



Workforce
Mobility
Project



**Workforce Mobility
Bikes on Buses
Performance Review & Recommendations
Final Report
November 2023**



Workforce Mobility Project

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1 Executive Summary and Recommendations

The purpose of this report is to identify bicycle friendly bus services in the UK, existing bicycle storage solutions for buses and to understand if there is value in initiating further work (as part of a project) to increase capacity of bicycle friendly buses (and their usage) in the Edinburgh and South East Scotland City Region Deal (ESES CRD).

There are currently four bus operators in the UK, operating nine different bus routes in total, where bespoke internal bicycle storage is available. All bicycle friendly bus services in the UK rely on internal bicycle storage, there are no services with external bicycle storage. External bicycle storage solutions have been trialled by Moray Council, Cambridgeshire Council and Bus Vannin (Isle of Man) with limited success.

It is clear there are a number of challenges to implementing bicycle friendly bus services and ensuring they are a success, these include;

- Obtaining approval of the storage solution from the Driver and Vehicle Standards Agency (DVSA) particularly for external mounted bicycle storage;
- Loss of available seating on the bus, although there are some adaptable solution available;
- Lack of demand;
- Despite marketing activities, lack of awareness of the storage solution from potential users;
- Bicycle storage not available on all buses servicing a particular route, or area, which makes it difficult for users to complete journeys with a bike;
- Uncertainty that the bike storage will be available on the bus as there is no pre-booking requirement, or real-time monitoring of availability; and
- Time taken to load bicycles impacting compliance with the scheduled timetable.

Despite these challenges, bicycle friendly bus services increase accessibility to public transport by allowing passengers to travel further to access public transport services, mitigating the 'first mile / last mile' challenges and have the potential to help mitigate transport barriers, especially in rural areas. Bicycle friendly bus services support a modal shift to sustainable transport solutions and are well aligned to strategic transport objectives and the vision of the National Transport Strategy 2, in particular taking climate action by helping to deliver Net Zero and improving health and wellbeing by enable people to make healthy travel choices.

Bicycle friendly buses could be part of the solution to support the modal shift away from the private car and to mitigate specific transport barriers in the ESES CR, supporting the Workforce Mobility Project's key objective to mitigate transport barriers to employment, education, and training. The positive feedback from the Borders Buses investment identifies the potential for bike storage on buses to support these outcomes.



The following steps are recommended to help support bicycle friendly buses in the ESESCR and develop a better understanding of their benefits:

- Identify funding sources to initiate projects across the region to deliver the report recommendations;
- Assess existing demand for bicycle friendly buses;
- Assess potential future level of demand for bicycle friendly bus services;
- Quantify benefits of existing bicycle friendly bus services and how they contribute towards national (National Transport Strategy 2), regional and local objectives by delivering:
 - access to opportunities and services;
 - reduction of transport poverty;
 - carbon impact; and
 - economic benefits.

Better understand existing users of bicycle friendly bus services;

- Identify marketing opportunities to promote the uptake of bike on bus services and provisions;
- Further engagement with Sustrans, SEStrans and Transport Scotland to understand any objectives / plans in relation to supporting bicycle friendly bus services;
- Further engagement with Bus Operators and Local Authorities to identify opportunities for new services or to increase existing capacity;
- Engagement with the DVSA to better understand their concerns related to front mounted external bicycle storage; and
- Understand how technology could help provide confidence to users that bicycle storage will be available on a specific bus, where not all buses on the route are bicycle friendly.



2 Background

Anturas have been commissioned by the Workforce Mobility Project part of the ESESCRD to review and identify the following in relation to bicycle storage on buses.

- Existing operational solutions in the UK;
- Current legislation (including Health & Safety) that sets the parameters for bicycle storage on buses in the UK;
- Identify which UK manufacturers provide solutions;
- International examples of solutions that comply with UK legislation;
- Opportunities for further development of solutions that could:
 - Increase internal storage without compromising seating;
 - Provide users with visibility of their bicycle during the journey, where the bicycle is stored externally.
- Assess potential for a project to help increase capacity in relation to bicycle friendly bus services and awareness among potential users; and
- Support Borders Buses and SUstrans complete the operational review of the 2019 bike storage investment in the Scottish Borders fleet, following the interruption to services caused by COVID19.

There are currently four bus operators in the UK, operating nine different bus routes in total, where bespoke internal bicycle storage is available (correct in Autumn 2023). These services are relatively new and there is limited usage data, however it is indicated that the majority of usage is for leisure purposes with bus routes in close proximity to defined cycle routes.

