 and was extremely well received by those implementing cycle-rail facilities across the rail network. This update seeks to enhance the work of the original by showing changes in best practice and lessons that can be learned. It also looks to good examples in other European countries such as Belgium and the Netherlands.

This toolkit will provide train operators with the knowledge to embed cycle-rail provision firmly within their business objectives by explaining how to provide for cyclists, how to encourage new users and how to promote and market their facilities to ensure that maximum benefits are gained. It will help to ensure that cycling to stations becomes easy and convenient and the natural choice for short trips to the station.

This is essential if we are to meet our manifesto commitment to double the number of journeys made by bicycle. Later this year we will be publishing the first-ever Cycling and Walking Investment Strategy. As is required by the Infrastructure Act 2015, the strategy will set out our objectives and the activities and funding available for cycling and walking in England in the long term. To support this and to ensure that using the bike becomes the preferred travel option, we are investing more than £300 million to make cycling safer and more convenient.

But we can't meet our commitments without the help of others. The rail industry as a whole clearly recognises the important role cycling plays in our growing railway. And they have an important future role in promoting cycle-rail and providing a safe and secure environment for cyclists.

So I welcome this updated toolkit that acknowledges existing good practice, much of which is the work of winners at the annual Rail Delivery Group (RDG) Cycle Rail Awards. These schemes not only give people choice on how they travel to and from the station, but also improves the overall customer experience and firmly establishes the role of stations in promoting increased cycle use.

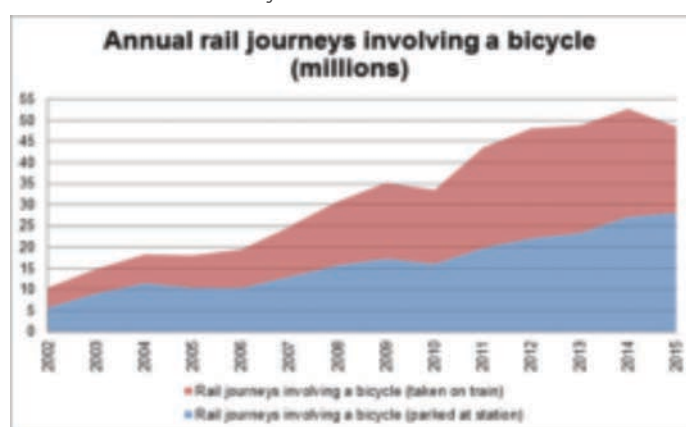
A blue ink handwritten signature, appearing to read 'R Goodwill', written over a light blue circular background.

ROBERT GOODWILL MP

1. INTRODUCTION

1.1 BACKGROUND

The rail network delivers 2.5 million people a day into Britain's biggest cities and towns. Over the next 30 years this figure is expected to double¹. For this growth to be sustainable, the importance of cycle-rail as part of the seamless door-to-door journey can only increase. Since this toolkit was first published, cycle trips made to and from rail stations have grown considerably, with close to 50 million trips a year. This makes cycle-rail, as it is called, one of the fastest growing segments of cycle use in the UK in modern times. The number of cycle rail journeys in which a bicycle is parked at a station has increased by 75% since 2010.



Source: TRL analysis carried out as part of a DfT funded research project. Publication due 2016

Much of this growth is thanks to investment in cycle-rail projects by individual train operating companies (TOCs) and Network Rail working in partnership with national and local government. The benefits to society have been rigorously examined² using the Department for Transport's (DfT) transport methodology. This shows the money spent will generate a return of anything up to twice that for investment in improvements to urban transport networks and inter-urban corridors³. These results are explained in greater detail later.

The station surveys found that 91% of cyclists, compared to 68% of non-cyclists, were commuters, and their average access trip distance was 3km. This is consistent with other research that shows that cycle-rail is particularly associated with commuter journeys in areas with compact catchment areas. In comparison, 36% of car drivers in the survey were only travelling up to 3km to the station, and 46% were only travelling up to 4km. A fifth of current cyclists previously drove, and a similar proportion of current drivers would consider cycling. The survey also found that cycle parking improvements led to increased customer satisfaction for both cyclists and non-cyclists.

Understanding the business case for investment in cycle-rail – demand modelling and cost benefit analysis TRL RSSB 2015

¹ Britain's Future Britain's Railway Rail delivery Group 2015

² Understanding the business case for investment in cycle-rail TRL RSSB 2015

³ Eddington Transport Study 2006

With cycle parking at stations such as Woking and Chelmsford full within days of opening, the case is clear: past investment is worthwhile and future funding is justified.

1.2 THE PURPOSE OF THIS DOCUMENT

"Having access to a document that outlines not only the steps to be followed in delivering a successful cycle project, but also opens your eyes to the bigger picture, is an invaluable tool for any project manager. By referring to the Cycle-Rail Toolkit at the planning stage we were better prepared for all aspects of the project, as it shaped our procurement strategy, installation design and even our signage requirements. Also, the case studies and identified pitfalls enabled us to avoid some basic mistakes and to deliver a project that not only met our existing customers' needs, but also encouraged increased usage."

Keith White, Chiltern Railways

This document builds on the success of the original, well received, Cycle-Rail Toolkit published in 2012. Its advice is not mandatory but shows what good practice looks like. It is also a reference for those delivering measures that encourage greater numbers of people to choose cycle-rail and support those who do. This edition aims to share the experience gained over the past three years by drawing upon the knowledge gained from projects delivered by individual TOCs and others during that period. These were considerable in scale and scope, with over 75,000 cycle parking spaces in place or programmed. At the time of writing, 30 cycle hubs at stations have been created and 12 more are on their way. Also provided were 1,400 hire cycles. Partnership funding from bodies such as the individual TOCs, the DfT, Network Rail, and other sources such as local authorities delivered these projects. In some cases, there may be mandatory counter terrorism security requirements to be met for cycles and their storage (see Appendix B).

Guidance in the first edition that still holds good remains largely unchanged. However, do not assume that nothing has altered as new information is in all sections.

The document is aimed primarily at network and station operators, as well as organisations bidding for rail franchises. However, the intended audience also includes passenger transport executives (PTEs), local authorities and those involved in community rail projects. Also, for the first time, more comprehensive advice is provided on the physical carriage of cycles to benefit those engaged in commissioning new rolling stock or refurbishing existing carriages. Above all, the measures provided to facilitate and encourage cycle-rail should be customer facing to meet the needs of all station and rail users.

Principle 1— Customer focused

Build an inclusive culture in which the needs of all customers are placed at the heart of every station.

Vision for Stations – Nine principles for the future of Britain’s stations, Rail Delivery Group 2015

New to this document is an expanded section on the carriage of cycles on trains. This describes the legislative, franchise and conditions of carriage. It deals with the principles that govern designing for the carriage of cycles, including issues of flexible space, safely sharing it with others and delivering clear concise signage to explain priorities for use of the space.

1.3 HOW THIS DOCUMENT IS SET OUT

This toolkit sets the context and demonstrates the case for cycle-rail. It explains how to provide for existing users, and encourage new ones, by meeting their needs as part of a seamless door-to-door journey. To do this it follows the logical path of the trip to the station followed by entry to and movement within it. Once there, the full range of potential services such as cycle hire, cycle hubs and cycle parking that support and encourage cycle-rail is discussed in detail. Chapters also address the need to manage, maintain and monitor the measures provided. Next comes an explanation of how working in partnership with stakeholders can help identify sources of external funding and contribute to activities such as monitoring use and satisfaction.

The final chapters highlight the need to innovate and share stories of success through the annual RDG (formerly ATOC) Cycle-Rail Awards and an acknowledgement of the help received in preparing this toolkit.

Ten appendices are included on:

- A. Useful sources of information
- B. Wider counter terrorism security considerations
- C. Cycle storage facility checklist
- D. Cycle parking diagrams
- E. Cycle parking assessment parameters
- F. Cycle parking audit forms
- G. Potential partners
- H. Cycle envelope
- I. Designing for cycle carriage – best practice
- J. RSSB Safety Design Guidelines

2. CONTEXT: WHY CYCLE-RAIL IS IMPORTANT

2.1 CYCLE-RAIL BENEFITS THE RAIL INDUSTRY

Cycling to rail stations as part of the door-to-door journey is a growing trend. It brings sustainable access to the rail network when demand for rail travel is increasing and the potential for enhanced profitability for network and station operators. For the user, aside from walking, cycling to the station consistently offers the most reliable journey time. It is often the fastest for short trips, as it is least affected by delays caused by congestion. It is also available door to door with no waiting around for a taxi or risk of missing a connection if late.

Although 60% of the UK's population live within a 15-minute cycle ride of a railway station, the proportion of rail journeys involving a bicycle is still below 5%, lower than in many mainland European neighbours. Nonetheless, with a 75% increase since 2010 in the number of rail journeys involving bicycles parked at the station, it is clear that people are willing to take up cycling if good facilities are provided.

While the total number of people using the rail network has increased, the growth in cycle-rail activity has grown even faster⁴. Although using sustainable forms of transport would be good, new rail passengers are likely to want to drive to the station. One disadvantage is that rising passenger numbers increases the competition for available car parking spaces. Clearly, not being able to park could limit growth in this market. Encouraging existing passengers to cycle as part of their journey can free up car parking for new customers. This creates a win-win situation for network and station operators. It increases footfall, while managing localised congestion around stations and in turn, ticket sales and profitability.

Many rail stations do not have the physical space to provide more car parking. Parked bicycles, though, make more efficient use of space: one car parking space easily accommodating eight bicycles.

Bike and Rail 2004

Stations being developed to create a destination in their own right, e.g. for shopping, dining and other activities, need to take account of how customers and those working at businesses within the station can be encouraged to reach it in a sustainable manner. Otherwise, demand for car access for these services could create competition for car parking that would otherwise be used by passengers.

It is clearly beneficial to encourage as many motorists as possible to convert to cycling, not only because it is carbon-friendly but also because a parked cycle consumes far less space than a car. A cycle is also far cheaper to store, with a double-deck cycle rack costing about £300 compared to £6-10,000 for a new car park space.

Better Rail Stations Report 2009



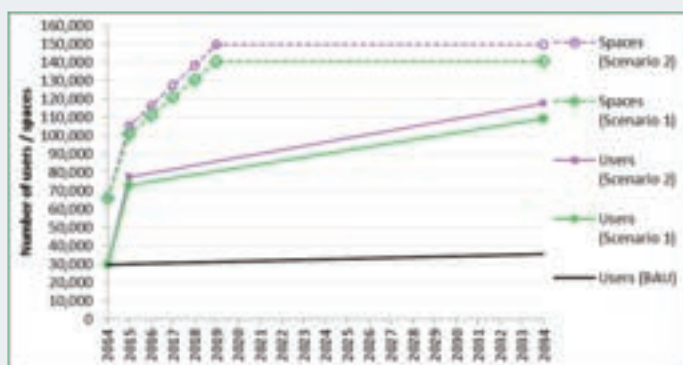
Cambridge station is an exceptional case but imagine how much room would be taken up by a similar number of car parking spaces and at what cost?

Encouraging cycle-rail can open up a new market for access to stations by sustainable transport. Cyclists can easily travel up to four times as far as a pedestrian in the same time, so the potential catchment area is up to 16 times larger.

What of the future? Demand modelling shows the number of cyclists to rail stations could be greatly increased. To meet demand for cycle parking, the current number of spaces would need to be increased by approximately 120%. This could lead to an increase of over 160% in cycling to the station in the short term and cyclists' numbers more than tripling over 20 years⁵.

⁴ 52% increase in cycle-rail journeys compared with 32% growth in passenger numbers from 2010 to 2015 – based on ATOC and Office of Rail and Road (ORR) figures

⁵ Understanding the business case for investment in cycle-rail TRL for RSSB 2015



Predicted increase in cyclists generated by increasing cycle parking spaces compared to not meeting demand¹

Scenario 1 – based on un-met demand and rail growth

Scenario 2 – includes a 10% further generation factor
(Figures based on a conservative but robust prediction)

In summary, encouraging more cycle-rail could deliver a sustained and sustainable increase in network and station access and profitability. At the same time, it will contribute to national and local government's sustainable transport goals and a TOC's corporate social responsibility and sustainability objectives.

We also want to make journeys to and from our stations simpler and greener, by providing easily accessible interchanges with other forms of transport, such as buses and bicycles.

Network Rail Corporate Responsibility Report 2011

2.2 IDENTIFYING THE MARKET FOR CYCLE-RAIL

Market segmentation helps identify the target audience to be encouraged to cycle to stations. Fortunately, many of those who travel regularly by train are the most likely to cycle.

93% of cyclists, compared to 68% of non-cyclists used the train two or more times a week.

91% of cyclists compared to 68% of non-cyclists were commuters.

Understanding the business case for investment in cycle-rail TRL for RSSB 2015

Like all passengers, cyclists' reasons for travelling will vary, as will their age, affluence and physical ability. Nevertheless, regular rail users mostly consist of commuters and business travellers. According to figures from Transport for London (TfL), 80% of those arriving at London rail termini from outside London on weekdays are travelling to their normal place of work.

Over 50% of the cycle market is comprised of individuals living in postcodes categorised as 'urban living' and 'suburban lifestyles'. People in these segments tend to be well educated, reasonably well off and tend to cycle for leisure as well as for commuting to work.

Central London Rail Termini Report, TfL 2011

Other types of cycle-rail markets should not be forgotten. Those who travel for leisure also bring with them opportunities to encourage cycle-rail. Encouraging tourism and leisure travel in off-peak periods is well established. In some cases, promoting direct link-ups with cycle hire and cycle tourism operators can encourage new markets in new areas, again increasing footfall and profitability.

2.3 MAKING A BUSINESS CASE

Any commercial investment needs to be justified through a robust business case. The report Investment in Cycle Facilities at Rail Stations prepared for the Cycle Rail Task Force in 2009 provides guidance. It concludes there is a clear case for public sector investment funding because gains in such areas as health and journey time provide substantial Benefit-Cost Ratios (BCRs) for justifying government investment. Therefore, it is recommended that all profits generated by cycle-rail projects should be re-invested to further increase this activity.

Since then it has been identified⁷ that further investment in cycle-rail will result in BCRs that range from 2.21 to 9.53 to 1, with an average of 3.6 to 1, principally because of the benefits to society from increased physical activity and reduced congestion⁸. These figures do not tell the whole story, because the commercial benefits that would accrue are not quantified. To do so it would be necessary to give a value to those who would give up travelling by train if they could not cycle to the station and how much capacity would be freed up for new passengers. The last is particularly important as new rail users prefer to drive to the station and half of station car parks are at least 75% full⁹.

Comparing the above BCRs with those of the DfT for investment in transport proposals investing¹⁰ in cycle-rail compares favourably with other projects. Proposals are judged on their value for money (VfM) based on these BCR boundaries:

- Poor VfM if BCR is below 1.0
- Low VfM if the BCR is between 1.0 and 1.5
- Medium VfM if the BCR is between 1.5 and 2.0
- High VfM if the BCR is between 2.0 and 4.0
- Very High VfM if the BCR is greater than 4.0

The predicted BCRs¹¹ for the regions based on current and future demand and extrapolated from current trends are:

REGION	BCR
East	4.89
East Midlands	7.86
London	2.21*
North East	9.53
North West	4.65
Scotland	4.44
South East	5.27
South West	6.06
Wales	3.91
West Midlands	6.17
Yorkshire	6.46
All regions	3.62

*Note: London may be considered as a special case (although it still represents High VfM), unrepresentative of the other regions due to lower car private car ownership and use¹². Taking it out of this list would result in a BCR of 5.12 or very high value for money for the remainder.

Individual business cases will need to be considered as part of a TOC's overall strategy for passenger growth and cycle-rail's role in facilitating access to stations (see below).

The average BCR calculated was 3.6:1, but with significant regional variation: approximately 4:1 to 9:1 outside London, where a greater proportion of modal shift comes from car travel. In London, where car use is lower so modal shift is more likely to come from walking or other public transport, the figure is 2.2:1. This still represents good value for money however, and the BCR does not include benefits resulting from freeing up capacity on public transport for short journeys.

¹⁰ Value for Money Assessment: Advice Note for Local Transport Decision Makers, DfT 2013

¹¹ Understanding the business case for investment in cycle-Rail, TRL for RSSB 2015

¹² Based on figures from Table NTS9902, which gives car/van ownership per household in 2013/2014 for London at 0.78 compared to the rest of England (excluding London) at 1.22. Household car ownership by region and Rural-Urban Classification: England, 2002/03 and 2013/14, Department for Transport Statistics 2015

Cycle-Rail Fund – protocol

Bids made to the Cycle-Rail Fund will be judged on their BCR. TOCs must therefore submit details of an economic business case, among other requirements, in accordance with the bidding protocol. Details are available from RDG.

2.4 A VISION AND STRATEGY FOR DELIVERY

Cycling strategy

The delivery of cycle-rail should begin with it being embedded in a TOC's business objectives at the highest level. To ensure effective delivery, it is recommended TOCs draw up their own cycle-rail strategy setting out, as a minimum:

- Clear objectives and deliverables
- How they will be achieved and
- A robust, costed action plan setting out timescales.

The first step is recognising that staff will have to draw up the strategy and see through the delivery of travel plans, promotion of hubs and management of parking. Experience shows that a TOC's success in this area is directly linked to having a dedicated integrated transport manager who can champion cycle-rail activity and develop and deliver effective projects. The highly successful efforts of TOCs who have taken this approach, such as Northern Rail and South West Trains, are clearly reflected in the Bike 'N' Ride¹³ report and RDG's Cycle Rail Awards.

When funds for cycle-rail projects become available and central government and other bodies invite bids, the successful projects are often those that have been worked up, costed, and in the drawer ready to be implemented.

¹³ Bike 'n' Ride, MVA Consultancy for ATOC 2011

CASE STUDY – CYCLING STRATEGY, ABELLIO GREATER ANGLIA

This document sets out the company's aims to:

- Establish itself as vigorous a supporter of cycling's development as a sustainable transport mode
- Promote the health, environmental and societal benefits of cycling to customers
- Explain the various cycling facilities available across its networks and work in partnership to expand them
- Clearly outline the behaviour expected from cyclists using its services, ensuring they travel safely and conflict-free
- Engage with local stakeholders to create meaningful partnerships as the only way to make improvements.

To achieve these aims the strategy contains the following actions:

- Provide details of new services to customers, including CyclePoint and CyclePark PLUS, and hire through the Abellio Bike&Go scheme
- Create a prioritised list of proposals to increase the capacity for cycle parking at many stations, to meet growing demand
- Emphasise security in proposals for cycle parking, developed through partnership with British Transport Police
- Emphasise counter terrorism considerations in proposals for cycle parking by getting advice from the TOC Nominated Security Contact (NSC) and DfT Land Transport Security team

- Recognise clarity in communication with and presentation to customers is needed about the facilities they should expect at stations
- Policies need to be clear on carriage of cycles on trains and how it is proposed to tackle the conflict between this and growth in passenger numbers
- Commit to partnership working, with cycling groups nationally and locally, and with local authorities, through the Abellio Greater Anglia Cycle Forum to shape the delivery of the strategy.



3. ENCOURAGING CYCLISTS BY MEETING THEIR NEEDS

3.1 THE JOURNEY TO THE STATION

Like all passengers, cyclists want direct, convenient and safe routes to the station that involve minimal delay. Routes should, therefore, deliver:

- Direct, convenient, safe, well signed links to and from residential areas and employment centres within an easy cycling distance of 3 miles (5km)*
- Improved journey time compared with other modes through greater permeability e.g. exemption from traffic regulation measures such as banned turns, one-way streets etc.*
- The removal of barriers to cycling along the route, including those caused by traffic conditions outside stations*
- Easy access to the station and cycle parking.

* Note: It is not the intention to detail what needs to be done to deliver these elements: they should be determined for each individual station through partnership working with the local highway authority and other stakeholders (see working in partnership page 50).

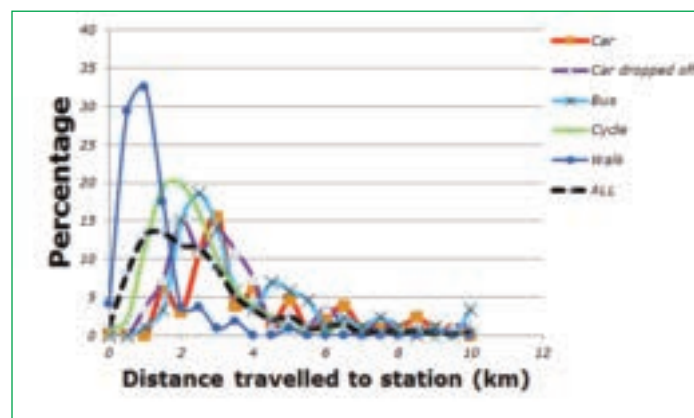


Permeability provided by cycle access to a one-way street and signs to the station

The rail industry cannot deliver all the elements that lead to an increase in cycle-rail but it can often deliver many through partnerships with local authorities and Public Transport Executives (PTE). Highway network improvements can be funded in various ways, including the local authority's Local Transport Plan and, where appropriate, development generated funding such as the Community Infrastructure Levy (CIL).

Travel distances

When examining routes to the station take into account surveys saying that 91% of those cycling to the station are commuters and the average distance cycled is 3km¹⁴. While a small number of cyclists may regularly travel greater distances, anything over 5km is unrepresentative of the primary audience for cycle-rail.



Mode	Average (km)	Average (Miles)
Walking	1.2	0.175
Cycling	3.0	1.9
Bus	4.8	3.0
Car drop off	6.9	4.3
Car	9.3	5.75

3.2 OUTSIDE THE STATION BUILDING

Many stations are located in town and city centres and face challenges when trying to meet the different, and sometimes conflicting, needs of those who walk, take a taxi, catch a bus, drive or kiss-and-ride. Adding more cyclists to this mix requires that infrastructure catering for other traffic should not form a physical barrier to cycle use. The needs of cyclists are similar to pedestrians' so benefits provided for each can often be shared. The government's Cycling and Walking Implementation Strategy (CWIS) recognises the importance of cycling and walking access to major transport hubs, such as rail stations, and requires local authorities to prepare strategies to address this.

If a road approaching the station is not a public highway, for example owned by Network Rail, a partnership with the local highway authority and the landowner can include measures that would improve access for cyclists:

- New accesses cut through existing walls/boundaries for the benefit of both cyclists and pedestrians
- Exemptions from banned turns, one way working etc.
- Segregation from other traffic
- Flush dropped kerbs
- Specially marked routes through car parks etc.

3.3 ROUTES INTO AND WITHIN THE STATION BUILDING

Dutch experience suggests that cycle parking is best located outside the station as close as possible to the main entrance on the direct line of the cyclist's approach. It can also be delivered within the station building or on the platform subject to any applicable counter terrorism security considerations (see Appendix B). Entry doors to the station building should open automatically when approached. In the station, routes to and from cycle parking should be step-free and provide a smooth flow that minimises interaction with pedestrians and station vehicles.

Where possible, the location of parking and routes within the station should aim to minimise interaction between cyclists and pedestrian traffic at peak times.



Cyclists' movements will often be the same as those on foot



Signage is key to convenient routes

If it is not possible for cyclists to take their cycles with them when buying tickets, consider suitable short-term parking opportunities. These include wall anchors, bars or simple stands next to a wall, if cycles cannot be left close by within sight of their owners. Note, there may be associated station counter terrorism security requirements to be met (see Appendix B).



Cyclists buying tickets may delay/inconvenience other passengers at busy times



Cyclists waiting for the train may also need somewhere secure to leave their cycles

3.4 ROUTE AND FACILITY AUDITS

Within the station boundaries

To help those with a cycle to access and cross the station, take an audit of the conditions immediately outside the building and the routes and facilities within to see where improvements can be made. This can also help decide where to locate cycle parking. Include at least one person who is familiar with practical cycling issues to help with the audit. Riding (not within the station) and pushing a cycle during an audit will help to highlight any challenges along the route and how they might be overcome. Access and egress for each platform should be investigated.

For planned new stations or significant changes proposed at an existing one, including new cycle parking/storage/hub facilities, the station operator should ensure potential counter terrorism security considerations are taken into account and consult their TOC Nominated Security Contact first (see Appendix B). This will ensure appropriate advice is given for designing in security early on.

Working in partnership with the local authority cycling officer and members of a local cycle user group can help with station audits. Get all stakeholders together and visit stations along the route quickly to allow those participating to form a consistent group who can compare and contrast different circumstances at stations along the route. Involving the planning authorities may also speed up the implementation process and resolve problems during planning, especially if listed building consent is required. Address any existing cycle parking that may no longer be fit for purpose through a quality review of what is provided. Advice on good practice is provided in Chapter 5 and Appendix C of this toolkit.

CASE STUDY – BEDFORD BOROUGH COUNCIL STATION CYCLE SURVEY

Working together with the then station operator, First Capital Connect, and Sustrans, the borough council surveyed existing cycle-rail users in 2013. The results were:

- 70% cycled to the station daily
- 80% cycled in all weathers
- Just over 40% would have walked if they had not cycled
- Nearly 30% would have used a car.

Among a number of reasons for cycling, the top three were:

- Over 60% for health and exercise
- Over 55% because it was the quickest way to get there
- A similar number cited the cost of car parking.

The time and distances cycled/quoted helped confirm that cycling is generally a short distance activity as:

- 50% cycled for less than 15 minutes each way
- 98% cycled for less than 25 minutes
- The average distance cycled was 1.7 miles.

The council valued information on the type of facilities these cyclists were happy to use: 67% said they preferred to take a busy, quicker on-carriageway route than a quiet, slower one. The information provided helped the council to make the case for funding an entirely new form of roundabout designed to remove conflict points for cyclists.



Bedford station – the outcomes of investment in cycle parking speak for themselves

Outside the station boundaries

The local highway authority will be responsible for improving routes to the station. Working in partnership with it can open up new funding opportunities for improvements outside and on route to the station, such as the authority's capital and revenue budgets. Other sources that may be available include Local Enterprise Partnerships (LEPs), Regional Growth Fund, the Community Infrastructure Levy (CIL) and Section 106 and 278 agreements.

These are for works that result from, and are funded by, new development.

To start finding out how routes might be improved survey those who already cycle to the station as part of an annual monitoring of cyclists' satisfaction (see customer satisfaction p51) .

When working with a highway authority and other stakeholders to look at improvements to routes to and within the station do not use a formulaic 'tick box' approach. Audits should be tailored to the scale of the station and its context regarding cycling levels and opportunities in the area. What is to be examined can be agreed and developed in partnership. Subjects to be covered include:

Routes to stations

1. Are there strategic cycle routes from and to key destinations (employment centres as well as residential areas) within 3 miles (5km)?
2. Are routes to the station from and to key destinations consistently signed?
3. Is the potential for providing new routes and greater permeability being explored to attract less experienced cyclists?
4. Have barriers to cycling been identified and an action plan developed to remove them?
5. Is information on cycling to and from the station adequate and easily found?
6. Is cycling to the station actively promoted by TOCs and stakeholders, especially the local authority?

Access to the station

7. Are cyclists able to enter and leave the station safely and conveniently in all directions?
8. What measures, including cycle parking, are provided outside the station – can they be improved?
9. Are there any measures that could be introduced to facilitate cyclists' use of access roads e.g. cycle lanes, tracks, traffic calming, contra-flow cycling, flush dropped kerbs and so on?
10. Can cyclists ride right up to the station entrance?
11. Where cycle parking is sited outside the station building is it on the direct line of a cyclist's approach?
12. Is access to the station building convenient for cyclists, e.g. where doors are provided are they wide enough and automatically opened by motion detection?

Within the station

13. Can cyclists keep their cycles with them while buying tickets or seeking information?
14. What facilities, including cycle parking, are provided for cyclists – can they be improved?
15. Is cycle parking visible from the entrance, conveniently sited, signed and served by step-free direct routes?
16. If steps are encountered, are wheeling channels or lifts provided? Are these practical and usable for cyclists?
17. At the gate line, can cyclists conveniently access platforms?
18. When leaving the station are major destinations signed/suitable route mapping provided?
19. Is there a procedure for cycle-rail passengers to feed back their experience?
20. Is there a process for consultation with stakeholders before plans go further¹?
21. Have potential station security considerations been viewed and advice sought (see Appendix B)?

Notes:

¹ User-based insight into what works and what does not could turn a minor improvement into a considerable success. However, it is important to keep the discussion focused on planned improvements.

Once suitable routes (and other measures for cyclists) are identified and implemented, they should be added to the 'Stations Made Easy' website. Every TOC's website should include clear guidance on how cycle-rail users may reach this site.

The following insight provided by the Cycling and Walking Officer for Bedford Borough Council, Patrick Lingwood, is a useful summary:

- Find out what cyclists' routes are and the problems they face so you are actually spending money on real problems and the routes that those cycling to stations actually use
- Understand your users – it is likely that station cyclists are commuters who value directness and speed over quietness and comfort along circuitousness routes
- Maximise your cost benefit ratio – cheaper cycle lanes on a main road (along with other changes) may do more than an expensive off-road facility in one place
- Think whole routes – you may need to put a whole route together through a range of very different facilities
- Once you have your route, ensure it is signed and marked on a good cycle map.

3.5 GRADIENTS, WHEELING CHANNELS, LIFTS AND ESCALATORS

Gradients

Cyclists are not permitted to cycle within station buildings, so gradients that pedestrians find comfortable will suit cyclists, especially where they meet current guidance for people with disabilities (preferred gradient 5%, maximum 8%¹⁵).

Wheeling channels and ramps

Where no other route exists, well-designed cycle channels/ wheeling ramps fitted to new stepped footbridges or retro-fitted to existing ones are a low cost way of helping cyclists negotiate steps without carrying cycles. They also provide an alternative to waiting for a lift that may not be large enough to accept a cycle or too many other passengers. Channels/ramps can increase safety by creating user-friendly routes that attract cyclists away from less suitable ones.

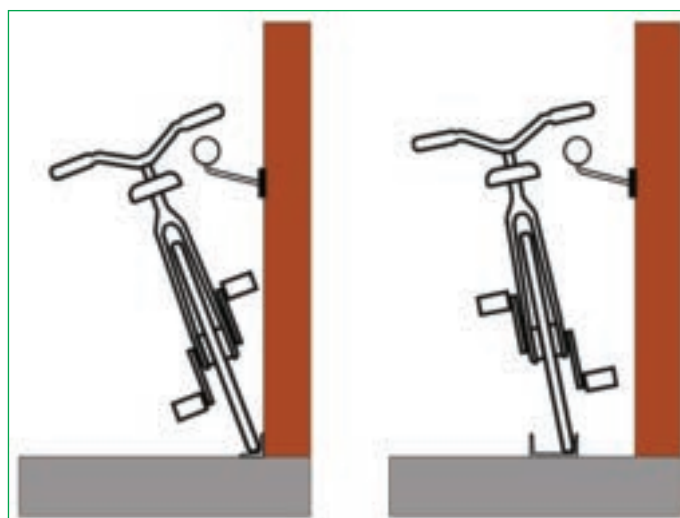


Wheeling ramps at the entrance to the Fietspunt (cycle point) at Antwerp Central Station

Feedback from users suggests they will completely ignore poorly designed ramps. Often this is because the rail/ramp is too close to the edge of the step, causing the cycle to be pushed up or down at an uncomfortable angle or the pedals to catch on the wall/balustrade/railings alongside.



A modest but useful ramp at Euston Station



'L' and 'U' shaped wheeling channels

The preceding diagrams¹⁶ show that the closer the rail is to the edge of the step the more the cycle has to be supported. Each solution will be site specific and depends on issues like the width of the steps, the handrail arrangement and the levels of pedestrian flow. However, the following factors will be common to most installations and reflect DfT guidance:

- The wheeling channel should not impede pedestrians' safe passage
- Channels should not obstruct use of the handrail or be placed in the centre of the steps, unless there is room for a central handrail, as this may cause a trip hazard
- Where there is only one handrail and on the side with the channel, consider adding another on the other side
- Where there is only space for one channel place it on the right-hand side as this is where most cycles are pushed and it will help those ascending the steps¹⁷
- A 'U' shaped channel is better than 'L' shaped as the cyclist does not have to use extra effort to keep wheels within the channel
- The channel should be 80-120 mm wide and 200mm (to centre line) from the edge of the steps¹⁷
- Metal channels should be fitted with a non-slip surface
- Where there are changes in direction, channels should not be placed on the inside as this makes them impossible to use continuously (unless there is adequate space on each landing)
- Channels should not be extended across landings where there is a change of direction
- Channels should run out to surface level at the top and bottom as this makes them easier to use¹⁸
- The ideal rake for wheeling is slightly less than a standard 34-degree flight of stairs.



Well-placed retro-fitted ramp – note 'run out' at the top and non-slip surface © Cyclehoop

Where space permits, ramped walkways may also be useful within a station, hub or parking compound when cyclists need access to upper floors. If not practicable, and there is high demand for cycle use, try a Dutch innovation where cyclists going up a flight of steps are assisted by a moving belt within the channel. This is triggered by the cycle being pushed onto the ramp and takes the weight once a brake is applied. Cyclists going down the steps also have a channel provided; but fitted with a 'gutter brush' over its entire length. This slows the cycle down, again relieving the cyclist of much of the weight of the cycle.



Ramped walkways within a hub

¹⁶ Based on LTN 2/08 Cycle Infrastructure Design, DfT 2008

¹⁷ See Cycling England guidance note B.10

¹⁸ See Sustrans Standard detail SD/53

CASE STUDY – RAMPED ACCESSES TO YORK STATION. EAST COAST RAIL IN PARTNERSHIP WITH YORK CITY COUNCIL AND NETWORK RAIL

New ramped accesses benefiting pedestrians and cyclists were created at York Station to facilitate access away from the busy main entrance and create links with major cycle and pedestrian routes. New entrances were created through the station boundary: one south through a wall of the car park and the other north through a fence. In both cases the entrances are gated and closed between 22:30 and 05:30.



Sign showing the way to the northern ramped entrance via the cycle route network



Gated ramp up to platform level



Signed times of opening



From the south a new hole in the wall and gated entrance create a route through the car park from the cycle route network



All supported by signing and information boards



No wonder the parking is full

Lifts

The location of lifts should be clearly signed and have enough space within them to accommodate cyclists at the same time as other users with minimal inconvenience. Large lifts allow cyclists to turn around within them to avoid reversing out and inconveniencing other travellers (see Appendix C).



A good sized lift, in this case a traditional goods lift, will meet customer needs as well as operational ones

Lifts are often retro fitted and their size based on the minimum required to accommodate a single wheelchair with a depth of 1,250mm deep x 1,000mm wide¹⁹. This does not permit the wheelchair user to turn around nor will it accommodate a cyclist and cycle. The preferred minimum size of a lift should be not less than 1,600mm x 2,000 (depth x width) as this will enable a wheelchair users to turn around within the lift car and easily accommodate a cyclist, a cycle and other passengers. See Appendix H for more on dimensions. The presence of an existing lift or the introduction of a new one should not be seen as a reason for not providing ramps or the removal of existing ones. Where lifts are small and/or use is high or involves a detour, cyclists may still find it more convenient to use steps with channels fitted.

Lift dimensions should be suitable for wheelchair users and those with luggage or pushchairs, giving due consideration to the volume of passengers expected to use them.

Guide to Station Planning and Design, Network Rail 2011

Escalators

Use of escalators by cyclists accompanied by their cycles is not formally restricted. Station operators decide whether to allow this practice, which will be site specific. The decision-making process should not be seen as simply one of 'health and safety says no' but one which recognises the availability, or lack of, suitable alternatives as well as the design of the escalators.

Where escalators are designed for high volume use, and have four level treads at the top and bottom, these can often be used by cyclists without problem. They may also be safer than requiring them to carry their cycles up or down flights of steps without a wheeling ramp. Escalators without a level transition can be equally difficult, and even hazardous, for those with cycles, passengers with pushchairs and large items of luggage, so a consistent approach is needed. Restrictions that allow large luggage, pushchairs etc., but ban cycles could be challenged.

Cyclists should not be excluded from using moving walkways, as this is likely to encourage cycling in areas where it is unwelcome and a hazard to other passengers.



Carrying cycles on escalators need not create hazards for cyclists or other passengers



Barriers to prevent the passage of heavy luggage need not be a barrier to cyclists

3.6 DIRECTION AND OTHER SIGNS

Once regular travel patterns are established, frequent travellers become conditioned to what they have to do and routes to take, and only want to be alerted to major changes that effect their travel times and/or routes. Newcomers to any station will also welcome clear, well thought out signs to cycle-rail facilities.



Clear signage is essential

Signage for Network Rail managed stations must comply with Managed Stations Wayfinding – Design Guidelines and Specifications Version 2, 2011. This document is also a useful guide for TOC managed stations.

A range of signs can be used to direct users to cycle parking and other facilities. As with pedestrian routes, these can help users go on their way with minimal delay. With cycle parking, the simplest signs comprise the well understood 'P', denoting somewhere to park, combined with a cycle symbol. There is no sign to denote a cycle hub that may lawfully be used on the public highway. RDG will encourage the DfT and Network Rail to create such a sign to provide a unified approach to signing such facilities.



Park your cycle here – may also be used on the public highway



Covered secure cycle parking – pictogram may not be used on the highway

If it is not practicable to place signs on the platform to show the usual position of a train's cycle storage area, information screens should provide this information or it can be announced over the public address system.



Large signs easily seen from a distance are better than small ones at a low level

Other forms of directional guidance can be used like that at King's Cross Station to guide people to the new departures hall



When introducing any new feature, signs on the floor make an impact

As explained, outside stations the local authority is responsible for signs within the highway. Partnership working with the highway authority can result in it providing suitable signs to and from the station.



The use of a simple pictogram indicating the location of a cycle hub would reduce sign clutter on the streets



Cycle route to the station expressed in minutes as opposed to miles can encourage a change of mode

3.7 STATION TRAVEL PLANS

Guidance published by ATOC in 2013²⁰ summarises a station travel plan (STP) as a: “management tool for improving access to and from a station and mitigating local transport and parking problems, supporting sustainable growth in rail patronage and the strategic objectives of the rail industry. The STP is jointly agreed and delivered by the rail industry, local authorities, other stakeholders and the local community working in partnership.” Further guidance, including how to assemble the necessary data, is in the Station Travel Plans: Research Toolkit²¹.

²⁰ Guidance on the preparation of station travel plans, ATOC 2013

²¹ ATOC, Passenger Focus, Rail Safety and Standards Board 2009

²² Guidance on the preparation of station travel plans, ATOC 2013



Analysis of access mode of season ticket holders around St Albans Station. Note how many fall within the 90th percentile of less than 3km from the station, which is an ideal cycling distance (Base map reproduced by kind permission of Hertfordshire County Council – Crown copyright reserved)

STPs are usually triggered by franchise commitments, major re-developments or where one, or more, of the following key factors have been identified²²:

- “An identified problem with access (or egress) that presents a barrier to growth
- There is potential for greater use of particular modes, e.g. evidence of unmet demand, favourable local circumstances
- Practicable measures can be identified to improve particular modes
- Opportunities can be identified to support their implementation, e.g. funding, existing schemes or developments in the area
- There is demonstrated stakeholder support for an STP from the local authority.

“Station Travel Plans (STPs) have shown that they can be very effective at delivering improvements cost-effectively, making better use of existing resources, and leveraging additional funding. STPs have: achieved increases in the use of sustainable modes, improved customer satisfaction, and supported passenger growth.”

Guidance on the implementation of travel plans, ATOC 2013

To reap the greatest benefits, TOCs should set targets for introducing STPs across their networks. While developing travel plans for stations they should aim to address passengers’ transport needs and those of operational staff and employees of retail businesses in the station. Where stations have become destinations for the surrounding community, the transport needs of these visitors should also be addressed.

Redevelopment of stations – and new build

Where redevelopment of a station or new build takes place it is likely that cycle parking, and possibly an STP, will be required as a condition of the planning process. RDG's guidance²³ aimed at local planning authorities gives thresholds and scale of both cycle parking and STPs. The former is useful when determining the minimum levels of cycle parking to be provided at a station. For guidance on counter terrorism issues see Appendix B.

4. CYCLE HIRE

4.1 CYCLE HIRE SCHEMES

Cycle hire can help enhance the seamless door-to-door journey experience. Although often seen as a tourism resource in the UK, in many parts of mainland Europe it is an accepted part of the onward journey.

The Dutch OV Fiets bike hire system began modestly and is now an enormous success. With 800 cycles and 11,000 users in 2003 the OV Fiets bike hire system has expanded to 7,000 bikes at 250 stations, 140,000 registered users and over 1.3 million trips in 2014²⁴. Part of this success is a flexible approach to hire use. An OV Fiets hire bike may be taken home overnight and used to return to the station the following day.

Cycle-rail cycle hire schemes can be quite slow to grow, so TOCs should take a long-term view. Cycle hire should also be seen as another opportunity to improve customers' choice and service delivery rather than just driving profits. Hire need not be for a day but for longer periods and included in promotions to reward season ticket holders. Various different models can be adopted with the hire cycles provided by the TOC or a third party such as the tenant of the repair/sales outlet within a hub, a nearby cycle shop, a local social enterprise or not-for-profit body. In hilly areas unsuited to the type of cycles used for city-bike schemes (heavy, robust, low-maintenance machines), it may be more appropriate to find a local operator of lightweight, multi-geared hired cycles.

²⁴ Bike Train Bike – Guidelines to implement BiTiBi services, 2014

CASE STUDY — BIKE AND GO, ABELLIO GROUP — CYCLE-RAIL AWARD WINNER 2013

"Cycle hire is not seen as a profit making activity but one which is revenue neutral and offers a real benefit in terms of customer service."

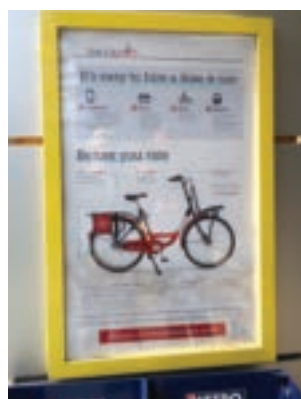
Rollled out across Merseyrail, ScotRail, Northern Rail and Greater Anglia, Bike & Go allows consumers to hire a bicycle from any of the stations in the scheme. Based on the OV Fiets approach but adapted to local circumstances, cycles

can be used as part of a customer's commute, for a day trip or holiday. Bike & Go differs from local hire schemes, as there are numerous UK locations.

The Bike & Go website is clear and easy to use. To sign up to you can find the nearest participating station and check how many bicycles are available online.



Clear signs to facilities offered



Clear instructions on how to hire a bike



Sturdy branded bikes



Fob to enter the compound and key to release the bike



Cycle parking and hire combined



Targeted marketing – tourist attractions (among others)

Lessons learned:

- The availability of cycle hire needs to be ever-present and consistently delivered; with a national as well as network- wide approach
- Appoint an individual or champion responsible for promoting cycle hire
- Electronic systems need to be future-proof and look towards integration with smartcard ticketing
- Systems from mainland Europe should not be 'copied and pasted': local circumstances will dictate the best solution
- Locations need to be chosen with care as not all sites will be successful
- Year-on-year improvements demonstrate value
- It is too early to see the full picture; do not be put off by cynics.

CASE STUDY — BROMPTON DOCK, BIRMINGHAM, CENTRO

A folding hire bike may be collected from a secure locker at a rail station and returned when the user no longer needs it. Centro has worked with Birmingham City Council to place its hire facilities on streets near stations. This provides a wider opportunity for potential hire within the city.



On-street hire



Colour coded parts link to folding instructions on Dock and cycle

CASE STUDY — RUSSEL'S BIKE SHED AT SHEFFIELD STATION FOR EAST MIDLANDS

The cycle hub at Sheffield Station is popular with local cyclists. As well as looking after the cycle parking, the operator, Russel's Bike Shed, provides maintenance and retail services to the public. Business has grown from one person working part-time servicing cycles one day a week to two full-time staff and two part-time since the hub opened.