There are no public bus services in the UK that offer external bicycle storage. This is in contrast to North America where the majority of public bus services have external bicycle storage. There is no specific legislation or standards in relation to external bicycle racks on buses in the UK which would prevent the solutions detailed in Sections 6 of this report being used in the UK. However, both the Road Vehicles (Construction and Use) Regulations and the Road Vehicles Lighting Regulations need to be complied with.

Approval from the DVSA for any modification to a bus is required. Based on previous proposed trials in Bath and Moray Council the DVSA are generally not supportive of front mounted external bicycle storage on buses and are unlikely to sign-off the design. There have been a number of bicycle friendly bus trials with rear mounted external bicycle racks or trailers in the UK focusing on leisure users. There have been no trials aimed at potential commuters. Trials have been completed by Moray Council, South Cambridgeshire Council and Bus Vannin (Isle of Man), see Section 5 for more details. Neither of these trials have been deemed a success for the reasons below;

- Lack of demand;



- Despite marketing activities, lack of awareness of the service from potential users;
- Bicycle storage not available on all buses servicing the route, so difficulty for users to complete multi-bus journeys;
- Time taken to load bicycles impacting compliance with the scheduled timetable; and
- Time taken from project initiation to go-live due to required DVSA approval.

2.1 Strategic Context

Bicycle friendly bus services are well aligned to the strategic objectives at a national and regional level. Bicycle friendly bus services support the vision of the National Transport Strategy 2 (NTS2), in particular taking climate action by helping to deliver net zero and improving health and wellbeing by helping to enable people to make healthy travel choices. Bicycle friendly buses also increase accessibility to public transport helping to encourage modal shift which is required to meet national, regional and local objectives.

Sustrans have been supporting the integration of cycling and walking with public transport (through funding from Transport Scotland) working with train operating companies and bus operators in Scotland. Sustrans have provided support to Borders Buses in the implementation of bicycle friendly buses in the Scottish Borders and their parent company West Coast Motors in implementing bicycle friendly buses in Argyll & Bute.

At a regional level, the SEStran Regional Transport Strategy which aligns with NTS2 and has outlined objectives specific to integration of cycling with public transport, including working with partners to deliver more buses in the region with facilities to carry bikes. Local mobility plans will be aligned with the national and regional strategies and are also likely to support objectives to improve integration of cycling with public transport.

2.2 Stakeholder Engagement

To fully understand the bicycle friendly bus services and solutions available in the UK, stakeholders at Local Authorities, Transport Authorities, Bus Manufacturers and Bus Operators were engaged. The stakeholder list is detailed in Table 1 below. A list of questions asked during the consultation process is available in Appendix 2.

Table 1 List of Stakeholders

Role	Organisation	Date of Engagement	Form of Engagement
Sales Account Manager	Alexander Dennis	18 March 2021	Email Correspondence
Director	Bikes on Buses	24 March 2021	Email Correspondence
Operations and Systems Supervisor	Borders Buses	10 March 2021	Meeting
Manager	Eve Coaches	10 March 2021	Meeting
Active Travel Officer	HITRANS	26 March 2021	Meeting
Transport Officer	Moray Council	12 April 2021	Email Correspondence
Senior Transport Officer	East Lothian Council	March 2021	Meeting



Lead Consultant – Bus Networks and Stations	Fife Council	March 2021	Meeting
Senior Transport Integration Officer	Sustrans - Scotland	March - November 2021	Multiple Meetings
Director	Transition Black Isle	6 April 2021	Email Correspondence
Communications Director	West Coast Motors	2 November 2021	Meeting
Transport Officer	West of England Combined Authority	12 April 2021	Email Correspondence
Marketing Manager	East Yorkshire Buses	23 April 2021	Email Correspondence
Inspector (Kendal Depot)	Stagecoach	28 April 2021	Email Correspondence
Lead Engineer	Wrightbus	28 April 2021	Email Correspondence
Regional Sales Manager	Switch Mobility (formerly Optare)	28 April 2021	Meeting



3 Current Legislation for Bicycle Storage on Buses

There is no specific legislation or standards in relation to external bicycle racks on buses in the UK. Existing rules on overhanging load don't apply as the external bicycle rack carries a load itself and is deemed to be part of the vehicle for the purposes of vehicle length calculations.