The hub is well sited at the front of the station building next to the entrance in an enhanced public area.

It benefits from large numbers of passers-by as well as those going to the station.



4.2 BIKE AT BOTH ENDS

If unable to carry their cycles on a train, many regular passengers in parts of mainland Europe keep a cycle at both ends of the rail journey (nearly 50% of Dutch travellers arrive at the station by cycle and 14% use one for their onward journey²⁵). Making use of two cycles is an increasingly common, if not always fully recognised, phenomenon in the UK. Accommodating it within adequate cycle parking provision at all stations should be seen as a key element of cycle-rail, especially if cycle carriage is restricted by a TOC.

“The Dutch have also encouraged cyclists to keep a cycle at both ends of their journey to discourage cycles being taken onto crowded trains.”

Better Stations Report 2009

One disadvantage of keeping a cycle at the ‘far end’ of a journey is that it can be of low quality and poorly maintained. The fear is that better quality bikes could be stolen. Poor maintenance can result from not wishing to carry the necessary tools. Cycle repair facilities at cycle parking locations and hubs can help meet this need. To promote this activity, cycle parking needs to be conveniently placed and not add time to the journey at either end.



Cycle repair stand (to left) and pump (to right) at Paddington Station – a popular location for a ‘bike at both ends’

Forwarding of cycles

In mainland Europe some train operators e.g. SNCF (France) and SBB (Switzerland), will ship cycles ahead of travel. Prices for this service vary – €80 (£56) in France and 18CHF (£11.63²⁶) in Switzerland. However, it does provide an additional level of service. The Caledonian sleeper also does this for cycles that go beyond its carriage limits. TOCs should consider forwarding cycles, possibly through a national carrier to help those wishing to keep a cycle at their destination station.

²⁵ Bike Train Bike – Guidelines to implement BiTiBi services 2014

²⁶ Exchange rates at the time of writing (Nov 2015)

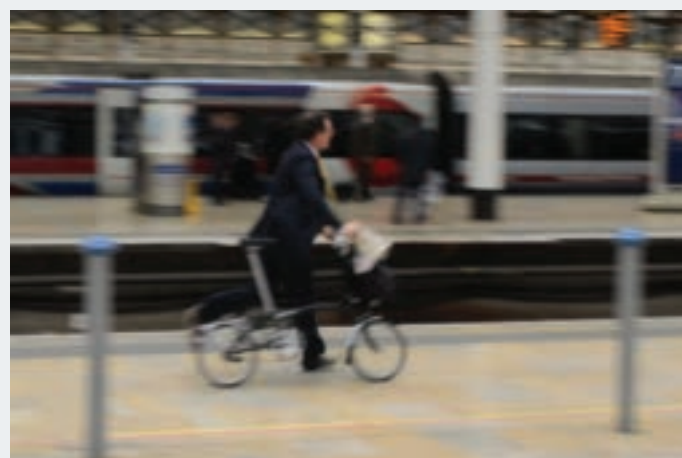
5. CYCLE PARKING

5.1 BASIC PRINCIPLES

Cycle parking is right at the heart of encouraging cycle-rail. Getting it right is key to giving users the confidence that their cycle will be there on their return.

Users often place more value on the transport opportunity a cycle provides than its financial cost. The theft of a cycle may leave its owner with a long and expensive/difficult trip home out of all proportion to the price of the cycle.

Also key to success is recognising that regular users of cycle-rail will have timed their arrival at the station to minimise the need to wait. Introducing any facility that undermines this will not meet customer needs and significantly reduce the attractiveness of cycling over driving. New facilities must be as close as possible to entry and egress points and provide a smooth uninterrupted flow of arrival, parking and transfer to the train. For stations with more than one entrance, parking provision next to each entrance may be needed. If not possible, some measure of improvement in service delivery, such as greater security or covered parking, will offset any perceived disadvantage.



A smooth passage supports the ‘just in time’ principle

As an added benefit, good quality, secure cycle parking (or cycle-hire) at both ends of the rail journey can help to reduce the demand for carriage of cycles on trains, but not if the transfer time adds to the customer’s journey.

Various factors govern the effectiveness of what is provided from the users’ perspective but the most important issue is convenience. See Appendix D for a checklist of the appropriate design and management needed to achieve this.

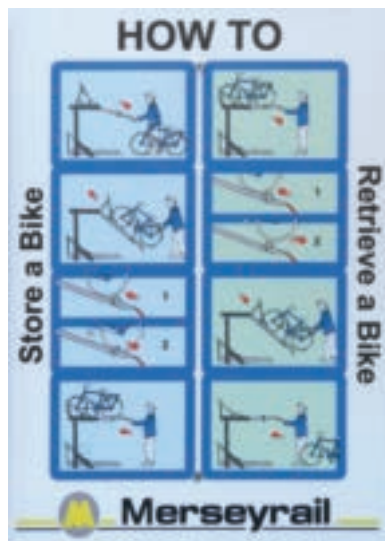
5.2 WHAT WORKS

There is no one size fits all solution. The level of demand for parking, the space available and the type of facilities provided will vary with local circumstances. This means a small station might have a relatively high demand and a larger one less so. Providing sufficient parking may take up a greater proportion of space available on a smaller station.



Two-tier cycle parking outside Waterloo Station

Two-tier parking systems are a common response to higher levels of demand for parking and where a high density is needed. It is now the parking system of choice at most stations. They should be accompanied by instructions on how to use them. To be accessible to all users and minimise the effort required, the upper levels should have gas or spring assistance for raising and lowering the cycle. To provide effective security, upper and lower tiers should be fitted with a bar or loop that allows the frame and at least one wheel to be secured. Since the upper tier has moving parts it is advisable to assign a unique number to each individual rack so that faults can be easily reported. This also helps with monitoring theft, the levels of use and abandoned cycles (see Monitoring on page 49).



Explanation of how to load a cycle into the upper tier



This variety of two-tier parking has a rail that allows both the frame and front and rear wheels to be secured.



At busy sites the use of numbered stands and coloured sections can help users identify where they left their cycles



Numbered rows at a Belgian station

Some two-tier racks can be noisy in use, especially those with poor structural integrity. This can be a nuisance to nearby residences and businesses early in the morning and late at night. At one location, people's complaints led to restrictions being placed by the local authority on the times of day the upper racks may be used. TOCs should be alert to this possibility. When introducing two-tier racks, consider the local surroundings and try sourcing high quality, robust, gas-assisted upper racks that create the highest level of security and user satisfaction and the least amount of noise.

Where there is space, or demand is low 'Sheffield' stands remain an acceptable solution. These are cheap, simple to install and maintain, park two cycles to one stand and are liked by users so long as they are not placed too close together. Stands that are not far enough apart for convenient use may look full but often only have one cycle at each stand. If space is restricted, and the distance between stands is less than the recommended minimum of 1m, it must be demonstrated that two cycles can be easily accommodated (see Appendix D).

For cycle security, the Sheffield stand allows the frame and both wheels to be easily locked to it. They can also be finished in a range of colours to match a TOC's livery to help make a statement about its commitment to cycle-rail.



Covered Sheffield stands at Bedford Station

Sheffield stands can come in rows fitted to a base rail. These 'toast racks' can be free standing if required. Those with flat bottom rails are preferred as this makes parking easier and are less likely to trap litter. Where stands are bolted down, tamper-proof fixings should be used to prevent the stand being unbolted to steal the cycles locked to it.



A good idea but bad in practice: a 'toast rack' with its stands too close together, leaving room for only one bike per stand. Note how the thick rail also traps litter



A toast rack with thick rails placed too close to the wall makes it difficult to lock both the rear wheel and frame and provide adequate stability

Some Sheffield-type stands are 'M' shaped to encourage cyclists to lock the frame and wheels while resisting the ability to turn the cycle to break the lock. Other forms of stands can make a positive visual impact, to raise the profile of cycle parking and cycle-rail.



A positive statement but some cyclists may prefer not to lift their cycles however easy it might be



Using the lower rack of two-tier stands can provide an interim solution with the upper tier provided when demand justifies

Automated cycle parking systems

Manufacturers have developed automated systems that take hold of the cycle and place it in racks or carousels away from the point of surrender. While such systems may have value where space is limited or non-existent, what will be the likely levels of use at peak periods? If it takes too long to retrieve an individual cycle and there is a queue for the service then regular users may ignore this type of parking.

5.3 WHAT DOES NOT WORK

Any kind of stand that grips just the front wheel should never be used. It offers no support if a cycle is knocked or falls, which can buckle the wheel or cause greater damage. This is why they are known as 'wheel benders'. Also, this stand does not provide any means to secure the frame and so reduces the parked cycle's security. Locking the front wheel can be difficult if adjacent stands are being used.



The worst of all worlds – lifting a cycle into a 'wheel grabber' – the wheel lives on long after the cycle has been stolen. Note how other cyclists attach their cycles to the frame of the parking rather than use the very substandard provision



Some stands look good in the public realm when not in use but do not provide adequate support and security. They pose a threat to pedestrians with impaired vision



Semi-upright stands can cause a clash of handlebars

5.4 COVERED STANDS AND COMPOUNDS

Most demand for cycle parking at rail stations will be for long-stay (6-12hrs) so any provision should, ideally, be covered to protect cycles from the elements. The effects of the prevailing winds should be taken into account when deciding on a site, as many shelters provide only a modest degree of protection. Canopies should neither obscure the view of CCTV cameras nor have degraded transparency that prevents natural surveillance.



Covered but no protection from the rain; now moved to take advantage of a more sheltered position

Siting the parking within covered compounds with access controlled by an electronic device such as a key-fob or swipe-card can add security. To integrate with rail and other services, an ITSO standard contactless card is recommended. Such systems can be used to monitor parking activity and provide valuable information on levels and times of use. UK and Dutch experience suggests that three times as many keys as cycle stands can be issued because of users' different travel patterns.

All systems of registration and key issuing must be easy to find out about and take advantage of. Agreements with users should be concise and easily understood by all parties and the subject of renewal of registration at least annually. Cyclists may be reluctant to pay. However, where keys, key fobs and cards are issued, payment by credit or debit card can help maintain a record of who has had a key issued to them, which is useful in monitoring and security. Keypads are not recommended as the combination can be shared and it can be difficult to notify all users of changes to the combination.

Clear views in and out must be possible (usually using weld-mesh fencing) and the internal door release mechanism not reached from the outside. Also, compounds should have no openings large enough to pass a dismantled cycle through as thieves will often identify and make use of such weakness, despite CCTV.



'Air locks' at Chelmsford station (two entry and one exit) allow emerging cyclists to retreat if unsavoury behaviour is going on outside late at night. Pedestrian exit is through a turnstile to the left.

Doors that swing open or slide are preferable to roller shutters. These might be more difficult to lever open but generally take longer to operate and encourage users to duck under before they are fully open. Clear instructions are needed for users to ensure the facility is left secure and all forms of access should aim to prevent 'tailgating' to avoid unauthorised access. Turnstiles probably provide the greatest security but can be difficult to pass through when pushing a cycle. Where practicable, the activation point, of any door should be sited at least one cycle's length (roughly 2m) in front of the door to make entry and exit easier.



Turnstiles provide good security but can be difficult to pass through with a cycle

CASE STUDY – SMART CARD FOR TRAVEL AND CYCLE PARKING, BRIGHTON, SOUTHERN

Southern has introduced an ITSO smart card that can be used for both ticketing and entry to secure cycle parking at Brighton and Lewes Stations.



The 'touch in' and 'touch out' points are placed before the doors



Both entry and exit is achieved with the smart card

Compounds need not have staff present to include other services such as pumps and repair stands. Merseyrail has provided lockable cages to allow helmets to be left behind securely, as well as cleansing wipes to encourage use.



Mesh for helmet storage



Cleansing wipes

Secure compounds can often be created by forming cages below existing buildings or roofs. They should have good natural surveillance into and out of them, be well lit, and have no hidden areas or places where offenders could hide. Mirrors can be used to see into areas that would otherwise be out of sight.



Mirrors can help users see around corners

It is essential that a secure compound is quick and convenient to use, otherwise cyclists may prefer to park elsewhere. If non-locking compounds are used, users should enter and

leave through one exit covered by CCTV (in addition to the coverage provided within the compound). At times it may be suitable to use a building, or part of the station building, as a cycle storage area. The same recommendations as for compounds should be considered.



Unused stands in a secure compound



While one floor up, the easy access parking is full



The response to being asked not to flypark outside the compound is 'Open up the cage and we won't park here'



A bike hanger may offer a turnkey secure solution for a compound at smaller stations (subject to any counter terrorism security requirements to be met) (see Appendix B). © Cyclehoop

CASE STUDY — MODULAR COMPOUNDS, LEWES STATION — SOUTHERN AND STOURBRIDGE STATION — MERSEYRAIL

If demand increases, Southern Rail's compound at Lewes allows for extension and shares the same smart card operation as nearby Brighton Station.



Compound at Lewes

Centro has also introduced a cycle parking compound at Stourbridge Station, accessible by smart card, which can be extended as the need for more spaces arises. Tags on cycles encourage those who park at the nearby Sheffield stands to transfer to the secure facility.



Tags to encourage use by those parking nearby to use the compound

A hub that includes repairs should not create difficulties for those who return after staff have left for the night. Instead, cyclists could leave their locks and keys with the service staff. Once the cycle has been repaired it can be left within the secure compound, locked and the key(s) left in a simple key safe within the compound. This can be collected later for collection by the returning cyclist who has been advised of the combination.

5.5 LOCKERS

When considering installing cycle lockers (or any other cycle storage) on a rail station, TOCs should know there might be associated station counter terrorism security requirements to be met (see Appendix B). Lockers should preferably be made of open mesh at all sides and have an additional viewing panel at the front to monitor usage. CCTV should be positioned to monitor activity at the front of the lockers.

Details of how to hire lockers should be clearly shown at the point of use. Agreements with users should be simple to understand and complete and include the right for station staff to enter the locker at any time. In support, station staff should be instructed on the process of hiring, inspecting and maintaining lockers.



Cycle lockers used to augment secure compound and free-access parking

5.6 ELECTRIC CYCLES AND NON-STANDARD CYCLES

The use of electric bikes is growing rapidly in some main-land European countries and demand is likely to increase in the UK, especially as they help extend the potential for cycle-rail to a wider catchment area. These cycles are generally heavier than others because of the weight of the battery and electric motor. This can make them more cumbersome to manoeuvre and, for some users, impossible to lift. For electric cycles, install more widely spaced Sheffield stands or suitable wall anchors or bars.



An electric cycle with the motor in the hub of the rear wheel – note the bar to lock the cycle securely (unused in this case)



Wall bar (fitted with anti-tamper fixings) Picture © Cyclehoop

Providing charging points could be considered. Without a unified system of charging leads, this provision is best confined to suitable 13 amp sockets. The practice is recommended in secure, covered compounds to minimise tampering or theft of leads: the cycle hub at Hull has this.



Charging point at a Belgian station

Extra space may be needed as use of non-standard cycles increases in areas with high levels of cycling. Decisions on how best to accommodate electric cycles, tandems, cargo bikes and cycles with trailers, while delivering an appropriate level of security, should be made for each case, depending on demand and in line with this toolkit's guidance. Other cyclists may need informing that certain stands are reserved for users of such cycles.

5.7 BUYER BEWARE

When buying any cycle parking equipment, tenders must be scrutinised to ensure the offering is like-for-like and includes supply, delivery and installation. For example, compare specifications of Sheffield stands for wall thickness and finish. In two-tier stands, compare the nature of construction, finish and lifting mechanism. Whenever possible seek, and follow up, references from satisfied customers within the rail industry as part of the procurement process. The same applies to the use of lockers. In the past not all lockers were capable of holding all types of cycles. TOCs should ensure the lockers are suitable. Reputable suppliers will usually have arrangements with installers who are certificated for work within the rail environment.

At present there are no nationwide standards that govern the design and manufacture of cycle parking equipment. This is not the case in the Netherlands where a useful way of comparing products is to see if the parking to be provided complies with the standards specified by the Fiet-sparkeur Foundation. This was developed in partnership between the cycle parking manufacturers, the rail industry, user groups and local authorities, among others. It not only governs the specification of materials but also practical issues such as how high the front wheel has to be raised to insert a cycle into the upper tier of a two-tier rack. Some

equipment sold in the UK complies with the Fietsparkeur standard. RDG is interested in being consulted on design if an initiative arises to create a similar standard in the UK.



Ease of use is key to meeting cyclists' needs

5.8 CHARGING FOR SECURE PARKING

The decision to charge for secure parking is left to individual TOCs. A charge may deter some users. However, obtaining details of the individuals to whom keys/smart cards and so on have been issued can help maintain security by linking them to entry and exit times. Payment by credit or debit cards adds another layer of information that can encourage users to be more careful about looking after the entry key. Secure parking should always be accompanied by free, quick to access parking as an option.

5.9 CYCLE SECURITY

Historically, railway land covered by British Transport Police (BTP) has suffered high levels of cycle crime especially where cycles are left all day. This is often because passing natural surveillance is lacking at off-peak times. It can cause passengers to lack confidence when using the station. The wider impact of cycle theft should not be underestimated; studies have shown that of those who are victim to the theft of their cycle, 22% will give up cycling.

As well as cycle parking, all cycle-rail facilities must be safe to access by cyclists when parking their cycles or returning to collect them. This access must be safely integrated with local road and pedestrian traffic and the use of station vehicles. When planning cycle parking facilities there is a legal requirement to design out the potential for crime at the earliest stage²⁷. The overall aim should be to provide facilities cyclists want to use and are confident their cycle will be there when they return. For a checklist describing the design issues to be considered, see Appendix C.

British Transport Police (BTP) can also provide guidance. It has a dedicated Crime Reduction Unit (CRU) with a number of Crime Prevention Design Advisors (CPDA) situated nationally. They can provide designing-out crime and crime reduction advice to railway stakeholders and their partners. Useful contact links are provided in Appendix A.

5.10 ADVICE TO CYCLISTS

Would-be thieves can find instructions on how to steal cycles on the internet. They are known to target the best cycle with the weakest lock. Counter this by providing information for cyclists on how to minimise the likelihood of theft. Advice on crime prevention techniques and how to use the facility shows the facility has a capable guardian. Posters can also display conditions of use (i.e. abandoned bikes will be removed) and advertise any crime prevention initiatives such as bike marking and crime prevention events. Such signage should not obstruct surveillance of the facility.

Posters in parking areas should provide the following advice as a minimum:

- Lock the cycle using two good quality 'Gold Standard' locks²⁸, with at least one being a D-lock
- Lock the frame and both wheels to the stand
- Make the lock and cycle hard to manoeuvre by securing the cycle as close as possible to the rack
- Make sure locks cannot come into contact with the ground
- Locks do not last forever – replace when tired
- Remove items such as helmets, panniers and quick release accessories
- Record your frame number and register your bike on a suitable website
- Insure your bike.

²⁷ See Section 17 of the Crime and Disorder Act 1988

²⁸ See www.soldsecure.com



Useful advice



Same message, different presentation

Cyclists who recognise the benefits of two locks will often leave one lock behind, usually the heaviest, to save taking it home. Providing rails to act as lock hangers can help keep the stands free of unused locks. This also makes it easier to get rid of abandoned locks.



Rail provided for lock storage at St Pancras Station

Dos and don'ts

Cyclists need to be informed of the potential for theft and the precautions that will help them avoid this, but TOCs should be careful not to be too negative and discourage cycling to the station.



A sign that's proven to work in reducing crime

As well as signage on how best to protect a cycle, TOCs should also be proactive by working in partnership with the local authority and the British Transport and local Police to run regular publicity campaigns involving sharing security information, cycle registration and the sale of subsidised locks etc. This approach, together with the use of 'trap bikes' supported by measures such as CCTV and security staff surveillance is more likely to make cyclists feel secure.

CASE STUDY – OPERATION LOCK-IT, BRITISH TRANSPORT POLICE CYCLE-RAIL AWARD WINNERS 2015

Operation Lock-It is designed to complement the activities run by TOCs and the police. Regular cycle-rail users receive brand new D-locks and are given crime prevention advice.

Their cycles are security marked and registered on a national database. This enables the police to restore recovered cycles to their owners and improves prosecution rates while acting as deterrent to would-be thieves.



Applying a unique registration number to the cycle's frame

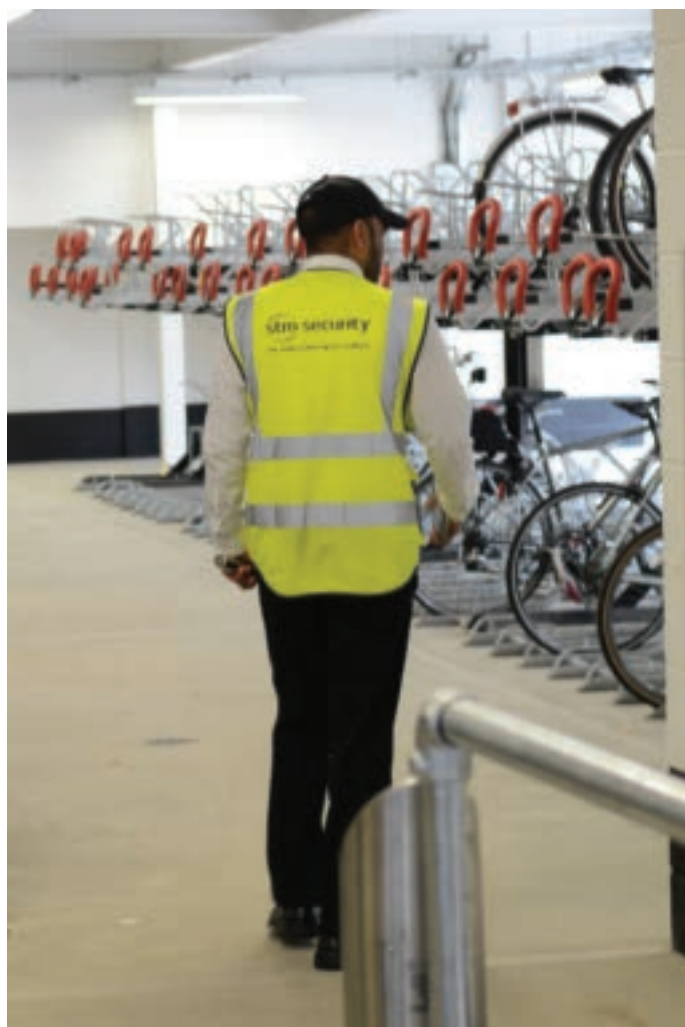
CASE STUDY – CYCLE SECURITY, FIRST CAPITAL CONNECT, OPERATION VELODROME, CYCLE RAIL AWARD WINNER 2013

Cycle crime accounts for around 10% of reported crime on the railway network, with summer being 'peak time' as bike thieves take advantage of increased cycles. Using data from the last three years, First Capital Connect launched 'Operation Velodrome' as a joint initiative with the British Transport Police. Key stations on the network were highlighted as hot spots and specific tactics formulated to tackle the problem head on.

First Capital Connect funded seven security guards as highly visible cycle wardens to patrol the stations and give out free high-quality bike locks. Nearly 300 bike locks were distributed. Locks were also attached to high-value bikes secured with low value locks and a police notice attached. The owner was given the lock as long as they registered their bike with www.bikeregistry.com. The results were very effective. In the last three weeks of August, cycle crime began to dry up.



Cycles fitted with tracking systems combined with CCTV can secure convictions for cycle theft (Leicester Station)



Station security staff should regularly patrol the parking



CCTV cameras may be sited inside or outside buildings

CCTV

CCTV is most effective when staff can monitor and react to criminal behaviour as it happens. Unfortunately, this is unlikely to be the case at most stations. When used with data from entry cards for compounds, it has helped to prosecute cycle thieves. Similarly, the use of CCTV and GPS-enabled 'trap' cycles has also led to successful conviction. Numbering individual stands and colouring racks also help quickly identify the exact location of any crime.

BTP has produced a document entitled Stakeholder Brief – Output Requirements for CCTV Systems. CPDAs should be engaged throughout the process of designing and installing new cycle racks, including CCTV design.

CASE STUDY — SAFER TRAVEL PARTNERSHIP

Centro, West Midlands Police, British Transport Police and Transport Operators make up the Safer Travel Partnership. It was the first of its type in the country, has access to around 1,000 CCTV cameras located at bus, rail and metro stations, park and ride sites, bus routes and in bus shelters. The dedicated control centre is staffed 24 hours a day. Since the two police forces work together as a team in the same building as the CCTV staff they can respond much more quickly.



CCTV monitor screens

Lighting

Cycle racks at stations will probably be used for much of the day so good quality lighting should be installed. A well-lit area and routes to it will increase the overall feeling of safety and the ability to see any activity taking place.

Lighting levels within the cycle storage facilities should conform to current British Standard 5489. If there is any conflict with other statutory provisions, such as Railway Group Standards and conservation areas, lower levels might be acceptable as long as the CCTV is still effective and dark shadows are not made. Variable controlled lighting levels are preferred. If lighting levels are being reduced during off-peak overnight hours to reduce costs and CO₂ emissions, a full risk assessment should take place as recommended by the Institution of Lighting Professionals (ILP).

5.11 RESPECTING THE CHARACTER OF THE SURROUNDINGS

Cycle parking facilities in public settings should complement their surroundings. They should be of sufficiently high quality, in specification and visual appearance, to be in keeping with the context of the station concerned. Hundreds of railway stations in the UK are individually listed Grade II. Around 30 stations in England alone are at the outstanding national interest grades of I and II*, locally listed or lie within a conservation area and so are of significant historic and architectural interest. Providing any cycle facilities in or around these stations requires careful consideration to ensure they do not detract from the character, appearance and integrity of these national landmarks.

5.12 MOTOR CYCLES

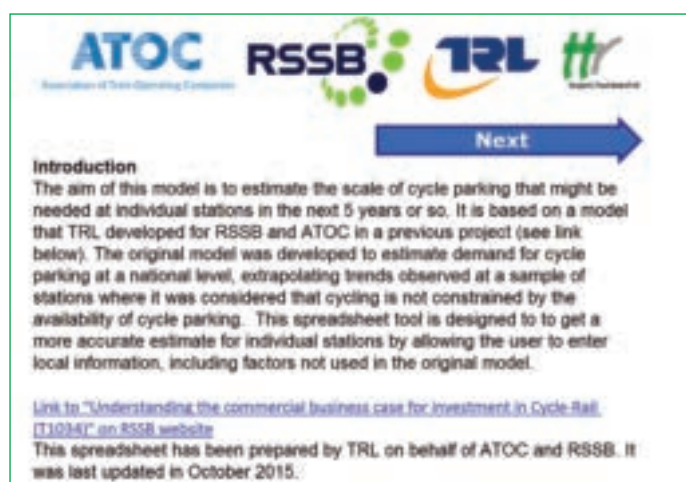
Motorcyclists will often invade cyclists' parking spaces to the detriment of cycle-rail users where covered cycle parking is provided. To address this, RDG has published advice on how to provide for motorcyclists (see Motor Cycle Parking at Railway Stations²⁹).



Motorcyclists in spaces provided for cyclists

5.13 HOW MUCH CYCLE PARKING TO PROVIDE

TRL on behalf of RDG, as part of its work on understanding the business case for investing in cycle-rail, has developed a spreadsheet-based model to estimate how much cycle parking to provide at each station. This model takes into account a wide range of parameters. Some are best derived through partnerships with the local highway authority, which should have ready access to the relevant data. RDG can provide more information and the spreadsheet. It is strongly recommended that this is used by anyone estimating potential demand for cycle parking, to ensure some consistency in the approaches used across the industry.



Screenshot from spreadsheet introduction

The model bases its predictions on the best predictors of the level of cycling to stations:

- A high proportion of station users within 'cycling distance'. An 8km catchment area was used
- A high proportion of season ticket holders – most cyclists, commuters and students included, are regular travellers
- An above-average model share for cycling, walking and bus use for travel to work in the catchment area, as reported by the census (these are indicators of higher population density and willingness to use alternative modes).

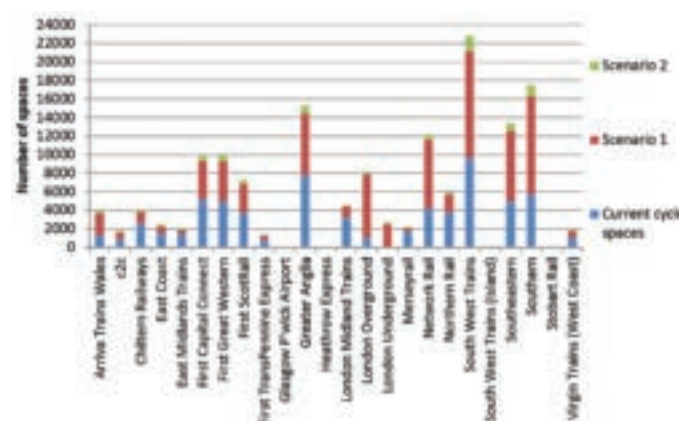
Where these factors are present there will be good potential for cycle-rail. The spreadsheet allows users to review these assumptions at an individual station level and provide more localised values if available. The following information summarises considerations to take when assessing the potential for cycling. It will be needed if using the TRL spreadsheet:

- Definition of cycle catchment area
- Percentage of journeys from station by season ticket holders
- Access mode data
- Census data for travel to work
- Proportion of cycles carried on the train rather than on trains v parked at the station
- The expected trend in rail patronage at the station
- Quality of current and planned cycle parking
- Quality of current cycle access to the station
- Evidence of suppressed demand
- Evidence of constrained demand for other modes.

See Appendix E for more on these criteria. Future government investment will depend on a robust statement of case backed up by a commitment to monitoring the outcomes. As a result, TOCs should recognise the resource commit-

ment required to carry out station surveys at least once a year. This demand on staff time can be reduced by partnership working, for example using a local cycle forum to undertake the counts/satisfaction surveys. Consistency and accuracy are essential when undertaking such surveys as is working with reliable partners who understand the importance of doing the job properly.

Many stations will already have some form of cycle parking – official or unofficial – and a pragmatic approach to the number needed can often be adopted for smaller stations. This entails counting the number of parking spaces available, the level of parking use and the number and location of 'fly parked' cycles within and around the station. These figures can give a ready idea of the number of spaces to provide as a minimum, plus a 50% allowance for growth. Experience suggests that when there is a good supply of cycle parking this encourages more users so, as a rule of thumb, when monitoring reveals that 80% of the spaces are full another 20% should be added. It is important that spaces are counted and not individual stands, since a Sheffield stand will park two cycles if properly spaced.



Increase in spaces required to meet all potential demand over 20 years: according to TOC³⁰

Scenario 1 – based on unmet demand and rail growth
Scenario 2 – includes a 10% further generation factor
(Figures based on a conservative but robust prediction)



A sure sign that not everyone's needs are being met

6. CYCLE HUBS

6.1 DEFINITION



One of the best known examples of a cycle hub – Leeds Cyclepoint

There is no universally accepted definition of a cycle hub, sometimes also known as a cycle station, park or centre. Since it is important that, when bidding for funds, all those involved understand a 'cycle hub', the following definition is to be used:

A cycle hub provides cyclists with a range of different services within the same one-stop location. These will include as a basic requirement a minimum of 50 secure sheltered cycle parking spaces, either self-parked or by staff with controlled access, lighting and CCTV. In addition, one or more (preferably more – see notes) of the following core services will also be provided:

Core	Added value
<ul style="list-style-type: none">• Cycle repairs• Sale of parts ¹• Cycle hire ²• Free use of a pump for tyres ¹• Information screens giving details of train departure times ³	<ul style="list-style-type: none">• Cycle information including cycle network maps, cycle security tourist information, wider travel planning and links to public transport ³• Showers, washing, changing and WC facilities ^{4,5}• Lockers for storage of clothing and cycle equipment ⁵• Left luggage ⁵• Refreshments (café or vending machines)• Cycle cleaning• Reception area and management office• Allowance for growth (not necessarily in the same location)

Notes

- 1 Sometimes it is difficult to attract a local business or organisation to deliver additional services. If that is the case, a station may qualify as a hub if it includes basic repair items sold from a vending machine, a repair stand fitted with a range of basic tools and a pump within a secure compound. The same applies where these services are provided and cycle hire is handled by ticket or other station staff. The times of operation must be clearly shown where the servicing is delivered by an individual or organisation in a 'pop-up' form that visits the hub regularly. The solution should be judged on local circumstances and scale of operation. When bidding for funding it will be appropriate for the TOC to demonstrate why what is being offered qualifies as a hub.
- 2 Hire cycles dispensed from secure lockers may qualify
- 3 Cycle information should be automatically provided within a hub. Similarly, information screens showing rail and bus times should be installed where practicable
- 4 There is no clear evidence that suggests showers are required part-way through a journey. However, changing rooms have proved popular. The end destination, for example the work-place for commuters, is likely to be the best location for showers, particularly where a cycle is kept at both ends of the rail journey
- 5 For counter-terrorism issues see Appendix B.



Information screen and ticket machine at Sheffield hub

The term 'cycle hub' may refer to the station as a whole since it may not be possible to have all of the services located in one place at some sites. Some services may even be provided by stakeholders within a short distance of the station or a nearby cycle shop. It is essential, however, that the services lie on the natural route to or within the station as any detour or delay will be rejected by some of the intended market. Where this is unavoidable, added value and high quality service delivery may help offset this issue.

Work by Network Rail, Cycling England and others suggests that a station should be graded as a cycle hub depending on the level of services provided. RDG and the Cycle Rail Working Group has expanded this to include more basic parking provision at other stations to create a grading system reflecting the common understanding that 'five star' provision represents the best available:

Cycle parking

- 🚲 Uncovered cycle parking outside the station, usually in the public realm
- 🚲🚲 Covered cycle parking within the station or a secure compound with natural surveillance by staff and passengers – with CCTV and lighting.

Hubs

- 🚲🚲🚲 Dedicated monitoring by CCTV of parked cycles within a secure compound with ready access to maintenance facility and a clear link to optional hire
- 🚲🚲🚲🚲 Dedicated supervision of parked cycles at least three core services with access to maintenance facility and parts sales with optional hire **within the station boundary**
- 🚲🚲🚲🚲🚲 Dedicated supervision of parked cycles with at least all five core services listed above within the station boundary and preferably accessed through a single facility all under one roof.

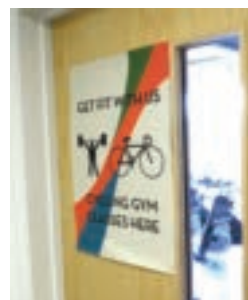
Note: Facilities with a rating of three to five will generally qualify as hubs if they meet the following criteria: min 50 spaces in a secure compound, covered, lit, CCTV, maintenance facilities and, ideally, bike hire.

CASE STUDY – A RANGE OF SERVICES AND AFTER-HOURS RECOVERY OF SERVICED CYCLES, BRIGHTON, SOUTHERN

The Brighton hub offers a repair and parts service, and has two activities that help sustain it financially. These comprise a fitness studio, which also includes a spin class, and an office space available to use by small businesses.



A coffee outlet and service facility is to be expected...



...so why not a fitness studio and an architect's office? Let's hope they cycle there

Those leaving their cycles at the Brighton hub need not worry about collecting them if they return after the facility has shut. The cycle is left for repair accompanied by the owner's lock and key. Once repaired it is left locked within the secure compound. On the cyclist's return the key can be recovered from a simple wall-mounted key safe within the secure compound. The code for the combination lock is changed each time it is used and the customer notified when leaving their cycle for repair. A social media community can also help keep users informed in such situations



Wall-mounted key safes allow collection of repaired cycles after hours

Working with stakeholders, existing users and undertaking a suitable trial can determine the level of likely demand and the services that have the greatest potential for take-up. The station access audit can also be used to identify unused space or redundant buildings to house a cycle hub or secure cycle parking operated by a swipe card or proximity

device; MerseyRail used this effectively as part of its cycle parking strategy.

When considering providing left luggage facilities at a cycle hub, TOCs should be aware of any associated station security requirements under the National Railways Security Programme (NRSP) (see Appendix B).

CASE STUDY – LEICESTER CYCLE HUB, EAST MIDLANDS TRAINS

The Leicester hub is a text-book example of how to involve partners to deliver a workable solution. The location was an old 'Red Star' parcel building not included within the original lease until negotiations with Network Rail changed this. First, local cycling groups were consulted with the result that changing rooms (well used) with hand basins were provided but not showers. These were not considered desirable at that stage in the journey. This saved costs but also negated operational issues such as regular testing for bacteria in the water supply.

The user groups were also kept informed through a newsletter and invited to see progress half way through the construction and to attend the opening. Social media also kept people informed.

There is currently no cycle-rail forum in Leicester, but East Midlands Trains is a stakeholder in Smartgo Leicester, part of a sustainable transport solutions package. This project includes Leicester City Council and local major employers. One exciting project on the horizon is a bid to the DfT for

funding to develop hubs for electrically assisted cycles. To further connect with the local cycling community, the local cycle-delivery service is allowed to park its tricycle within the hub.

The cost of lifetime membership of the hub is just £10. This must be paid by credit or debit card to maintain a full record of users. The electronic fob issued also allows access to other cycle hubs at Sheffield and Nottingham.



Cycle repair and hire facilities, Leicester Station

Lessons learned from recent projects:

- Make adequate staff resources available
- Get users on side and involved throughout
- Involve disability groups to explain access during building works and mitigating measures during any disruption
- Employ good contractors
- Team working is essential with openness and honesty on all sides
- Provide lots of publicity and signage
- Include information screen
- Make good use of social media
- Passing footfall is key to success
- Recognise that initially footfall may not be enough to sustain a full-time servicing operation but this may be met by a part-time or 'pop-up' approach
- Make a conscious decision about charging

- Involve British Transport Police in cycle marking
- Do not remove existing cycle parking but encourage transfer to use of the hub.

Cycle hubs will not meet everyone's needs – e.g. cyclists who are only casual users and others that do not wish to register or pay to use the facilities provided. Additional free-access cycle parking will be required outside the hub to encourage and maximise cycling to the station. Where possible, maintenance facilities should be available to all and not just users of the compound.

7. COMMUNICATION STRATEGIES

7.1 MARKETING AND PROMOTION

The level of take-up of cycle-rail services and facilities provided as part of the end-to-end journey will be influenced by the way information is presented to potential users.

Having used this document to decide what cycle-rail services to provide and where, the next stage is to ensure they are widely promoted effectively. This should not be confined to existing and future customers for cycle-rail but include all personnel within an organisation. Regular staff briefings and updates on cycle-rail are an important part of this process.



Extract from Abelio Greater Anglia leaflet showing cycle facilities throughout its network

Internet

Regular passengers familiar with their journeys may only seek to make sure that train times remain the same. Research for RDG shows that 60% of passengers visiting an unfamiliar station planned their onward journey and of these 86%³¹ used online information (including mobile devices). This, therefore, represents the most important source of information for many passengers on:

- Services available at stations (see 'five star' categories)
- Where they are provided within the station
- Terms and conditions for cycle parking
- Taking a cycle on a train – e.g. what services carry cycles, restrictions, in-carriage cycle storage, how to make a reservation if required
- ATOC's website must contain information on cycle routes to/from the station or readily signpost National Rail's PlusBike facility which already provides this. Information should be presented in a way that non cycle-rail users, are alerted to the full range of services available. Just having it on the website is not enough.

CASE STUDY – NATIONAL RAIL – PLUSBIKE

Making cycle-rail journeys easier

One stop shop for information about your journey. It includes:

- Cycle parking and facilities at stations
- Cycle-hire schemes
- Cycle carriage rules specific to your journey
- Cycle carriage reservation details.

Information is easily available through the National Rail website and mobile app through Journey Planner.

Online – www.nationalrail.co.uk

Enter journey details on Journey Planner.

From the route options click on 'Details'.

Under 'Additional Info' select the Cycle and PlusBike icon and the cycle information tailored to the specific journey will appear.

Mobile – scroll down to 'Travelling with bicycles' or from the menu bar at the bottom of the app click 'More' and 'Cycles'.



For more information: nationalrail.co.uk/plusbike



Ease of access to internet information should be tested by having someone who is not familiar with the service look for it and give feedback. The data feeding into this must also be kept updated to deliver confidence in the information provided and to ensure it is accurate.

Social media and Smart Phone apps

Social media can create a 'community' that supports existing users and those who might be encouraged to adopt cycle-rail. It can also allow success stories to be passed on in a 'viral' way, and keep users up to date about disruption to cycle parking services (see Event management, page xx). TOCs should view their apps as an additional opportunity to promote cycle-rail and create short cuts to information on their websites. With regular monitoring of content, social media can help identify issues that need to be addressed and can be shared with the local authority if problems such as dangerous junctions or potholes are identified.



A reminder to keep up to date through Twitter and Facebook right next to the changing rooms provided for cycle-rail users at Leicester Station

Other means of promotion

These can be divided into on-station and off-station:

On-station	
Hoardings and posters	RDG research reveals that those visiting an unfamiliar station had a 75% confidence level in the information provided on posters and 81% confidence in maps provided. To maintain this level of confidence all forms of information should be updated regularly. Where posters or signs set out terms and conditions for cycle parking they should be placed in a prominent position to reduce conflict and complaints.
Staff	Staff are one of the best promotional assets and should be regularly briefed on the facilities available and how to get the best out of them.
Handouts	These can take the form of leaflets giving details of the cycle-rail facilities available at the station and on the line of route and maps of utility and recreational cycle routes locally. 'Giveaways' can be used as part of an individual promotional campaign.
Promotional events	Launching a new facility as a 'good news' story in partnership with the local authority and other stakeholders to get press coverage can be wide reaching. These events should not take place just for the press but throughout the day to reach passengers at peak morning and evening travel times. A range of supporting promotional activity should run throughout the year. Since an origin station for one passenger is a destination for another, promotion should take place on a line of route basis to capture the biggest market.
Off-station	
Campaign specific	Successful campaigns have used: <ul style="list-style-type: none"> • Bus shelters • Bus backs • Hoardings • Press adverts • Direct mail • Internet and social media.



Ely – Letting everyone know what's going on and how to get access

CASE STUDY – BIKE & GO PROMOTION, MERSEYRAIL

When promoting its Bike & Go cycle hire Merseyrail recognised a range of markets needs an appropriate response, launching a poster programme aimed at different potential customers. The cycle hire is also promoted on information screens sited at suitable locations with high levels of footfall.



Targeted marketing – tourist attractions



Shop window for bike hire



Targeted marketing – college students

Branding

Branding a service coupled with a line-of-route approach can be beneficial. Even regular travellers need to be made aware of services available through publicity linked to changes. The appearance of a new, strongly branded service at a station is unlikely to go unremarked.



A strong identity applied to cycle hire



8. MANAGEMENT, MAINTENANCE AND MONITORING

8.1 MANAGEMENT

Project management of new facilities
Delivering cycle-rail projects should be properly managed with sufficient personnel and financial resources to ensure

delivery on time and on budget: big projects require big commitment, especially in terms of staff time.

Issues to consider:	Why?
Clear understanding of project objectives	So everyone involved knows what is happening and why
Allocation of adequate staff resources	Ensure there are enough people on the job and recognise there may be a need to set other tasks aside/take on new staff
Identified project management roles	Know who is responsible for what activities and at what stage
Multi-disciplinary project teams where necessary	Projects may need other expertise, e.g. planning, architectural input
Involvement of stakeholders	Learn from them and keep them on side
Identified sources of funding for construction, future operation and promotion	It's not just the cost of providing it, it has to keep going
Identified progress reporting procedures	Who lets who know how things are going
Defined areas of responsibility for future operation coupled with adequate staff resources and funding	Make sure it runs efficiently into the future and recognise there might be a need to subsidise it in the early days
Staff training needs	Do not assume everyone will know what is going on
Triggers for future expansion	Set these at the beginning, keep an eye on it and be able to respond if more is needed

As explained, the process of issuing smart cards/fobs/locker use must be transparent, readily available to potential users and understood by staff involved in this activity.