Vehicles including buses are subject to legal limits on their length as detailed in the Road Vehicles (Construction and Use) Regulations. For buses and coaches, the limits are 13.5m for a two-axle vehicle and 15m for a three-axle vehicle. If a bus is not already at the legal limit for length, then there is nothing to prevent an external bicycle rack being mounted onto the front or rear of the bus, as long as it stays within the legal limit. Vehicles are also required to comply with the Road Vehicles Lighting Regulations e.g., any external bicycle storage should not obstruct vehicle lighting.

This position has been confirmed by the DfT in a communication related to the proposed trial in Bath in 2014 which is detailed in Appendix 1.

The Driver and Vehicle Standards Agency (DVSA) are required to sign off on any modification to a bus. Based on lessons from a proposed trial in Bath for front mounted external bicycle racks and a trial completed by Moray Council, the DVSA would not authorise a design that includes a front mounted external bicycle rack (on safety grounds). Details on these trials are included in Section 5.

As part of the proposed Bath trial, the Minister of State for Transport at the time was contacted with a proposal for introducing a statutory standard for external bicycle racks to help mitigate the DVSA concerns, however this proposal was not deemed appropriate as national standards should be used sparingly.

A study of front mounted external bicycle racks on buses was published by the Transport Research Laboratory for the DfT in 2004¹. The report focussed on the potential safety impact of front mounted bicycle racks on buses. It was concluded that "the fitting of bike racks and bikes, of the type tested at the time, would dramatically increase the risk of life-threatening head and chest injuries and long-term disabling leg injuries, particularly for children, in accidents involving pedestrians." It was ultimately recommended that "the alternatives of redesigning or relocating bike racks should be considered" e.g., internal storage or trailers. It's not clear if the testing would reach the same conclusion now if current solutions were tested and consideration given to the current strategic context where modal shift away from the private car is required.

There is also no specific legislation in relation to internal bicycle storage other than ensuring it does not compromise passenger safety.

¹ <https://trl.co.uk/uploads/trl/documents/TRL592.pdf>




4 Bicycle Friendly Services



Following a desktop exercise and stakeholder engagement, the services with internal bicycle storage racks currently operating in the UK were identified (correct in Autumn 2023) and are detailed in table 2 below.

Whilst there have been several trials in the UK (detailed in Section 5) there are no bus services currently operating where external bicycle storage (front or rear mounted) is available. Internal bike storage solutions are currently operating more successfully.


Table 2 Bicycle Friendly Services

Operator / Services	Manufacturer / Bus Type / Storage Solution	Considerations
<p>Borders Buses</p> <ul style="list-style-type: none"> • Carlisle to Edinburgh • Galashiels to Edinburgh • Berwick to Edinburgh 	<p>ADL – Enviro200 / Enviro400 buses</p> <ul style="list-style-type: none"> • 23 bicycle friendly buses in operation • 3 double decker buses on Galashiels to Edinburgh route have storage for 4 bicycles.  <ul style="list-style-type: none"> • All the other bike friendly vehicles are single decker with racks available for 2 bicycles. <p>Figure 1 – Borders Buses ADL Internal Storage</p>	<ul style="list-style-type: none"> • The bicycle racks are inexpensive with costs to manufacture and install circa £1,500. • Storage for 2-4 bicycles • Luggage space removed to accommodate racks • 2 seats cannot be used when racks in use (4 seats where there is storage for 4 bicycles) • Takes up wheelchair or pram space (which take priority) when in use.



<p>East Yorkshire Buses</p> <ul style="list-style-type: none">• Hull to York• Bridlington to York	<p>ADL - Enviro400</p> <ul style="list-style-type: none">• 8 bicycle friendly buses in operation  <p>Figure 2 – East Yorkshire ADL Internal Storage</p>	<ul style="list-style-type: none">• Storage for 2 bicycles• 3 seats cannot be used when racks in use• Takes up wheelchair or pram space (which take priority) when in use
<p>Eve Coaches</p> <ul style="list-style-type: none">• Haddington to Gifford• Dunbar to North Berwick• Haddington to North Berwick	<p>ADL - Enviro200 midibuses</p> <ul style="list-style-type: none">• 3 bicycle friendly buses in Operation• *ADL also provide buses with the same internal bike storage to Wessex Water for the company's shuttle bus service from Bath City Centre  <p>Figure 3 – Eve Coaches ADL Internal Storage</p>	<ul style="list-style-type: none">• The bicycle racks are inexpensive with costs to manufacture and install circa £1,500• Storage for 2 bicycles• 2 seats cannot be used when in use• Takes up wheelchair or pram space (which take priority) when in use