Continual management

The running of the individual facility requires a high level of commitment to ensure everything functions properly and continues to meet users' needs.

Event management

The success of cycle racing events such as the 2012 Olympics, the opening stages of the Tour de France in London and the south-east and more recently Yorkshire, has shown that these events can create enormous demand for travel with their cycles among spectators. National Rail and individual TOCs have responded well to the challenges.

South West Trains (SWT) led the way with its involvement in the 2012 Olympics and its experience set the template for event management. Normal cycle carriage policy was maintained but passengers were discouraged from bringing bikes with them. All means available should be used to get the following message across: 'If you intend to travel with a cycle then the current TOC policy of cycle carriage will apply and space will be limited. If you are travelling with a cycle, then allow more time as you may be inconvenienced or delayed and the best advice is not to bring one. If you travel with a bike and there is space available, you will be accommodated at the train manager's discretion.'



National and international cycling events can create demand for spectating cyclists travelling with cycles

For local events and club rides, the local cycle forum can be useful in helping people understand they cannot turn up en masse and expect that large parties and their cycles will be accommodated. This applies as much to off-peak as peak services. A large number of cycles in vestibules and gangways can create safety hazards for all travellers.

CASE STUDY – 2014 TOUR DE FRANCE, NORTHERN RAIL, CYCLE-RAIL AWARD WINNER 2014



More than 2.5 million cyclists, tourists and spectators descended on Yorkshire for the Tour de France Grand Depart. Northern Rail helped create the biggest event its network had ever seen in terms of scale, planning and delivery. With several key roads closed for the event, pressure was on the rail network to provide the bulk of transport solutions. Building on SWT's experience during the 2012 Olympics, planning commenced in August 2013 with the theme 'Taking you to the Tour.' Northern Rail joined forces with Network Rail, BTP and other TOCs, and Welcome to Yorkshire and the TdF Hub to devise a masterplan to make the most of this opportunity.

The website shared information on cycling facilities and access to each station around the race route to encourage spectators to get on their bicycles. Staff were fully briefed and had a dedicated intranet site packed with resources, briefings and tour maker packs for all volunteers. Staff and volunteers were encouraged to record and share their cycle journeys in the lead-up to the event, engaging and inspiring all involved.

Northern Rail's key objective was to deliver a successful event and enjoyable experience for customers, while maintaining its cycling policy of two bikes per train. It also wanted staff to be fully engaged, to meet the needs and wishes of the Northern Rail Cycling Forum and to deliver on revenue targets.

Disruption management

During the continual redevelopment and refurbishment of stations across the network it is sometimes necessary to close the station to all travellers. When this happens, meeting the needs of cyclists to the station and taking their cycles beyond it should be considered as part of the project's customer service plan.

CASE STUDY – CLOSURE OF NOTTINGHAM STATION, EAST MIDLANDS TRAINS

Major works at Nottingham station meant the station closed for more than a month, causing disruption. As part of the customer service plan, cyclists were considered alongside foot passengers from day one and not discounted as being too difficult to accommodate.

East Midlands Trains consulted with and worked alongside many local cycling groups to find out how they thought the disruption to cyclists could be minimised and implemented these ideas, such as temporary additional cycle storage racks at key stations. Alongside this, East Midland Trains allocated cycle spaces on replacement bus services. Additional vehicles were drafted in at peak times, purely to carry bicycles to their destination stations. In describing the project, East Midland Trains' overall position was that "It wasn't an easy thing to do, but it was the right thing to do".



Building works should not impact on cycle parking. Where this is unavoidable alternative provision should be made

When something unexpected happens with a large project, a key element of customer service delivery is being able to respond appropriately. Disruption to rail activities can take many forms. Trains may arrive late due to unforeseen incidents and cause minor inconvenience. More serious events, such as security alerts, can close or restrict access to stations. Station management plans should, therefore include control of and access to cycle-rail facilities during such events, especially where parking depends on electrical

operation. Personnel need to be aware of the procedures necessary, for example, to release cycles from secure compounds if there's a power failure or the checking of cycle parking/storage areas, including cycle hire from vending machines or lockers, if there's a security alert. A social media community can also help keep users informed in such situations.



It may be secure but what happens if there's a power cut?

8.2 MAINTENANCE

Cleaning

Once the cycle rail facility is in place, quality service delivery will depend on the management regime in place from keeping it clean to regular checks on hire cycles to keep them operational.



Dirty parking areas are not an encouragement to use



Suitable signage can give a clear instruction

Repairs to cycle parking stands

Sheffield stands require little maintenance, but the upper tiers of two-tier racks have moving parts that can fail over time and as the result of misuse or a failure to use locking or non-tamper nuts and bolts. The investment in such stands must be matched by a programme of scheduled, as well as reactive, maintenance.

CASE STUDY – NUMBERING OF CYCLE RACKS, MERSEYRAIL

Merseyrail has assigned a unique reference number to each of its two-tier racks so any that become unserviceable can be readily identified. This enables the location, number and fault to be passed quickly to maintenance staff. The same numbering allows easy identification of any hire cycle reported as needing attention, as hire cycles share reserved spaces in the same racks.



Passengers' and hire cycles share the same racks

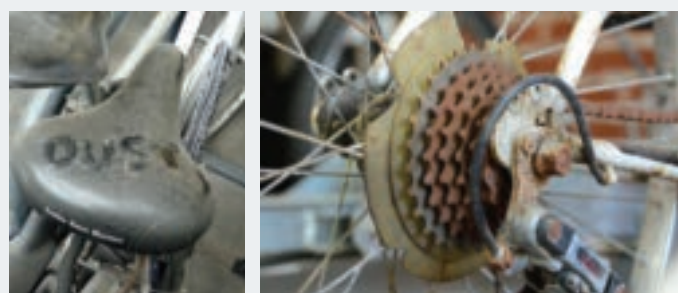
Removal of abandoned cycles

The maintenance of cycle parking areas should include the removal and disposal of abandoned cycles. Cost-free disposal can often be achieved through partnership working with the local authority and cycle-recovery charities.

Regular inspections to look for abandoned cycles or those parked in unauthorised areas should be part of the cycle-rail management programme. A good indication of unwanted cycles can be flat tyres, dust on the saddle or corroded components; especially gears and chains. In towns and cities with a high student cycling population, students should be warned that leaving their cycles parked over the long summer break may mean they are not there on their return.

The Netherlands introduced an electronic monitoring system to reduce the parking capacity lost due to abandoned cycles. It monitors how long a cycle has been in place using an electronic detector in the channel of every two-tier rack. The detector is triggered by the placing and removal of a cycle and enables the parking operator to tell how long an individual space is occupied. This system is currently being developed in the UK.

Automatic detection would enable TOCs to monitor in real time not only occupancy levels but also daily, weekly and annual patterns of parking for individual stations and the wider network. Such a system would also be able to provide real-time cycle parking information for cycle rail users through the websites and apps of National Rail Enquiries and individual TOCs.



Dust and rust can be an indication of abandoned cycles

The right to remove and dispose of cycles should be in the station's terms and conditions of use and clearly displayed in parking areas. This will minimise challenges if there is a dispute. Cycles should be removed after an appropriate notification period identified by a suitable note attached to the handlebars.



Terms and conditions including the statement 'Abandoned bikes will be removed and stored for two weeks before being donated to a local charity'

A durable plastic tag can achieve registration and identification of individual cycles and their owners.



Cycle parking for season ticket holders only. Cycles without a tag will be removed



The storage of removed cycles needs to be secure with a plan for disposal in place

CASE STUDY – REMOVAL OF ABANDONED CYCLES, BRIGHTON, SOUTHERN

A tag attached to the frame warns owners that a cycle has been identified as left in the wrong place or appears to be abandoned. The tag clearly states the cycle will be removed within 24 hours of the time shown (the edges can be clipped to show month, day and date). It also states why this will happen and for how long it will be made available after removal so the owner can reclaim it and the fee payable for its return. Finally, the owner is warned that if it is not reclaimed it will be disposed of.



Warning sign attached to cycle

If cyclists insist on parking where they are warned not to, and formal parking is available, it is suggested that the cost of retrieval should include membership of the hub on payment of the appropriate fee. This makes the fine punitive but encourages the owner to do things properly. In all cases, cyclists should be made aware of the conditions that apply to parking at the station. The cycle rail forum or local user groups can provide information about local charity groups that recycle unwanted cycles.

8.3 MONITORING

Cycle parking levels

Monitoring a scheme for one year after its completion, showing usage of the facility, is a contractual requirement of all projects financed by the Cycle-Rail Fund. Given central government's financial support in recent years, it is natural for it to seek measure of the success of investment in cycle-rail, especially if further expansion is to be justified. Monitoring enables the setting of base lines, measurement of change and progress towards any targets set.

TOCs should measure regularly (at least annually) the following¹ for each station on their network:

1. Number of cycle stands
2. Number of cycles parked
3. Number of hire cycles available
4. Number of hires
5. User satisfaction levels² plus:
 - Time/distance cycled to the station
 - How often
 - All year round?
 - Whether use is affected by weather
 - What mode of transport would be used if not cycle
 - Route to the station.

RDG presently organises a national audit in partnership with TOCs that meets these criteria.

¹ It is expected that this will be undertaken by station staff at roughly the same time each year during the 'neutral months' of April, May, June and September and not coincide with public or school holidays.

² There will be benefits in carrying out this type of monitoring in partnership with the local authority, possibly as part of the process of creating a station travel plan (see page 32), which may well be able to help analyse this and additional data such as post code information identifying trip origins.

For the preferred form of cycle parking audit to cover items 1 to 4 above, see Appendix F.

Customer satisfaction

Establishing users' satisfaction levels can only be achieved by direct contact, either by interview or postal surveys. Surveys can be handed out or a questionnaire attached to a cycle for its owner to complete. A prize draw can influence

levels of return with the winner(s) receiving either a cycling related product or a voucher for travel.

This kind of survey is best achieved in partnership, possibly as part of a station travel plan. Local user groups may be prepared to undertake interview surveys on behalf of a TOC. The National Rail Passenger Survey provides a good template on how to record satisfaction, with the participants invited to record their views like this:

Question X

How satisfied are you with ...?

- ☐ Very satisfied
- ☐ Fairly satisfied
- ☐ Neither satisfied nor dissatisfied
- ☐ Fairly dissatisfied
- ☐ Very dissatisfied
- ☐ Don't know/no opinion

This approach enables a numerical value to be given to each individual response so results can be analysed.

Issues that may be surveyed depending on the facilities at the station include:

- How easy was it to find out where the parking is located?
- How easy is it to get to it?
- Are you satisfied with the type of parking?
- How secure do you feel your cycle is?
- How secure do you feel when using it?
- How easy was it to find out how to get a key to the secure compound?
- How easy was it to get a key/card/fob?
- Are you happy with the cost?

To these can be added general open questions such as:

- What would you like to see improved?
- If you cycle but do not use the compound, what would change your mind?
- What area of the town/city did you cycle from?*
- What could be done to improve the route you take?*

*The answers to questions like these can be shared with/developed together with the local authority

Having developed a survey that suits either an individual station, or stations sharing similar facilities within the network, it is essential that it be repeatable and the information gained recorded and accessible. This enables surveys to be repeated annually or on the introduction of new parking equipment/systems to monitor progress.

9. WORKING IN PARTNERSHIP

9.1 POTENTIAL PARTNERS

As mentioned before, there are benefits of working in partnership to achieve effective implementation of facilities and delivery of cycle-rail services. See Appendix E for a list of potential partners.

9.2 CYCLE-RAIL FORUMS

Increasingly, the need to demonstrate stakeholder engagement with cyclists is key to franchise bids and cycle forums are the recognised and preferred way of achieving this. It is also a prerequisite for unlocking funding from government for cycle-rail initiatives. A forum also creates an opportunity for a dialogue between cyclists and the train companies – fostering better understanding by both. Forums are **useful to TOCs** because they:

- Demonstrate real commitment to cycle-rail integration as part of sustainable travel objectives
- Offer a convenient channel to communicate to cycle users where customer co-operation is important (e.g. operational constraints or the arrangements to be made for events such as the Tour de France)
- Provide access to the first-hand experience of travellers using bicycles and their practical suggestions for improvement
- Help draw on the practical knowledge of users when planning and implementing projects (e.g. on the optimal siting of new cycle parking on stations)
- Create a convenient way of involving other agencies responsible for sustainable travel, e.g. local planning and highway authorities, PTEs, CRPs, national parks authorities and travel and cycling organisations
- Help frame formal plans and strategies for cycle-rail integration and are a source of independent monitoring of TOC performance
- Potentially become a model for interacting with other groups of users with common concerns and interests.

They are useful to cyclists because they:

- Improve mutual understanding and trust
- Enable cycle users to contribute to TOCs' strategies, investment plans and projects
- Help find common ground on matters of frequent complaint or concern to cycle users and find ways forward
- Enable cycle-users to feed in constructive suggestions for improvements in facilities and services, including suggestions for useful new cycle-rail projects

- Can educate and inform about plans and proposals beyond the railway station through hearing presentations by local authorities, PTEs and others
- Facilitate networking at meetings and through social media between the TOC and other agencies
- Enable users to monitor and give feedback on the TOC's performance against its adopted targets and objectives.

CASE STUDY – CYCLE FORUM, NORTHERN RAIL CYCLE-RAIL AWARD WINNER 2011



Signage for bikes and wheelchair access was an initiative of the Northern Rail Cycling Forum

Northern Rail's approach to stakeholder engagement exemplifies best practice. The Northern Rail Cycle Forum meets three times a year and was responsible for delivering Northern Rail's Cycling Strategy. It has more than 150 members and 40 regular attendees. Lessons learned from the experience of the forum indicate that a successful user's forum should:

- Seek to include as wide a range of individuals and organisations as possible, with a thoughtful and constructive approach to cycle-rail integration in the TOC's area
- Meet regularly at different geographical locations within the TOC's area to pick up on local developments
- Offer members real involvement in planning strategies and offering feedback on outcomes
- Have the capability to respond quickly and constructively to comments, between regular meetings, including through social media
- Encouraging involvement and inviting presentations on cycling developments from external bodies – linking these with the TOC's own plans and projects
- Make attending meetings interesting, including workshops or other hands-on activities and offering optional cycle rides before and/or after the meeting.

Support can be given to forums in various ways. For example, one TOC provides travel passes for the secretariat to get to meetings. It also provides passes for cycle trainers so they can get to schools to deliver cycle training.

10. CYCLE CARRIAGE

10.1 WHO IS THIS PART OF THE GUIDE FOR?

This part of the toolkit is aimed at those designing new or existing rolling stock, with the goal of informing carriage design.

Introduction

This guidance is a good practice toolkit. It has no legal standing and is not, therefore, mandatory. Nevertheless, it sets out the principles that each TOC should consider to find solutions meeting operational and customer requirements. While the carriage of cycles is a key element of cycle-rail, operational safety may occasionally overturn normal cycle carriage rules. These policies will be governed by a range of issues including the demand for passenger space and the nature of its rolling stock.

10.2 LEGISLATION, FRANCHISE SPECIFICATION AND NATIONAL CONDITIONS OF CARRIAGE

EU requirements

The EU's position³² is: "Railway undertakings shall enable passengers to bring bicycles on to the train, where appropriate for a fee, if they are easy to handle, if this does not adversely affect the specific rail service, and if the rolling-stock so permits."

This does not mean that cycles must be accommodated but that TOCs should do so as long as it does not get in the way of running the service and on-board facilities. 'Adversely' affecting the service is taken to mean cycle carriage must neither create undue delays to trains nor compromise the safety and convenience of other passengers.

UK franchise requirements

There is no franchise requirement that facilities for cycle carriage must be provided on any train. It is, however, expected that TOCs will aim to provide for a minimum of two spaces per intercity passenger train and as many as can be reasonably accommodated within local trains, depending on an individual TOC's separate agreements with DfT and its cycle-rail policies, and other recognised restrictions.



National conditions of carriage

The national conditions of carriage³³ regarding cycles are:

S. 48: Cycles – Train companies allow cycles to be conveyed by train with the exception of a few routes. However, restrictions may apply at particular times of day and/or days of the week. A charge may be made for conveying a cycle and a reservation may be required. The ticket seller must tell you about these restrictions and any charges if you ask when buying your ticket.

This is qualified by Section 49 which specifically mentions cycles:

S.49: Restrictions – Any Train Company may refuse to accept an item of luggage, an article, an animal or a cycle, even though it meets the requirements set out in Condition 47 and 48 and Appendix C, if, in the opinion of its staff: (a) it may cause injury, inconvenience or a nuisance or it may cause damage to property; (b) there is not enough room for it; (c) the loading or unloading may cause delay to trains; or (d) it is not carried or packaged in a suitable manner.

Note: Reference to section 47 and Appendix C relates to general conditions covering luggage and non-standard, e.g. over-large items

General issues

There is no expectation that non-standard cycles, even when used as a mobility aid, and tandems will be accommodated. Folding cycles when fully folded may be classified as luggage: this does not apply to those whose ability to fold is confined to folding the frame in two: these are to be treated as standard cycles. The leaflet *Cycling by Train 2016*³⁴ sets out the position as follows: "Compact, fully folding cycles with wheels up to 20" in diameter are carried without restriction on all trains (when folded down), however you may be required to cover the cycle and place it in luggage racks. You may also be required to fold the cycle before passing through the ticket barrier."

³² Article 5 – Bicycles, REGULATION (EC) No 1371/2007 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 October 2007 on rail passengers' rights and obligations

³³ National Rail Conditions of Carriage, National Rail 2015

³⁴ *Cycling by train*, Network Rail 2016



Fully folded cycles may be treated as luggage

Where space is identified for the use of wheelchair users, no equipment for the carriage of cycles is permitted within that space (see Disability issues below).

Cycles should not be stored in locked compartments if avoidable, as this places responsibility for their security on the TOC, since passengers have the right to claim compensation for theft or damage. It can also introduce delay to the service as train managers will have to be present to release them.

10.3 BASIC PRINCIPLES GOVERNING THE CARRIAGE OF CYCLES

All cycle storage space for cycles should be regarded as 'flexible' and available for use for other purposes when not required for cycle storage. However, appropriate signing within the carriage (see Internal signage on page 59) should make it clear and be referenced in an individual TOCs conditions of carriage that priority for use is:

1. Cycles
2. Luggage*
3. Pushchairs*
4. Passenger use*

* where appropriate - see below

Different space in different rolling stock

Cycle storage space will vary according to the purpose of the rolling stock i.e. intercity or local (inter-urban/metro/suburban). For intercity trains the preferred solution is space

dedicated to cycle storage but with the option of use for luggage at the discretion of the train manager if no cycles are present. This can be facilitated by the use of fold-down shelves that can also accommodate folded cycles.

Disability issues

The space provided for cycles on local trains could have the greatest range of uses. It is usually fold-down seating that creates space for cycle storage. Unfortunately, these seats are often occupied by passengers who like the legroom they offer. The spaces are also close to the doors, which permits a speedy exit. Cyclists have complained they are unable to store their cycles properly and this can lead to conflict with passengers and disagreements with guards. Thus clear concise signing should be provided, stating that only if the space is not wanted for cycles may passengers occupy the seats. When cycle storage facilities are provided on trains, ensure these do not compromise access for disabled people.

Mandatory accessibility standards have applied to all new trains in Britain since 1998. They detail various requirements that make rail travel easier for people with disabilities, including providing wheelchair spaces (the minimum number depends on the length of the unit). Wheelchair spaces must not be designed for sharing with other users, such as cyclists. This is because wheelchair users cannot travel elsewhere on the train if the space is occupied. Instead, if on-board cycle storage facilities are specified, these must be in addition to space provided for wheelchair users.

The Technical Specification for Interoperability – Persons of Reduced Mobility (PRM TSI) is the accessibility standard that has applied to all new trains across Europe since 2008. This specification states explicitly that:

4.2.2.2 (8) It is not allowed to install any permanent equipment such as bicycle hooks or ski racks into the wheelchair space or directly in front of it.

Designs that do not comply with these requirements cannot be approved for entry into service.

The law requires all trains to meet the access standards by 1 January 2020, and programmes are under way to ensure appropriate work to older units takes place ahead of this deadline.

The Government recognises that retrospectively fitting two wheelchair spaces to an older two-vehicle unit that did not originally have them can affect other users. Having consulted its disability advisers, it will allow the second of

those spaces on such vehicles to be provided for other uses, including cycle storage. This is on the condition that signs within that space make clear that wheelchair users always have priority for that area, and that staff are briefed and empowered to enforce it. This relaxation only applies to one or two car units that were built before 1999.

To support disabled or older people, designers of on-board cycle storage should avoid large, open areas without adequate handholds or handrails for support, and ensure that designs do not leave cycles where they might become a hazard, particularly for people with impaired vision.



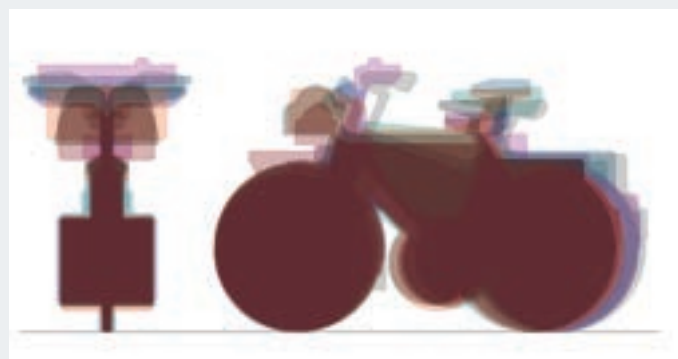
Cycle placed in wheelchair space despite the sign indicating 'no luggage'

10.4 BEST PRACTICE

Dos and don'ts

Designers' experience shows that 'design by spreadsheet' based on a standardised cycle and envelope is the wrong approach. The diagram illustrates that cycles vary considerably in height, wheelbase, pedal and saddle and handlebar position. The same applies to position of cables, pannier racks (front and rear), mudguards and lights. One size will not fit all. A diagram showing the greatest dimensions encountered (put together with the help of the Bicycle Association and further practical investigation) is in Appendix H.

The weight of cycles can also vary enormously, from as little as 6 kilos for road cycles to around 30. This should be taken into account when deciding to use hooks to hang cycles from and the effort required to use them.



At every stage of design it is essential to demonstrate how things can be done, preferably by involving stakeholders, and by employing a range of cycle and wheel types. If we want cyclists to behave in a desired way, we should plan adequately for their responses. Facilities designed as an afterthought are likely to cause operational problems. A table setting out design best practice and the operational issues that arise if not followed is in Appendix I.

CASE STUDY — DCA DESIGN INTERNATIONAL FOR HITACHI RAIL EUROPE

When designing the new Intercity Express Passenger (IEP) train, DCA consulted not only user groups but also the Cycle Rail Working Group. The result is a flexible storage space for cycles that includes drop-down shelves for luggage or folding cycle storage, which both the rail industry and stakeholders are happy with.

The outer cycle may be swivelled to the side to allow the inner one to be removed and the central divider folds out of the way to permit the two shelves to be folded down. The doors are intended to be closed during travel but not locked.

- Exploring all potential options with the aid of stakeholders is essential
- The position of the upper hanging and lower brackets needs to be optimised with respect to height and width to support the removal of the in-board cycle (adjacent to the body side)
- The brackets should be painted in a contrasting colour allowing for easier identification.
- Hooks should be large enough to support a range of wheel types
- Adequate ceiling height is essential to avoid cycles resting on the floor
- Any central divider should have a durable protective material
- That signage should be developed to support the storage process.



Final mock-up

© DCA Design International for Hitachi Rail Europe



Tyre and wheel rim profiles together with spoke density will vary with cycle type

CASE STUDY – SEYMOUR POWELL FOR ANGEL TRAINS

As part of the design proposals for the re-fitting of Class 156 and 158 trains, Seymour Powell explored the opportunity to fit four cycles in either upright or horizontally. The wheel slots were built into the furniture to minimise maintenance. In the Class 156 example, using the hook provided means the inner cycle is more easily removed and regular passengers are likely to recognise the benefits of using a 'one up, one down' approach. In both cases the doors to the carriage were sited beyond the cycle storage space, reinforcing the concept that this area has a purpose other than passengers seating.



Angel Trains Class 158 Concept Design – horizontal only
© Angel Trains



Angel Trains Class 156 Concept Design – upright or horizontal
©Angel Trains



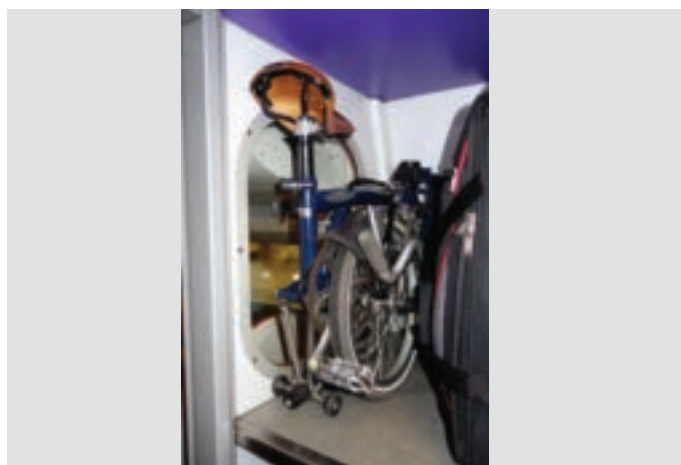
German example showing how the hanging angle means weight of cycle presses into the lower rack to stop it swinging. Note how the cycle does not impede use of the gangway



An example of a train where no dedicated space has been allocated, cycles left unaccompanied in the vestibule can cause damage to the carriage and obstruct other passengers. Where this is permitted, cyclists should be advised to place their cycles on the right hand side of the direction of travel



Inadequate luggage space may lead to folding cycles as well as other luggage being left in gangways and vestibules



Folding cycle visible from within the carriage



Source: UKCA

Space flexible enough to be used for seating, luggage and cycles. The grab rail helps support cycles but increases time required to extract inner cycle. Siting the draught screen beyond the cycle storage will encourage passengers to move further into the carriage to find a seat



Source: UKCA

Where height is limited, the use of floor rails allow for semi-vertical storage – a raised floor with channels and fold-down shelves would make space more flexible, however these limit the use and flexibility of the space and should not be used in areas that passengers may also occupy



Merseyrail

Alternative approaches to flexible space



ScotRail

Alternative approaches to flexible space

When looking to emulate examples found on mainland Europe that appear to offer considerable storage space, bear in mind that such rail services do not enjoy the same levels of passenger and luggage demand as experienced in the UK.

10.5 DESIGNING FOR SAFETY

Designing for safety within any form of rolling stock is complex. See Appendix J for guidance from the Rail Safety Standards Board regarding cycle storage.

10.6 CARRIAGE SIGNAGE

External signage

Clear signage on the outside of the carriage is essential to prevent loading cycles from causing delay to the service because cyclists are at the wrong end of the train. The same applies to the loading of push chairs where space is carriage specific. Signs indicating which carriages provide suitable storage should be as large as possible, above head height and easily seen from some distance along the platform; preferably the length of the train. Where the livery of the operating TOC does not permit a carriage height sign, any signage should be mid to high level i.e. eye height or above.



This is too small



Bigger and higher is better



This example from Denmark represents the best approach



Helpful information

CASE STUDY – CARRIAGE CYCLE SIGN, GREAT WESTERN



Great Western developed a simple cost-effective approach to signing carriages that store cycles. It achieved this by attaching a cycle sign (in a colour matching its livery) to the outside of the appropriate carriage window. This does not impact on the view out since passengers occupying the drop-down seats when not required for cycle storage are facing inwards.

Internal signage

Signs used to explain the hierarchy of users of cycle storage areas (cycles > luggage > push-chairs > seating) should be clear that cycle storage comes first. For example, if there are drop-down seats, and the purpose of the space is not self-explanatory place a cycle logo on the underside of the seats with an unequivocal statement that says: **These seats may only be used if not required for cycle storage or Passengers must vacate these seats if required for cycle storage.** A similar approach might be used for flexible space on intercity trains to the effect that luggage may be stored only if not required by cyclists.



Signs aimed at cyclists should provide clear instructions on how to store their cycles

11. INNOVATION AND SHARING SUCCESS

Cycle-rail provides opportunities for innovation. Where new and innovative approaches have been found to be successful, the experience should be shared across all rail networks. This can be achieved by submitting projects to RDG's annual National Cycle Rail Awards.

CASE STUDY – FOLDING CYCLE STORAGE AT DfT HEAD OFFICE

The storage lockers provided at the DfT's Marsham Street offices in London illustrate an innovative solution that could be transferred to cycle-rail services. Folding cycles have become popular for the onward journey in London (and elsewhere). This popularity has made them special targets for thieves, so they are particularly vulnerable to theft on-street. To save visitors who have arrived in this manner having to carry their cycles to meeting rooms, DfT provided open-fronted lockers secured by a key in the reception area.



Source DfT

APPENDIX A: USEFUL SOURCES OF INFORMATION

Guide to Station Planning and Design

<http://www.networkrail.co.uk/aspx/6368.aspx>

Understanding the business case for investment in cycle-rail – demand modelling and cost benefit analysis

<http://www.rssb.co.uk/research-development-and-innovation/research-and-development/research-project-catalogue/t1034>

Vision for Stations – Nine principles for the future of Britain's stations

http://www.raildeliverygroup.com/files/Publications/2015-10_vision_for_stations.pdf

Network Rail Corporate Responsibility Report 2011

[http://www.networkrail.co.uk/uploadedFiles/networkrail.co.uk/Contents/Publications/Corporate_responsibility_report/2010\(1\)/Common/Network_Rail_Corporate_Responsibility_2010_2011.pdf](http://www.networkrail.co.uk/uploadedFiles/networkrail.co.uk/Contents/Publications/Corporate_responsibility_report/2010(1)/Common/Network_Rail_Corporate_Responsibility_2010_2011.pdf)

Central London Rail Termini Report

<http://content.tfl.gov.uk/central-london-rail-termini-report.pdf>

Value for Money Assessment: Advice Note for Local Transport Decision Makers DfT

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/267296/vfm-advice-local-decision-makers.pdf

Bike 'n' Ride

http://www.cycle-rail.co.uk/wp-content/uploads/2012/05/20110712-BnR-Evaluation-ReportFINAL-v3_1.pdf

Cycling and Walking Implementation Strategy

<http://www.legislation.gov.uk/ukpga/2015/7/part/2/enacted>

Inclusive Mobility

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/3695/inclusive-mobility.pdf

LTN 2/08 Cycle Infrastructure Design

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/329150/Ltn-2-08_Cycle_infrastructure_design.pdf

Cycling England Guidance Note B 10

http://www.ciltuk.org.uk/Portals/0/Documents/The%20Hub/Design%20Toolkit/B10_Design_portfolio_wheeling_channels.pdf

Sustrans standard detail – wheeling ramp

<http://www.sustrans.org.uk/sites/default/files/images/files/migrated-pdfs/53%20-%20Wheeling%20ramp.pdf>

Managed Stations Wayfinding – Design Guidelines and Specifications Version 2 2011

<http://www.networkrail.co.uk>

Guidance on the Preparation of Station Travel Plans

<http://live-cycle-rail.pantheon.io/wp-content/uploads/2012/05/STP-Toolkit-low-res-web.pdf>

Station Travel Plans – Research Toolkit

<http://www.cycle-rail.co.uk/wp-content/uploads/2013/05/stp-research-toolkit.pdf>

Bike Train Bike – Guidelines to implement BiTiBi

<https://ec.europa.eu/energy/intelligent/projects/en/projects/bitibi>

Better Rail Stations Report

<http://collections.europarchive.org/tna/20100409091328/>
<http://www.dft.gov.uk/pgr/rail/passenger/stations/betterrail-stations/pdf/report.pdf>

Investment in Cycle Facilities at Rail Stations

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/4780/f0007821-report-investment-cycle-facilities-rail-stations.pdf

Motorcycle parking at rail stations

<http://www.atoc.org/latest-publications>

National Rail Passenger Survey

<http://www.transportfocus.org.uk/research/national-passenger-survey-introduction>

REGULATION (EC) No 1371/2007 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 October 2007 on rail passengers' rights and obligations

<http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32007R1371&from=EN>

National Rail Conditions of Carriage

<http://www.nationalrail.co.uk/static/documents/content/NRCOC.pdf>

Cycling by train

<http://www.nationalrail.co.uk/css/CycleLeaflet2015.pdf>

Guidelines for development management for stations

<http://www.atoc.org/latest-publications>

Guidelines for development management for stations: 'how to' companion guide

<http://www.atoc.org/latest-publications>

British Transport Police

BTP Crime Prevention Design Adviser (CPDA) at crime-reduction@btp.pnn.police.uk

BTP Counter Terrorism Security Adviser (CTSA) at CTSA@btp.pnn.police.uk

APPENDIX B: WIDER COUNTER TERRORISM SECURITY CONSIDERATIONS

KINDLY PROVIDED BY DfT'S LAND TRANSPORT SECURITY TEAM

Station Operators' security obligations

DfT sets and enforces counter terrorist security measures on the national domestic railway network. As it is an open system carrying large numbers of passengers to and from thousands of stations, the aims are to reduce risks while allowing people to travel freely, and for protective measures to be proportionate to the threat without impacting unduly on the industry's ability to operate a public transport service. Station and train operators have legal obligations under the National Railways Security Programme (NRSP), and a Nominated Security Contact (NSC) who is a key communication channel with DfT and other stakeholders on the railway security regime.

How does this affect cycles and their storage?

Key NRSP security measures include assisting detection/deterring terrorists and limiting areas of potential concealment. The NRSP therefore contains measures relating to cycles and their storage at railway stations, including on the provision and siting of bike parking facilities on the station, and security checking of these. The precise requirements for new cycle installations will vary according to what these are and the stations' individual circumstances, and in certain instances these are mandatory.

I'm planning a new cycle initiative – what should I do?

If you are planning a new cycle initiative on a station, please be aware from the outset that there may be associated security requirements to be met, and that it is best to factor these into your plans from the start, saving you time, money and effort. The following people can help and guide you with specific advice, and we suggest that you get in touch with them at the start of the planning/design process:

- Your NSC
- The Land Transport Security Team at DfT (Sandra Iles is the lead policy official on National Railway Security policy, please contact her at landsecurity@dft.gsi.gov.uk).

We suggest that you make the NSC your first port of call, for security related information and guidance, and that you include DfT in any substantive discussions on railway security policy issues (e.g. design/operation in security terms of new cycle storage initiatives). DfT can advise on whether new operating protocols/procedures or a trial of the initiative are needed, bearing in mind station operators' obligation to demonstrate compliance, and the need to avoid unintentionally importing additional potential security risks. Both DfT and the NSC will be happy to discuss and provide constructive feedback on your plans and proposals, from a railway security perspective.



APPENDIX C: CYCLE STORAGE FACILITY CHECKLIST

STORAGE FACILITY CHECKLIST

Yes No*

DESIGN

1. Have crime levels at the station and in the surrounding area been considered when designing the facility?	YES <input type="checkbox"/>	NO <input type="checkbox"/>
2. Have the correct people been consulted on the project (see below)?	YES <input type="checkbox"/>	NO <input type="checkbox"/>
3. Has planning approval/historic building consent been sought if required?	YES <input type="checkbox"/>	NO <input type="checkbox"/>
4. Has contact been made with the BTP Crime Reduction Unit for CPDA advice? Is CTSA advice required?	YES <input type="checkbox"/>	NO <input type="checkbox"/>
5. Is the storage facility sited so that it will not obstruct trains drivers' lines of sight, obstruct pedestrian (especially visually impaired people) or vehicle routes, emergency egress routes or rendezvous points (RVPs)?	YES <input type="checkbox"/>	NO <input type="checkbox"/>
6. Can the storage facility be seen from the natural approach to the station and is there clear signage directing users to the facility?	YES <input type="checkbox"/>	NO <input type="checkbox"/>
7. Is there good natural surveillance of the facility from as many angles as possible? Can any solid obstructions or vegetation be cleared to allow for this?	YES <input type="checkbox"/>	NO <input type="checkbox"/>
8. Can the storage facility be easily accessed by cyclists without detour or delay?	YES <input type="checkbox"/>	NO <input type="checkbox"/>
9. Are approach gradients appropriate and do any steps have ramps?	YES <input type="checkbox"/>	NO <input type="checkbox"/>
10. Are lifts of adequate size and if not, are alternative routes satisfactory and steps fitted with ramps where necessary?	YES <input type="checkbox"/>	NO <input type="checkbox"/>

11.
Is the space between racks adequate and are aisles wide enough?
- YES ☐ NO ☐
12.
Do the stands adequately support the cycle and permit the frame and both wheels to be locked?
- YES ☐ NO ☐
13.
Will the diameter and wall thickness of Sheffield type stands be thick enough to resist determined cutting to release the cycle?
- YES ☐ NO ☐
14.
Will the storage facility be securely fixed to the ground, provide long-term stability and be fitted with anti-tamper bolts/devices?
- YES ☐ NO ☐
15.
Is the facility visible to station staff?
- YES ☐ NO ☐
16.
Are the racks subject to natural light?
- YES ☐ NO ☐
17.
If there is a canopy, is this arranged so that it does not obstruct natural and CCTV surveillance
- YES ☐ NO ☐
18.
Does any perimeter fencing provide a secure boundary and are there clear views in and out?
- YES ☐ NO ☐
19.
Does the design of lockers permit inspection of contents?
- YES ☐ NO ☐

CCTV

20.
Does the CCTV provide the recommended coverage (as per the BTP Output Requirements document)?
- YES ☐ NO ☐
21.
Is it capable of producing a 'recognition' level image?
- YES ☐ NO ☐
22.
Is the CCTV registered with the Information Commissioner?
- YES ☐ NO ☐
23.
Is Data Protection Act compliant signage clearly displayed informing of use of CCTV?
- YES ☐ NO ☐

LIGHTING

24.

Is the lighting compliant with levels recommended?

YES ☐NO ☐

25.

As well as the parking areas, are routes to and from them lit?

YES ☐NO ☐

26.

Has an assessment been undertaken to ensure good uniformity and colour rendition and Is the lighting compatible with the CCTV?

YES ☐NO ☐

MANAGEMENT, MAINTENANCE AND MONITORING

27.

Is there an inspection plan available to ensure the facility is maintained and its use monitored?

YES ☐NO ☐

28.

If hire schemes or access control compounds are used, is there a clear management process in place to ensure the facility is appropriately used?

YES ☐NO ☐

29.

Will the cycle racks be properly installed according to the manufacturer's instructions: are they securely embedded in the ground (where appropriate) and are all nuts and bolts locking or anti-tamper?

YES ☐NO ☐

30.

If lockers are used can the contents be checked?

YES ☐NO ☐

31.

If lockers are used is there an adequate usage and key management system in place?

YES ☐NO ☐

ADVICE TO USERS

32.

Is there clear crime prevention advice displayed, including the correct use of the facilities and how to fully secure a cycle?

YES ☐NO ☐

33.

Is there a poster board or space provided for crime prevention messages and cycle theft initiative information?

YES ☐NO ☐

34.

Will the facilities be supported by measures such as web/ social network based information as well as signage (where necessary) and station announcements?

YES ☐NO ☐

* Any 'no' response will require action to address

APPENDIX D: CYCLE PARKING DIAGRAMS

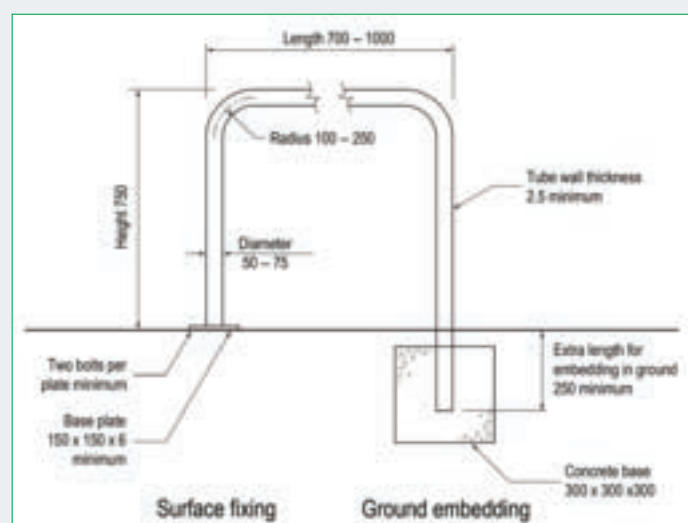
All diagrams © Transport Initiatives (except Diagram 1)
(All dimensions in mm – not to scale)

The following drawings will help with the design of any Sheffield stand layout. Where appropriate, the drawings also include adequate space to ensure clearance from passing pedestrians and other site traffic. Where the preferred dimensions cannot be met the minimum is only acceptable where it can be proven that the use of the parking provided is convenient and acceptable to users.

The manufacturers of two-tier parking equipment will be able to help with the layout of their products and may even be able to offer a design service.

Large areas of parking can benefit from being broken up into defined sections by colour of stand or numbers. This will help users remember where they left their cycles.

DIAGRAM 1: BASIC SHEFFIELD STANDS

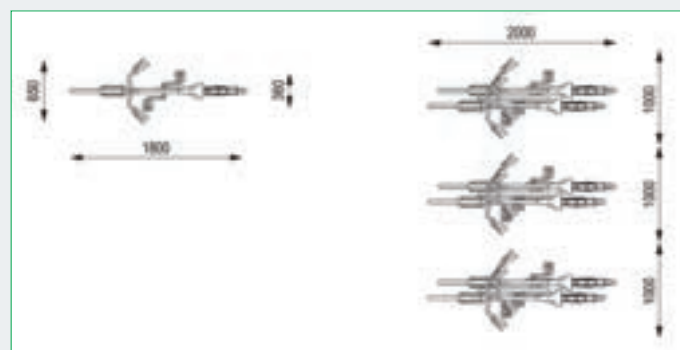


Note: Based on London Cycling Design Standards – A guide to the design of a better cycling environment, TfL 2005

Stands should always be installed in accordance with the manufacturer's instructions.

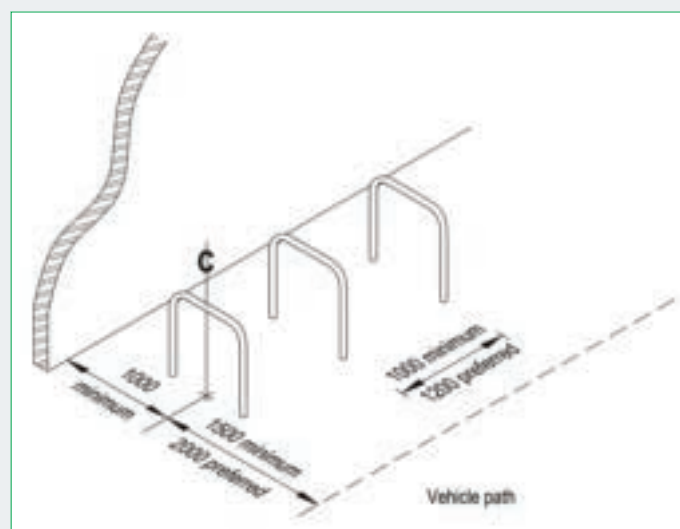
When identifying space for bikes, it be aware that they are, on average, 1,800mm long and 650-700mm wide, depending on handlebar width. When two bikes are parked either side of a single stand they should be staggered to avoid a clash of handlebars or pedals. This creates a footprint of 2,000mm x 1,000mm. This dimension is useful in determining how much space is needed.