<p>Stagecoach</p> <ul style="list-style-type: none"> Bowness to Grasmere 	<p>Wrightbus (with Volvo Chassis)</p>  <p>Figure 4 –Wrightbus internal storage</p>	<ul style="list-style-type: none"> Storage for 2 bicycles 4 seats removed to accommodate bicycle rack
<p>West Coast Motors</p> <ul style="list-style-type: none"> Mull, Arisaig, Campbelltown and Oban (Operational 2022) 	<p>ADL - Enviro200 / Enviro400 buses</p> <ul style="list-style-type: none"> 8 bicycle friendly buses will be in operation from 2024 onward. 	<ul style="list-style-type: none"> As per Borders Buses solution above

4.1 Coach Services

For city-to-city coach services the operators have different conditions in relation to bicycle storage which is detailed in table 3 below.

Table 3 – Coach Service Conditions of Carriage

Coach Operator	Conditions of Carriage
Stagecoach	Full size bicycles can be stored in the storage compartment. Folding bicycles are also permitted on services provided they are stored correctly and covered. This however is not pro-actively marketed or communicated.
Megabus	Do not permit carriage of full-size bicycles. Folding bicycles are permitted however this is at the driver’s discretion.



Citylink	The Bikes on Buses scheme delivered in partnership with HITRANS includes six routes across the Highlands. The available services can carry a maximum of two bicycle services at a time. With branded bicycle socks to cover bikes available upon boarding. Bike storage can be booked at the same time as making a seat reservation.
Ember	Provide services between Edinburgh and Dundee. Internal storage space can be booked for bicycle storage when purchasing a ticket. Bicycle bags are made available on the bus. Folding bicycles are also permitted and there is no requirement to book a storage space in advance. Bicycles are also permitted on board in the wheelchair space provided there are no wheelchair users traveling.

5 Trials

There have been a number of trials conducted in the UK, particularly in relation to external bicycle storage solutions. Details on these trials, the objectives and the results are detailed in Table 4 below. There are no specific examples in the UK of trials focussed on commuters, all trials are geared towards leisure use.

Table 4 – Bicycle Friendly Bus Trials

Trial	Results
<p>Moray Council / Stagecoach</p> <p>External, rear mounted, bicycle racks introduced as part of a two-year Scottish Government Bus Investment Fund award in 2015.</p> <p>Intention of the trial was to enhance the bus service and cycle access across the Moray seaboard communities and support an enhanced bus service between Findhorn, Kinloss and Forres.</p> <p>The DVSA were engaged on a front mounted bicycle rack solution however this was not pursued after the DVSA were unsupportive of the proposals.</p>  <p>Figure 5 - Stagecoach external storage solution</p>	<ul style="list-style-type: none"> • The trial ended in 2017 • There was limited demand from cyclists • An issue was identified with indicator and tail light visibility by the DVSA and they were unable to certify the initial design • Stagecoach trialed several other design options before finding a solution acceptable to the DVSA • The solution was vulnerable to damage and projected at the rear when not in use rather than folding up visibly against the rear panel. One rack was damaged by a third party collision not seeing the projection and was replaced.
<p>Transition Black Isle / Stagecoach</p> <p>Rear mounted bicycle racks were installed on three Stagecoach buses (as per Figure 5 above) as part of the Million Miles Project, funded by the Climate Challenge Fund. The racks were trialed on the Inverness to Cromarty Bus route to encourage both individuals and the bus company to normalise the</p>	<ul style="list-style-type: none"> • Bicycle racks were not fitted to all the buses and the services were not at consistent times of day. As such there was no guarantee the passenger would be able to mount their bicycle for the outbound or returning journey



use of bike/bus/walk integrated travel. This route was selected as it passed the Learnie Red Rocks mountain bike trails.

- Fixing the bicycle to the bus added to journey times, increasing the time pressures for the bus operator to meet timetables
- Bicycle rack could only take two bicycles which limited use

The following recommendations were identified for any future trials:

- Simplify process of getting the bicycles onto the bicycle rack, ideally enabling quicker access and for more bicycles
- Guaranteed reliability of buses with bicycle storage
- Longer-term commitment from operators to help cyclists use buses
- Bus timetables that take account of time required to load bicycles

South Cambridgeshire Council – BikeBus Explorer

Funded by the Council, Local Sustainable Transport Fund and National Trust. The BikeBus Explorer went live in July 2014 and consisted of a public bus service with a trailer (manufactured in Netherlands) which could store 20 bicycles.