DIAGRAMS 2 & 3: BIKE FOOTPRINTS



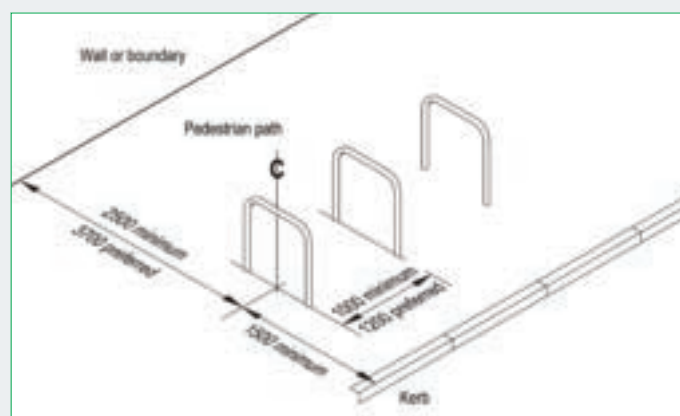
Note: When being pushed, the overall width of the bike and cyclist increases to roughly 1,100mm.

DIAGRAM 4: STANDS AT 90° TO WALL OR BUILDING LINE AND PASSING VEHICLES



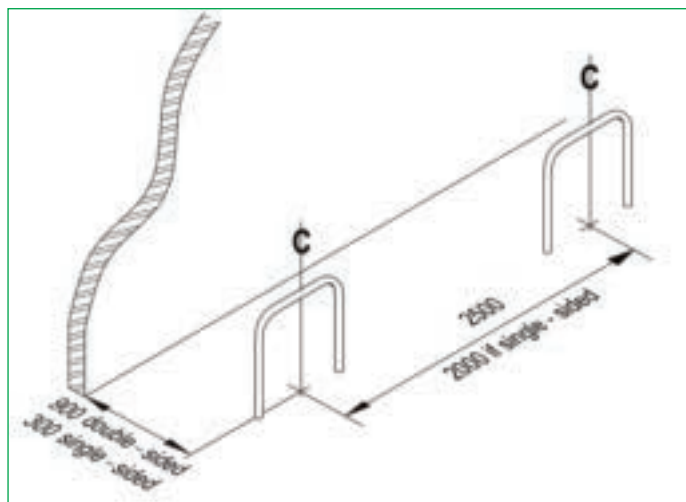
Note: The preferred distance from passing vehicles is 2,000mm. This may be reduced to 1,500mm where a kerb separates the cycle parking from site traffic.

DIAGRAM 5: SHEFFIELD STANDS AT 90° TO PEDESTRIAN PATH AND PASSING VEHICLES



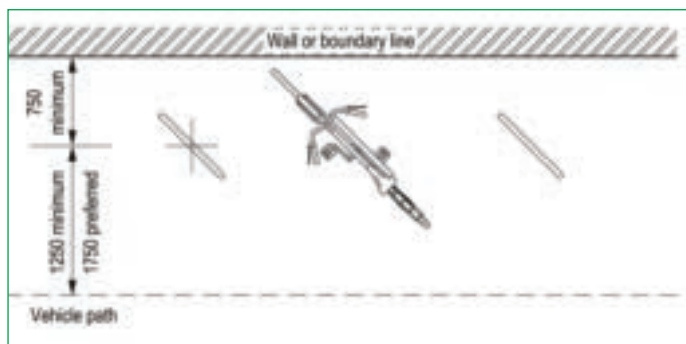
Note: The preferred distance from passing traffic is 2,000mm where there is no kerb.

DIAGRAM 6: SHEFFIELD STANDS PARALLEL TO WALL OR BOUNDARY



Note: 'Distance from wall' dimensions also apply when the stand is the last in a line of several at right angles to the wall (i.e. each stand is parallel to the wall). The recommended minimum distance quoted allows cyclists to attach their locks more easily. Where single-sided parking along a wall is being considered, a cheaper alternative could be the use of wall bars or anchors

DIAGRAM 7: STANDS AT 45° TO WALL AND PASSING VEHICLES



Note: The preferred distance is 1,750mm from passing vehicles. This may be reduced to 1,500mm where a kerb separates the cycle parking from site traffic.

DIAGRAM 8: STANDS AT 45° TO KERB AND PEDESTRIAN PATH

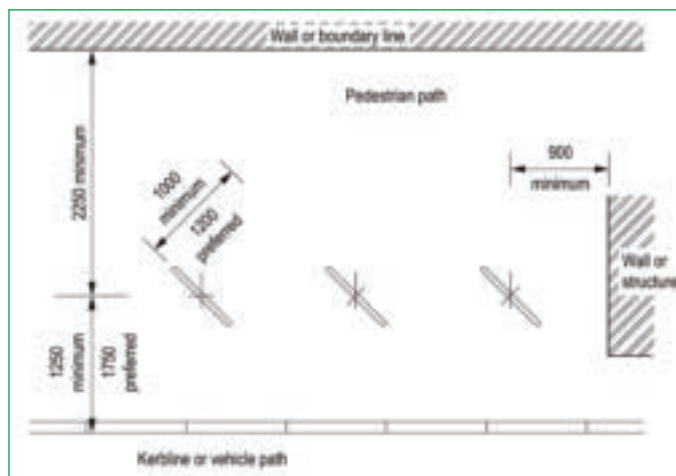
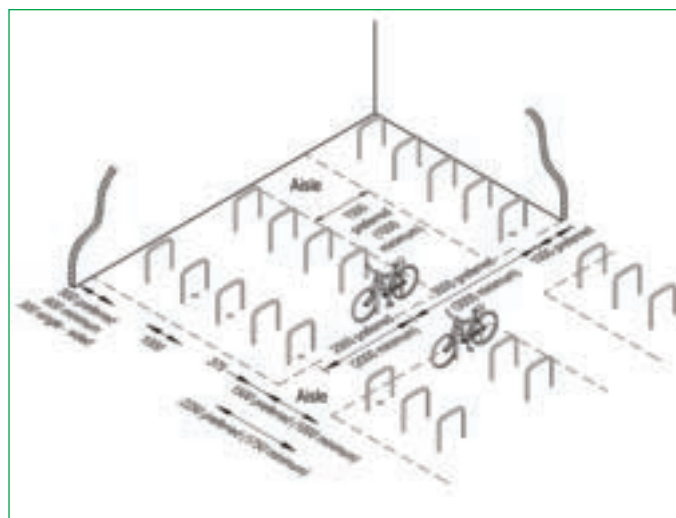


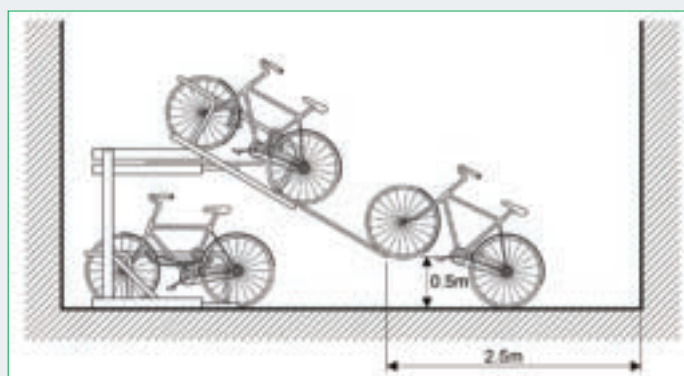
DIAGRAM 9: AISLE WIDTHS



Note: If it's necessary to compromise on aisle width or any other dimension, for example for an irregularly shaped site, the proposed layout must be tested to ensure it works in practice (assume 1,800mm x 650mm per bicycle).

Where large numbers of bicycles are parked, it is recommended that the aisle widths be increased (at least doubled) to allow cyclists to pass in comfort.

DIAGRAM 10: TWO-TIER STANDS



Note: manufacturers/suppliers are able to provide detailed advice in installation and layouts.

BIKE FOOTPRINTS – ACCESS, MOVEMENT AND TURNING (ALL DIMENSIONS MM)

DIAGRAM 11: CYCLIST ON THE LEFT-HAND SIDE OF THE BIKE TURNING RIGHT

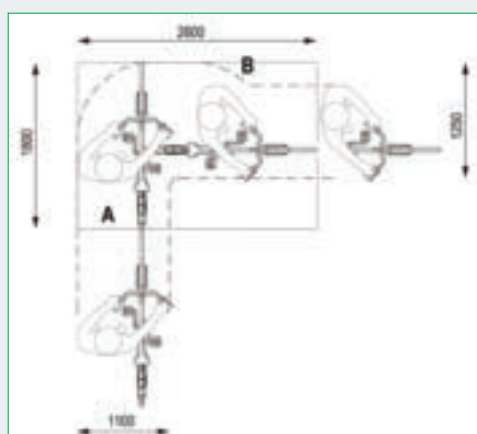
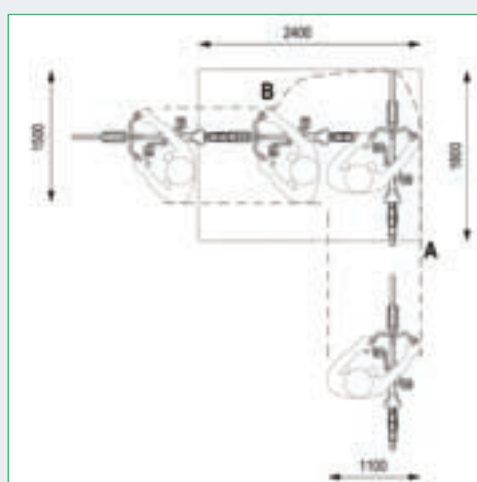
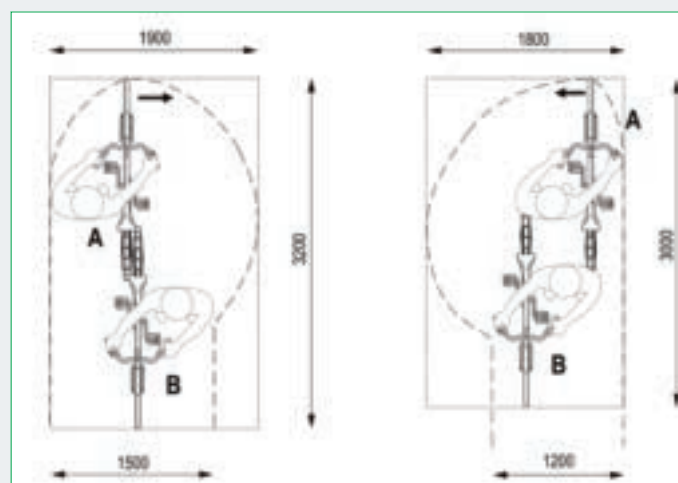


DIAGRAM 12: CYCLIST ON THE LEFT-HAND SIDE OF THE BIKE TURNING LEFT



DIAGRAMS 13 & 14: CYCLIST TURNING THROUGH 180 ° TO LEFT AND RIGHT



Note: These diagrams (11 to 14 inclusive) may be reversed to allow for a cyclist with their bicycle on their left.

APPENDIX E: CYCLE PARKING ASSESSMENT PARAMETERS

PARAMETER	COMMENT
Definition of the cycle catchment area	<p>Identifying the catchment area for cycling to the station defines the area in which route improvements, or new development, will have the greatest impact.</p> <p>The report Investment in Cycle Facilities at Rail Stations found that 76% of cycle trips were less than 2.5 miles (4km) and that the proportion of cycle trips beyond that distance was small. This is borne out by the work done by Bedford Council (average distance cycled 1.7 miles [2.7km]) and TRL (average 1.9 miles [3km]).</p>
The percentage of journeys from the station by season ticket holders	<p>This is essential in estimating demand as previous studies have found a high proportion of cycle rail users are mostly commuters. However, this is an indicator of regular travel, which also includes including regular educational travel, non-daily commuting and business travel, where season tickets are not always used. Consideration should also therefore be given to identifying whether there are significant numbers of students, or other regular travellers.</p> <p>A view should also be taken on whether the proportion of commuters or students is likely to increase at that station, for example because of planned service improvements, local development expansion of local employment or education sites, known trends etc.</p>
Access mode data	<p>The National Rail Passenger Survey (NRPS) can provide current access mode data, and this was used in the TRL model. However where the sample size is very small, reducing the reliability of the data, it may be necessary to combine several years' surveys together, or supplement the findings with additional market research conducted locally.</p> <p>Because some passengers will be surveyed on their return journey, a larger sample and hence more accurate result can be obtained by combining the access mode responses where the station in question is the origin with the egress mode responses where it is the destination, as this will include those users who are returning to collect a bicycle they have previously parked.</p>
Census data for travel to work	<p>The census should be used to obtain local travel to work data for cycle commuting to work within the catchment area. This should include walking and bus use, as well as cycling, as these can be a good indicator of cycling potential (probably indicative of a large population close to the station, reasonably safe roads, and a population willing to not use cars). In the case of unitary or district council areas, which contain large rural areas, it may be necessary to establish data for parishes within 5km of the station to achieve meaningful figures.</p> <p>Census data can be obtained from: www.nomisweb.co.uk/census/2011/qs701ew</p>

PARAMETER	COMMENT
The proportion of cycles carried on the train rather than on trains parked at the station	It is helpful to understand the extent to which current cycle rail users take their cycles on the train rather than leaving them at the station. The proportion of bikes on trains v parked at the station from the NRPS can be used to provide a figure. However, small sample sizes can be a problem, so figures taken from a regional averages may be needed. If NRPS data is too small to be meaningful, decide whether this is likely to change in future (in the TRL model it is assumed that bikes on trains would be capped at current numbers due to finite capacity). A local assessment can take account of known restrictions plans, local information from staff etc.
The expected trend in rail patronage at the station	The expected trend in station use provides the 'business as usual' level of increase in demand for cycle rail, assuming that the number of cyclists increases in line with overall passenger numbers in the absence of anything to encourage modal shift. The TRL model extrapolates previous years' growth, however the TOCs may have a franchise target for passenger growth, or other more appropriate figures, that reflects knowledge about future development such as nearby housing scheme etc.
The quality of current and planned cycle parking	If existing provision is of poor quality this is likely to act as a deterrent to cycle rail use, in addition to any constraints from inadequate capacity. The potential demand where cycle parking is of good quality, or quality is improved, will therefore be greater than where quality is poor. Quality should be assessed related to the 'five star' scale (see section on cycle hubs page 37).
The quality of current cycle access to the station	Consideration should be given to any planned, future improvements in the quality of cycle routes to the station. Improvements can be hard to quantify and this will benefit from stakeholder involvement/feedback.
Evidence of suppressed demand	If there is evidence that demand for cycle rail is constrained, this provides good evidence that the amount of cycling will increase if the constraints can be overcome. This can be established by counts of fly-parking, passenger or user surveys, responses from stakeholder consultation feedback etc.
Evidence of constrained demand for other modes	Demand for cycling is also likely to be higher if other modes are constrained. An example might be if there is limited car parking with little prospect of improvement, or traffic congestion around the station that causes delays and unpredictable journey times.



APPENDIX F: CYCLE PARKING AUDIT FORMS

STATION DETAILS

Name of station: _____ Managing TOC: _____

Note: Please conduct audit during 'neutral months' i.e. May, June, September or October
outside public or school holidays on a weekday - Tuesday -Thursday between 1000 and 1500 HOURS

1. AUDIT DETAILS

Name of person carrying out audit: _____ Contact telephone number: _____

Date of audit: _____ Time of audit: _____

2. WEATHER ON DAY OF AUDIT.

Tick whichever apply:

Sunshine ☐ Rainfall noted at any time during morning ☐ Windy – trees observed to be moving ☐ Cold ☐ Fair ☐

3. GENERAL DETAILS

Are there peak time restrictions on cycle carriage on any trains serving this station? Y / N

Does station have ticket barriers? Y / N

How many car parking spaces are provided at the station? _____ Counted/Estimated (please delete as appropriate)

What is the minimum fee for parking for one day? _____

How full was the station car park at the time of the audit?

25% ☐ 25% to 50% ☐ 50% to 75% ☐ 75% ☐ Full ☐ Full and fly parked ☐

4. CYCLE HIRE

Is there any cycle hire available at or near station? Y/N

Is it: (tick)

Brompton Dock ☐ 'Boris Bike' ☐ Other self-service hire ☐ 'Bike&Go' ☐ Provided by external body/cycle shop ☐

If external cycle hire state name of the cycle hire company or scheme and contact details
(i.e. telephone number and web address):

Name: _____ Phone number: _____ Web address: _____

How many bicycles were 'out to hire' at the time of the audit?

25% ☐ 25% to 50% ☐ 50% to 75% ☐ 75% ☐ 100% ☐



5. CYCLE PARKING AUDIT

(please read the guidance notes first and complete a new row for each location, compound (if provided) and each type of stand)

Location (describe)	Situation (tick one)	Distance from station entrance (Tick one)	'Sheffield stands'		Wheel gripping racks		Two tier racks		Lockers	Security features (please tick all that apply)	Proportion covered by shelter (tick one)
			No. of cycles	No. of Spaces	No. of cycles	No. of Spaces	Number of cycles parked	Number occupied			
1	<div><input type="radio"/> Alongside station access road</div> <div><input type="radio"/> Within car parking area</div> <div><input type="radio"/> Within station concourse</div> <div><input type="radio"/> On platform with no ticket gates</div> <div><input type="radio"/> On platform behind ticket gates</div> <div><input type="radio"/> Other</div>	<div><input type="radio"/> Within building</div> <div><input type="radio"/> <30m</div> <div><input type="radio"/> 30 – 50m</div> <div><input type="radio"/> >50m</div>							<div><input type="radio"/> Overlooked</div> <div><input type="radio"/> CCTV</div> <div><input type="radio"/> Lighting</div> <div><input type="radio"/> In secure compound</div>	<div><input type="radio"/> All</div> <div><input type="radio"/> More than half</div> <div><input type="radio"/> Less than half</div> <div><input type="radio"/> None</div>	
2	<div><input type="radio"/> Alongside station access road</div> <div><input type="radio"/> Within car parking area</div> <div><input type="radio"/> Within station concourse</div> <div><input type="radio"/> On platform with no ticket gates</div> <div><input type="radio"/> On platform behind ticket gates</div> <div><input type="radio"/> Other</div>	<div><input type="radio"/> Within building</div> <div><input type="radio"/> <30m</div> <div><input type="radio"/> 30 – 50m</div> <div><input type="radio"/> >50m</div>							<div><input type="radio"/> Overlooked</div> <div><input type="radio"/> CCTV</div> <div><input type="radio"/> Lighting</div> <div><input type="radio"/> In secure compound</div>	<div><input type="radio"/> All</div> <div><input type="radio"/> More than half</div> <div><input type="radio"/> Less than half</div> <div><input type="radio"/> None</div>	
3	<div><input type="radio"/> Alongside station access road</div> <div><input type="radio"/> Within car parking area</div> <div><input type="radio"/> Within station concourse</div> <div><input type="radio"/> On platform with no ticket gates</div> <div><input type="radio"/> On platform behind ticket gates</div> <div><input type="radio"/> Other</div>	<div><input type="radio"/> Within building</div> <div><input type="radio"/> <30m</div> <div><input type="radio"/> 30 – 50m</div> <div><input type="radio"/> >50m</div>							<div><input type="radio"/> Overlooked</div> <div><input type="radio"/> CCTV</div> <div><input type="radio"/> Lighting</div> <div><input type="radio"/> In secure compound</div>	<div><input type="radio"/> All</div> <div><input type="radio"/> More than half</div> <div><input type="radio"/> Less than half</div> <div><input type="radio"/> None</div>	
4	<div><input type="radio"/> Alongside station access road</div> <div><input type="radio"/> Within car parking area</div> <div><input type="radio"/> Within station concourse</div> <div><input type="radio"/> On platform with no ticket gates</div> <div><input type="radio"/> On platform behind ticket gates</div> <div><input type="radio"/> Other</div>	<div><input type="radio"/> Within building</div> <div><input type="radio"/> <30m</div> <div><input type="radio"/> 30 – 50m</div> <div><input type="radio"/> >50m</div>							<div><input type="radio"/> Overlooked</div> <div><input type="radio"/> CCTV</div> <div><input type="radio"/> Lighting</div> <div><input type="radio"/> In secure compound</div>	<div><input type="radio"/> All</div> <div><input type="radio"/> More than half</div> <div><input type="radio"/> Less than half</div> <div><input type="radio"/> None</div>	

6. FLY PARKING

Are there any cycles informally 'fly parked' around the station? Y/N

Approximate number

Comments (e.g. on suitability of current provision)

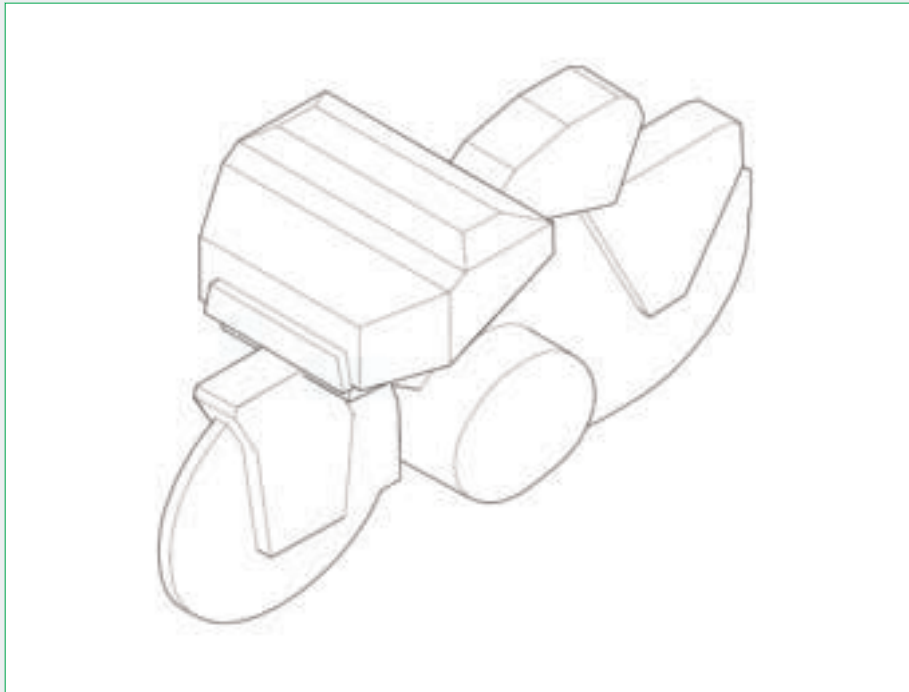
PLEASE RETURN COMPLETED AUDIT FORM TO BY