The services ran four times a day every Sunday and Bank Holiday from Cambridge railway station connecting Wimble Hall and villages between Barton and Gamlingay with the city.

Objectives of the trial included;

- provide a public transport option to enable access to countryside recreation and encourage shift towards sustainable transport
- encourage recreational cycling and improve the health and wellbeing of both Cambridge City and South Cambridgeshire residents
- reduce the impact of journeys generated by visitor attractions along the corridor

The service ceased operation in March 2016. A report detailing the findings and learnings from the service was produced². A summary of the lessons are detailed below;

- Service only attracted around 10% of predicted passengers (non-bicycle carrying) which considerably reduced income
- There was little interest from local residents using the service on a Sunday to travel to other villages or into Cambridge and the Councils decided not to make a contribution to the cost of the service
- Significant marketing activities were completed however feedback provided that the bus stops (near car parks) were not distinctive enough to encourage new users for return trips as an alternative to the car

² <http://discover.pjb.co.uk/wp-content/uploads/2016/12/Bus-Bike-Explorer-South-Cambridgeshire-v2.pdf>



Figure 6 - BikeBus Explorer Trailor solution

Bath City Council

A Bath City Council representative (Bikes on Buses) shared the insight that a trial for front mounted external bicycle racks was planned in Bath in 2014. Bath was identified as an ideal location due to the hilly terrain.

The Council, MP and Transport Minister were all supportive of the trial however the DfT did not support the proposals.

DfT required evidence to prove the solution was safe. This prevented the trial from taking place.

The West England Combined Authority have confirmed there are no plans for any future trials

Bus Vannin (Isle of Man)

Front mounted external bicycle storage was trialed by Bus Vannin the bus operator in the Isle of Man



- The trial was unsuccessful and was discontinued shortly after commencement



Figure 7 – External storage solution on Isle of Man Bus	
<p>Borders Buses Demand Responsive Transport Service – Berwickshire – Scottish Borders.</p> <p>Externally, rear mounted bicycle storage was considered for the Borders Buses PINGO bus.</p>	<ul style="list-style-type: none">• It was determined that there was a risk for rear windscreen failure and the decision was made to allow bicycles on board the bus.



6 International Bicycle Storage Solutions

External bicycle storage on public buses is available extensively in the United States, with almost all major cities (with the exception of New York) offering external bicycle storage on public bus services. External bicycle storage on public services is also offered extensively in Canada, Australia, New Zealand and in parts of Europe, Table 5 provides a sample of the services available.

The section below details some of the solutions in use internationally which could potentially be utilised in the UK. There are no examples of bicycle storage on bus roofs (as per cars), via a motorised system.

6.1 Vertical Internal Bicycle Storage

The solution in Figure 8 was installed on a Wrightbus Streetcar (bus) in Las Vegas. The advantages of this solution are that the fold up seats can still be used, and the cyclist can be seated beside the bicycle, potentially being more space efficient than horizontal storage options. However, the cyclist would require a high level of physical strength to utilise this solution and may not be practicable for all cyclists.



Figure 8 – Wrightbus solution Wrightbus Streetcar

6.2 Front Mounted External Storage



Sportworks supply over 500 public transport agencies across North America with bicycle storage solutions on buses³. Their Front-loaded external solution is available to carry either two or three bicycles. Cycle-Works based in Portsmouth are a UK supplier of bicycle storage solutions on buses⁴.



Figure 9 – Sportworks front loaded bicycle rack



Figure 10 - Sportworks front loaded bicycle rack (3 bicycles)

6.3 Rear Mounted External Storage

There are a number of services with rear mounted bicycle storage, several examples are detailed below in Figures 11 to 13.

³ <https://www.sportworks.com/products/transit-bike-racks>

⁴ <https://cycle-works.com/products/bus-racks/>



Figure 11 – Public service bus, Lake Garda, Italy, 2018



Figure 12 – FlixBUS, Europe-wide see Table 5 for more details



Figure 13 – Public bus service Madrid, see Table 5 for more details



Table 5 – International Bicycle Friendly Services

Location	Operator	Services / Solution
USA		
Portland, Oregon	TriMet	<ul style="list-style-type: none"> • 85 bus routes • All buses fitted with external racks
Seattle, Washington	King County Metro	<ul style="list-style-type: none"> • 237 bus routes • All buses fitted with external racks
New Jersey, New Jersey	Transit	<ul style="list-style-type: none"> • 871 bus routes • Half bus fleet fitted with external racks
Chicago, Illinois	Chicago Transit Authority	<ul style="list-style-type: none"> • 129 bus routes • All buses fitted with external racks
San Francisco, California	San Francisco Municipal Transportation Agency	<ul style="list-style-type: none"> • 44 bus routes • All buses fitted with external racks
Canada		
Windsor, Ontario	Windsor Transit	<ul style="list-style-type: none"> • 16 bus routes • All buses fitted with external racks
New Zealand		
Christchurch	Metro	<ul style="list-style-type: none"> • 26 bus routes • All buses fitted with external racks
Europe		
Europe wide – intercity coach service	FlixBus	<ul style="list-style-type: none"> • 2,000 bus routes • External rack on back of bus for 5 bicycles
Madrid, Spain	Madrid Municipal Transport Company	<ul style="list-style-type: none"> • External rack on back of bus for bus routes to the airport and the largest park area in the city



7 Scottish Borders Bikes on Buses Survey

To support the review of the 2019/20 SUStran investment in bike storage capacity in Borders Buses fleet (initial operations were interrupted by COVID 19), the Workforce Mobility Project and Borders Buses committed to supplement the desk top review with passengers surveys to assess the impact of the investment in 2023.

The Workforce Mobility Project undertook two periods of 'in-person' passenger surveys onboard Borders Buses Bike Friendly Services: 253, X95 and X62. As detailed in Table 2, these services allow for the internal storage of 2 – 4 bicycles. The intention of these surveys was to understand the following:

- Passenger awareness of the available bike storage;
- Whether passengers have used or have considered using the storage facilities;
- Barriers to use;
- General perceptions of the service;
- Areas to be improved; and
- Any negative impacts to the existing service.

Two Bike on Bus survey periods took place during the course of 2023, targeting times of normal and exceptional use, to maximise the opportunity for feedback and learning from user experiences in differing periods of demand. The first set of surveys were carried out over four days in late March (27th, 29th, 30th) and early April (1st). Additional survey days took place on the 26th of April and 13th of May as one of the survey days in the original batch was incomplete.

The first survey period selected fell over a Monday, Wednesday, Friday, and Saturday as the intent was to reach individuals commuting for work and travelling for leisure.

The second survey period took place on Sunday the 6th, Tuesday the 8th and Wednesday the 9th of August during the UCI Cycling World Championships. The surveys were scheduled to coincide with cycling events held at Glentress Forest. The intent behind this was to engage with a wider range of bus users attracted to the area by the event to understand if this attracted higher demand for bike storage, caused any user issues and improved public awareness and marketing of the provisions.

In total, 543 responses were collected with 265 responses collected in the first survey period and a further 278 collected in the second period.

Across both survey periods, the majority (87% and 88% respectively) of survey responses reported that they were aware of the internal storage racks available on most Borders Bus services. Of these respondents, use of the storage racks varied between survey periods. The majority (77%) of respondents in the first survey period stated that they had not previously used them while 51% of respondents in the second survey period reported using the racks. Across both survey periods, the



majority (80% and 85% respectively) of individuals who had used the bicycle racks stated that they did not experience any barriers to usage.

Most respondents in both survey periods (64% and 51% respectively) indicated that they planned to use the internal storage racks in the future.

The three most common reasons for bus travel with a bicycle for respondents in both are shown in Table 6:

Table 6 – Common Reasons for ‘Bike on Bus’ Usage

Survey 1	Survey 2
Commuting (37%)	Commuting (33%)
Travelling to low traffic/scenic area to cycle (25%)	Visiting friends and family (17%)
Visiting friends and family (17%)	Travelling to low traffic/scenic area to cycle (14%)

General observations gathered from survey respondents provided the following observations:

- There is a general positive sentiment about the bike racks which were perceived as convenient.
- Perceptions of how well used they are varied with some respondents stating that young people were unaware of them, while others reported seeing them used often by young people.
- The ability to book storage space on board or confirm whether a particular bus has storage facilities would be welcomed by some survey respondents.

Some of the primary concerns from respondents were:

- The entrance to the bus being too narrow to comfortably enter and exit with a bicycle.
- The size and number of storage racks were perceived by some to be insufficient for varied bike sizes and more than one bicycle.
- Some individuals mentioned feeling guilty about taking up additional space on buses during busy periods; and
- Whether both bicycles and buggies can be accommodated at the same time.