APPENDIX G: POTENTIAL PARTNERS

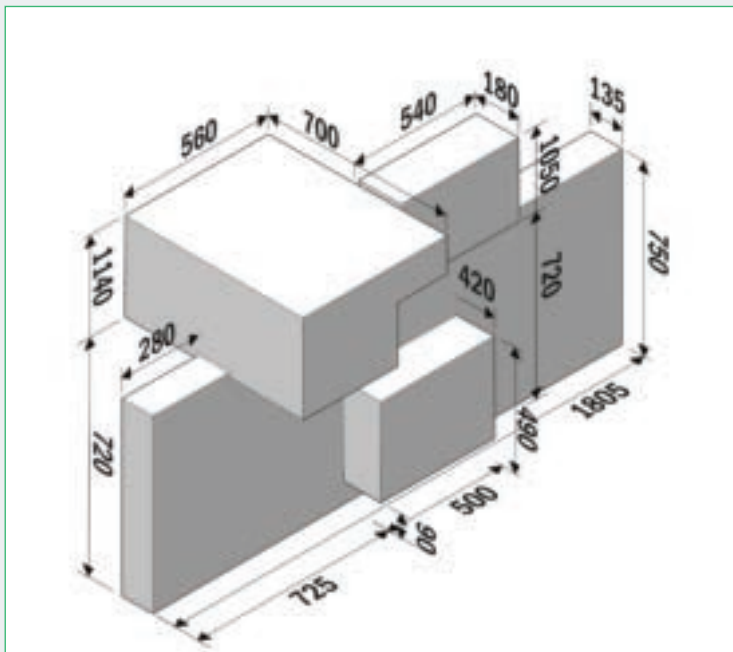
PARTNERS	BENEFITS
Central government	Sources of funding and guidance on issues such as cycle storage and associated station security considerations (see Appendix B).
Local government	<p>Sources of funding, guidance and the delivery of improved cycle routes to stations as well as contributions to cycle parking, either within or outside the station and promotional events. Local authority websites can also provide information on routes to stations and generally promote cycle-rail. Can also provide valuable support for a cycle forum.</p> <p>Help with developing station travel plans.</p>
Network Rail	Manages the largest stations and is a source of funding and guidance.
Train Operating Companies (TOCs)	The TOCs' integrated transport and security managers can provide guidance.
Passenger Transport Executives (PTEs)	PTEs have their own funding allocations, which can be made available for cycle-rail projects. Involvement in setting priorities for funding and promoting the development of new train services.
Transport for London (TfL)	Manages the London Overground rail network and London's public cycle hire scheme.
Local station managers	Can provide local information and perspectives, plus links to TOC contacts.
Community Rail Partnerships	Impartial support and guidance.
Other public transport providers	Help with developing station travel plans where there is interchange between modes
British Transport Police and local police force	Help with developing station travel plans where there is interchange between modes
Cycle retailers	Delivery of services (as sub-contractors operating cycle hubs or hire) and promotional events e.g. 'Dr Bike' and 'try before you buy' sessions.
Cycle hire providers	Can support local cycle-rail initiatives (includes local authority hire schemes).
Non-governmental organisations (NGOs)	<p>Bodies such as Sustrans, the transport charity, may be able to help with some cycle-rail projects including improvements to routes to stations and links to the National Cycle Network (the National Cycle Network now passes within 500 metres of more than 1,000 stations across the UK).</p> <p>The CTC and UK Cycling Alliance (UKCA) may be able to help with technical advice and local contacts. Input into the practicalities of cycle carriage when new rolling stock is being designed or exiting carriages being refurbished.</p>
Social enterprise and voluntary organisations	Delivery of services (as sub-contractors operating cycle hubs or hire).
Local cycle user groups	Input into local cycle route improvements, cycle parking, promotional events, assistance in surveys, monitoring and feedback on the success of cycle-rail measures. Can also play a role in the administration and organisation of a cycle forum.
Local cycle forum	<p>Often organised/supported by the local authority and drawn from many of the organisations listed above. These can offer valuable guidance, feedback and support for cycle-rail activities – may also be willing to help with user surveys and station audits.</p> <p>Input into the practicalities of cycle carriage when new rolling stock is being designed or exiting carriages being refurbished.</p>
Individual cycle-rail users	Feedback from individual users can be invaluable in making sure that what is provided actually meets their needs, in particular surveys and interviews that follow up the introduction of new facilities can help demonstrate their worth/enable provide early identification of any operational snags.

APPENDIX H: CYCLE ENVELOPE

It is not the intention of this appendix to give definitive dimensions but simply to illustrate that cycles vary in size and shape. This should be borne in mind when designing for cycle storage. Having identified a space for storage it is essential that the final design solutions should be determined in a practical manner employing a range of cycle types, preferably with the input of users and their representatives. The diagrams below have been developed in conjunction with the British Cycle Association and from further investigation.



Composite based upon a range of measured cycle types and including handlebars, seats, pedals, racks, mudguards, lights and cables



Maximum dimensions based upon the diagram above

APPENDIX I: DESIGNING FOR CYCLE CARRIAGE — BEST PRACTICE

BEST PRACTICE	OPERATIONAL ISSUES IF NOT FOLLOWED
Design in space for cyclists from the outset	Usable space is preferable to unusable space as that which is provided for cycle storage may prove to be inadequate or inaccessible in practice if 'tacked on' later. This is likely to lead to misuse and passenger conflict.
Use a range of cycle types to demonstrate how a chosen solution will work: design for wheels rather than frames	Space provided may not be wide or tall enough to accommodate all cycle types and do not forget that some cycles will have mudguards.
Where possible, design out the need to lift cycles	Where unavoidable adequate 'run up' space will be necessary. Usually this will be the vestibule and this may become blocked by other passengers leading to delay in extracting cycles and potentially the service. The need to lift will discriminate against those unable to lift their cycle.
Where cycles are hung on hooks, use their weight to stop them swinging rather than straps	Cycles that are allowed to swing may cause damage to the carriage as well as adjacent cycles. It may be appropriate to allow the hooks to fold to the side to facilitate extraction. Hooks should be capable of holding a range of wheel types.
Where cycles are hung on hooks no cycle should touch the floor	This may result in damage to any mudguards or lights that come into contact with the floor.
Where cycles are hung on hooks ensure that passing passengers cannot stumble into handlebars next to gangways – providing vertical grab-rails will minimise this problem	Handlebars generally coincide with the eye height of a large proportion of passengers creating the potential for serious injury.
Create solutions that permit any inner cycles to be removed easily	If difficult to remove, this may result in damage to other cycles and potentially create delay/safety hazards for both the cyclist and other passengers.
Solutions provided should not damage cycles	Hooks or racks that cause damage may not be used resulting in obstruction of passenger space, with the attendant potential for creating safety hazards, and the blocking of operational space.
Where possible, cycle racks should be integrated into the 'furniture'	Bolted-on equipment can make space more difficult to maintain and clean.
Create legible spaces whose use is self-evident	The use of space provided for cyclists by others (passengers using drop down seats/using cycle space for luggage/pushchairs) may result in cycles obstructing passenger space and the potential for creating safety hazards, and the blocking of operational space and passenger and train staff conflict.
Site storage space for cycles out of the path of passengers moving within the carriage	Poorly laid out storage space may result in obstruction of passenger space, and the potential for creating safety hazards, and the blocking of operational space.
Cycle storage should not be hidden away. It should preferably be within sight of users	Since cycles should not be locked to any part of the carriage, they can be vulnerable to theft if out of sight of their owners – this applies equally to folding cycles, which may have a high value and be vulnerable to opportunist thieves.
Shelving provided for luggage should permit the storage of folding cycles above and below	Folding cycles left in gangways, vestibules etc., can create safety and operational problems.
Provide adequate luggage space for other passengers	Inadequate provision can create competition for space between those travelling with a cycle and other passengers.
Provide adequate and appropriate signage to explain the use of the space provided, it should provide clear priority of use (see page 75)	Inadequate signage can create conflict between intended users and other passengers.

APPENDIX J: RSSB SAFETY DESIGN GUIDELINES

INTRODUCTION

There are mandatory requirements for interior passive safety* that are set out in Railway Group Standard GM/RT2100 which are applicable to bicycle stowage. More generally, in consideration of a train operator's duty of care to their staff and passengers, the principles for interior passive safety should be respected when making provision for accommodating bicycles on trains, in particular when carried in passenger areas.

*See below for general interior passive safety principles.

Providing dedicated areas for cycle stowage and/or fittings to secure cycles means that the train operator takes a greater degree of responsibility than would be the case for cycles (or other items) carried where there is no particular provision made. The train operator may, however, at an operational level have limited control over the size, shape and weight of cycles brought onto trains and has therefore to ensure that any facilities are reasonably able to cater for foreseeable use and foreseeable incidents and accidents.

In designing accommodation or facilities for bicycles, interior passive safety issues need to be considered both for when such areas are in use for cycle stowage or other purposes and also when they are unused or empty.

Bicycles vary considerably in size and weight and present a combination of features some of which are benign and some of which are potentially very aggressive. The following recommendations are for conventional bicycles rather than folding bicycles which, when fully folded, can be considered as essentially equivalent to luggage.

STRUCTURAL DESIGN CONSIDERATIONS

Bicycle areas should be designed to retain their contents as far as reasonably practicable. Like luggage racks and stacks, ease of access is however a key requirement and practical design has to recognise this.

When stowed, cycles should be sufficiently located or restrained to prevent intrusion into aisles or vestibules, which will be used by staff or passengers in normal service. Designing cycle areas for the retention of the contents, the cycles stowed in them, does not mean that any movement inside the area must be prevented by fully restraining any

bicycles carried but that any potential for movement should be understood and appropriately controlled. For some types of service a high level of restraint would not be a practical proposition and therefore less likely to be used, for example a suburban service with a high frequency of stops and loading and unloading.

The design of stowage areas and any fixtures and fittings will need to be considered against the secondary impact assessment requirements (GM/RT2100 6.1.6) both when in use and when unused.

When fully laden, bicycle stowage facilities (partitions, retention devices, location brackets) are required to withstand as proof loads* the accelerations specified for equipment attached to vehicle bodies set out in EN12663-1. In addition, ultimate load cases**, 1.5 times the proof loads, apply.

For typical rail vehicles, the relevant acceleration values are +/- 3g longitudinal, 3g vertical downward, 1g vertical upward and +/- 1g lateral. These acceleration values are considered to act on the mass of the bicycle to determine the loadings to be resisted and hence the design of the fittings required. For the purposes of design it is therefore necessary to make some assumptions about the mass of bicycles to be carried.

(*A proof load represents or is intended to be equivalent to an exceptional maximum load that could be encountered when in normal service and which, when applied and removed, results in no damage, loosening of fixings or deformation that would require repair or replacement)

(**A load which represents or is intended to be equivalent to an exceptional load outside of normal service conditions due to overloading or accident which may result in significant damage or permanent deformation that will require repair or replacement)

The number, size and mass of bicycles to be assumed should form part of the vehicle specification. It is recommended that surveys are conducted to determine representative values for the size and mass of bicycles to be stowed. As a guideline the following mass values can be assumed:

- a) For a conventional adult bicycle without baskets, carriers or luggage, a mass of up to 16 kg
- b) For an electric bicycle (e-bike) without baskets, carriers or luggage, a mass of up to 25 kg
- c) For baskets, carriers or luggage, an additional mass of up to 20 kg.

CONTAINMENT

When considering the magnitudes of the specified acceleration loadings, it is recommended that bicycles are aligned in a predominately longitudinal sense where possible. In consideration of the relative dimensions of train and bicycle and typical train layouts this is often a natural choice.

Where specific restraints such as bars, straps or clips are not provided, the ends of bicycle areas should act as barriers in the form of for example seating, draught screens, partitions or grab poles and rails to provide longitudinal containment and reduce the risk of direct longitudinal impact between people and bicycles under high decelerations due to emergency braking or in the event of an accident. The design of such barriers will however be constrained by normal service requirements such as quick and easy loading and unloading.

Provision of restraints such as bars, straps or clips should consider the frequency of loading and unloading and the range of cycle types likely to be encountered. To cater for the widest range of cycle types and sizes, anchor points that can be used with bungee cords (provided by the cyclist) should be considered.

The general layout and position of cycle stowage areas should take into account the likely presence of seated or standing passengers in or adjacent to that area, whether other passengers or the cyclists themselves.

If a cycle stowage area is likely to be unoccupied by staff or passengers except for loading and unloading, issues relating to secondary impact will be less critical; in assessing the arrangements for cycle stowage the type of service the vehicle is intended for should therefore be taken into account e.g. metro, suburban or long distance inter-city.

Bicycles, as relatively heavy items, if inside general passenger areas and not directly restrained and contained, should wherever possible be located at a relatively low height, for example resting on their wheels on the floor in the designated stowage area. Such an approach ensures that even if they do break free in the event of an accident the risk to people is reduced.

When bicycles are mounted at height, for example suspended by the front wheel from ceiling level fittings, the risk of head or upper body contact in the event of an accident or a fall will need to be considered. Potentially aggressive features on bicycles that need to be considered include handlebars, brake levers, pedals, wheel hubs and

gearing where the items are rigid and relatively small in contact area.

A bicycle's steering can, for example, mitigate the potential for injury due to impact against the handlebars if the front wheel is relatively free to allow it to rotate.

INTERIOR PASSIVE SAFETY

Areas that are accessible to passengers and staff in normal service are subject to a secondary impact review to examine the general features and detailing of the vehicle interior considering the risk of injury due to secondary impact against surfaces or items (GM/RT2100 Part 6, 6.1.6). The interior design is examined for potentially aggressive features with respect to: exposed corners and edges, recesses and protrusions.

The following objectives and principles apply to all parts of a rail vehicle interior and will therefore apply to any areas and fittings dedicated to the stowage of bicycles.

It should be taken into account that the risks to be controlled arising from collisions and derailments relate to relatively infrequent events. A proportionate and balanced view of the full range of vehicle design requirements is therefore required.

It should also be noted that a significant benefit of the application of interior passive safety design principles is in reducing the level of typically minor injuries through trips, slips and falls that can result from unexpected vehicle movements caused by, for example, emergency braking or track irregularities.

Interior passive safety objectives

The primary interior passive safety objective is to minimise the risk of injury to passengers and staff in the event of a collision or derailment. Even if the possibility of injury cannot be eliminated, the seriousness of potential injuries should be at least reduced.

A complementary objective is to maintain the structural integrity of the interior, with the objectives of preserving occupant residual space and minimising the risk of injury due to detached or loose objects or debris.

SECONDARY IMPACT

In a collision or derailment, some of the vehicle's kinetic energy is retained by the passengers and objects inside it, which is then dissipated by secondary impacts inside the vehicle against the interior objects or other passengers.

The severity of a secondary impact is dependent upon the person or object's kinetic energy (i.e. half the mass times the impact velocity) and the rate of energy dissipation (the relative deceleration at the point of contact) on impact. The rate of energy dissipation is related to the stiffness of the contact surface, the concentration of energy per unit area at the point of contact. In the case of people, these characteristics will vary significantly according to the body region involved.

The initial effect of many accidents is predominately longitudinal but even in these cases, due to the dynamics of the train or external influences such as, for example, track curvature, switches and crossings, some or all of the vehicles involved may come to rest having been subject to large lateral, vertical, yaw, pitch or roll movements. Accidents due to defective track or landslides may include significant non-longitudinal effects from the outset.

Containment

Containment reduces the risk of injury by ensuring that, in the event of a collision or derailment, passengers or staff remain in the area of the vehicle where they are located and equally heavy items such as luggage, cycles or on-board equipment are contained in their respective areas. The vehicle layout, in particular the seating and the arrangement of screens, partitions and grab rails or poles determines how much containment the vehicle offers and will play a key role in determining and limiting the potential trajectories for passengers in the event of a collision.

Accident investigations and research has shown that the majority of injuries in an accident or collision can be attributed to impact against seats and tables. However, the causes of a significant proportion of injuries are uncategorised and therefore the potential effects of all other features including minor details should also be considered. This is because the detail design of seemingly minor items can significantly influence injury levels, even if they are not directly responsible for the most serious injuries.

The Cycle-Rail Working Group is a cross industry working group that encourages implementation and best practice development of strategic policy in relation to the delivery of cycle-rail integration.

The Group is Chaired by Phillip Darnton, Bicycle Association and the secretariat role is fulfilled by ATOC supporting RDG.

Group members include:

Rail Delivery Group (RDG)

Network Rail

Transport for London

Department for Transport

British Transport Police

Passenger Transport Executive Group

UK Cycling Alliance, represented by Sustrans

Passenger Focus

Rail Safety Standards Board

English Heritage

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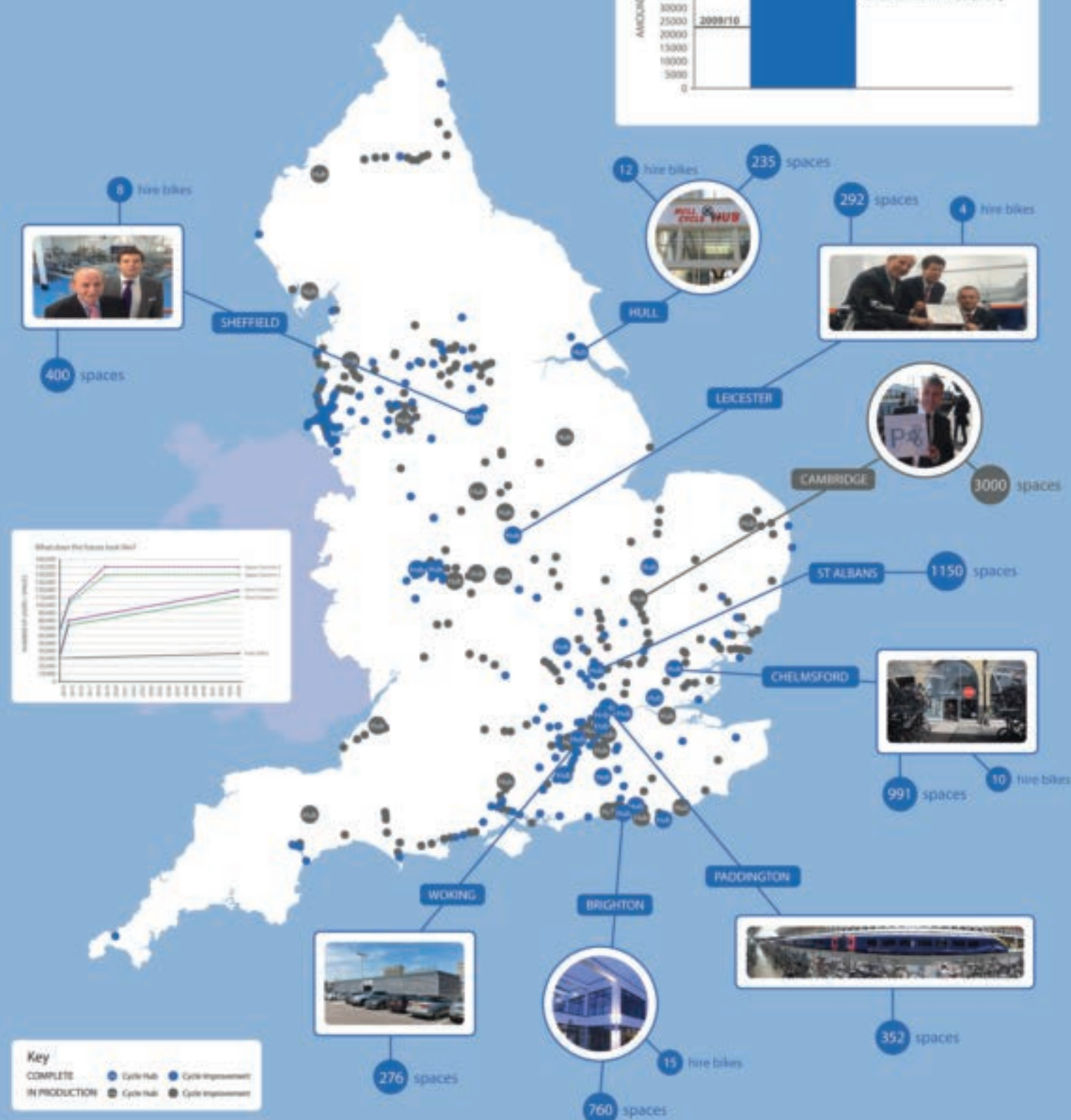
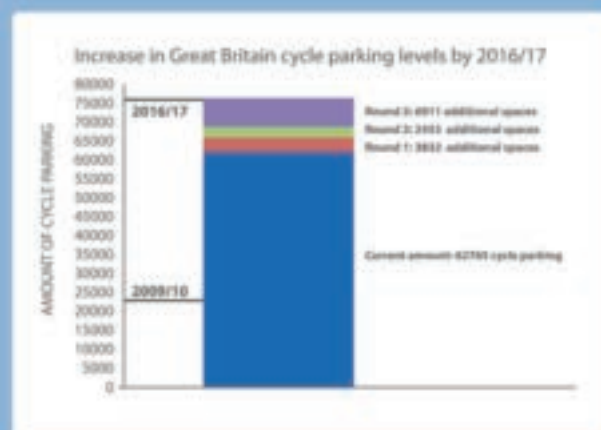


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42 hubs, 2000 hire bikes and 75,961 cycle spaces after completion of Round 3.



CYCLE-RAIL TOOLKIT 2

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