7.1 Breakdown of Borders of Survey Results

As detailed in Table 7 the largest number of responses from the first survey period were collected on bus number X62 (138), almost doubling that of the X95 (74). The least number of responses were collected on an unspecified bus number followed by bus 253 with 52 responses. For the second survey period, the highest number of responses were collected again on bus number X62 (138), closely followed by the X95 (126). It is likely that most responses were collected on the X62 buses as it provides access to Glentress Forest, which is a key leisure trip attract for the region and hosted Cycling World Championships during the second survey period. The X95 bus route is a prime commuter bus which travels along the A7 corridor.



Table 7 - Survey Responses by Bus Number

Response by Bus Number			
X62	X95	253	Other
Survey 1			
138	74	52	1
Survey 2			
125	126	27	0

During both survey periods, most surveyed bus users (87% in period 1 and 88% in period 2) reported that they were aware that bike storage racks were available on most Borders Buses, as shown in Table 8.

Table 8 - Are you aware that you can use internal storage racks for your bike on the majority of Borders Buses?

Response	Number	Percentage
Survey 1		
Yes	230	87%
No	35	13%
Survey 2		
Yes	244	88%
No	34	12%

Despite a high level of awareness of the internal bike storage racks on board Borders Buses, in the first survey period 77% of users reported that they had never used them, as shown in Table 9. In the second survey period, reported usage of the internal bike storage racks was almost equally split.

Table 9 - Have you ever used the internal bike storage racks on a Borders Bus service?

Response	Number	Percentage
Survey 1		
Yes	62	23%
No	203	77%
Survey 2		
Yes	142	51%
No	136	49%



As shown in Table 10, of the respondents in the first survey period that reported using the internal bike storage racks, 80% reported that they had not experienced any barriers when attempting to store their bikes. This increased marginally to 85% in the second survey period.

Table 10 - Have you experienced any barriers when attempting to store your bike on the bus?

Response	Number	Percentage
Survey 1		
Yes	14	20%
No	56	80%
Survey 2		
Yes	22	15%
No	122	85%

As shown in Table 11, 46 respondents (64%) in the first survey period stated that they planned to take their bike on a Borders bus in the future, with only 7 (10%) confirming that they would not take their bike on a bus. This increased in the second survey period to 143 respondents (51%) stated that they planned to take their bike on a Borders bus in the future. However, the percentage of passenger that responded 'No' increased significantly to 37%, from a larger survey sample.

Table 11 - Do you plan to take your bike on a Borders bus in the future?

Response	Number	Percentage
Survey 1		
Yes	46	64%
No	7	10%
Maybe	19	26%
Survey 2		
Yes	143	51%
No	102	37%
Maybe	33	12%



Table 12 shows that most passengers in survey 1 (37%) and survey 2 (33%), who have previously used a bike rack, listed commuting as the purpose of their journey. This is an interesting outcome of the surveys as it is contrary to the previous bike on bus pilot projects from around the country that have predominately focused on leisure trips.

Leisure, shopping and tourism are key trip purpose with a combined score of 60% in survey 1 and 67% in survey 2.

Table 12 - If you have previously used a bike rack, what was the purpose of your journey?

Journey Type – Survey 1	Number
Commuting	37%
Travelling to low traffic/scenic area to cycle	25%
Visiting friends and family	17%
Shopping	7%
Travelling to/from a social event	6%
Tourism	3%
Commuting, travel to an event and shopping	1%
Education	1%
Other: Have used it for both commuting and travelling to Glentress Forest	1%
Other: Visiting friends to go on a group cycle	1%
Journey Type – Survey 2	Number
Commuting	33%
Visiting friends and family	17%
Travelling to low traffic/scenic area to cycle	14%
Travelling to/from a social event	14%
Shopping	12%
Education	5%
Tourism	4%
Other: Open Horizon for Cycling	1%
Commuting, travel to an event and shopping	0%

7.2 Other Insights

The survey invited respondents to provide additional feedback on the bike on bus storage experiences. A lack of space on the bus for bikes, particularly during busy periods such as the summer months, was cited multiple times across both survey periods as the reason why the bike storage racks were not used. Other concerns recorded from both surveys include:

- Potentially having to give up space for a baby buggy or feeling guilty about taking up additional space with a bike during busy periods.
- The design of the bus and bike storage acting as a potential barrier to usage.
- The entrance to the bus was perceived by one respondent as ‘too narrow’ to board with a bicycle.



- The storage being insufficient for larger cycling groups or certain types of bikes such as those with 29-inch wheel or downhill bikes.

Some users reported that they did not know where the storage racks were located. There were also several comments mentioning that users in younger demographics were unaware that onboard bike storage exists. This was slightly contradicted by other comments stating that young people were often observed using the racks.

Several respondents noted that the storage racks were a good idea albeit underutilised. While another noted that a booking system would encourage more usage.

The general commentary (particularly from the second survey period) was positive with respondents stating that the racks were useful for bike and scooter storage.

7.3 Recommendations

Observation	Recommendation
Bike racks may be underutilised by certain demographic groups	<p>Targeted messaging encouraging usage can be tailored and circulated to selected demographic groups via external communication channels. This needs to be a coordinated approach between private and public sector partners, key agencies and local bodies. Regional Transport Partnership can play a key role in strategic messaging and partnerships. Encouraging key trip attractors and businesses to promote the use of ‘bike on bus’ as a viable alternative to car use and build on the success in the Scottish Borders for other areas. Highlight the opportunities for businesses to invest in supporting employees make sustainable travel choices with the Workforce Mobility Funding Factsheet Workforce Mobilty – The Edinburgh and South East Scotland City Region Deal (esescityregiondeal.org.uk)</p>
Some users have expressed concerns about the size of bikes that can be accommodated by available storage	<p>Develop marketing materials providing details of the bike sizes that can be accommodated by on board storage. These could include:</p> <ul style="list-style-type: none"> - Posters at bus stops and on buses



	<ul style="list-style-type: none"> - Information on the Operators website and social media channels. - Information on partner websites <p>Provide user feedback to manufactures to support the development of racks as bike types develop (larger mountain bikes and E-Bikes etc)</p>
<p>Buser users may not know how to use bike racks</p>	<p>Recirculate existing or develop new instructional videos via a refresh campaign.</p> <p>During the campaign period, have onboard 'Bike champions' on hand to assist people with using bike racks.</p> <p>Use on-bus display screens (where available) to showcase instructional videos for bike users.</p>
<p>Some users have expressed concerns about bike racks being unavailable on certain services or potentially full when they attempt to use them.</p>	<p>Deliver campaigns to ensure that users are aware of which bus services are cycling friendly.</p> <p>Operators App or websites should be developed to include a bike rack booking system and live information informing the user about availability of bike racks on each bus services during operation.</p>
<p>Previous trials have failed due to the lack of bike infrastructure on multi-bus journeys.</p>	<p>When trials or investment in bike on bus storage is considered, the investment needs to be coordinated on multi-bus/operator routes to key trip attractors so that the whole journeys can be accommodated for commuting or leisure purposes.</p> <p>Circulate this report to Regional Transport Partnerships and Sustran to build on lessons learnt from previous pilots and services.</p>
<p>Bicycle storage on buses may be perceived as only beneficial to cyclists and not other transit users.</p>	<p>Ensure that campaigns communicate how bicycle friendly bus services fit into the wider ecosystem of sustainable travel.</p> <p>Provide user feedback to manufactures to support the development of racks to be more flexible for multiple passenger usage.</p>



Bicycle storage facilities might not meet the requirements of users.	Cyclists and bus users should be consulted when planning bike/transit programmes and when purchasing hardware.
UK pilot projects seem to be focused in rural and remote rural locations.	Develop 'bike on bus' user surveys for established intercity services like Ember (between Dundee and Edinburgh) to ascertain whether there is demand and if the reasons for the bike usages differ from current rural pilots and services.
In the April and May 2023 surveys, only ¼ of people interviewed took their bike on the bus. This was a neutral time of the year to undertake the survey to reflect normal usage conditions.	A review of the 'first mile / last mile' infrastructure linking into bus corridors needs to be undertaken as part of a holistic delivery of sustainable transport interventions. Targeted investment in Active Travel infrastructure providing safe linkages from rural areas, housing sites, key employment zones and trip attractors into public transport corridors will support the growth in integration between bike / bus and bike / train.



8 Bicycle Friendly Trains

Whilst the commission is focused on bicycle friendly buses it should be noted that there is considerable integration of cycling and rail travel in Scotland.

ScotRail has launched an 'active travel' service with a dedicated carriage for bicycles. The project involves the refurbishment of an existing carriage and can carry up to 20 bikes and 24 people. The project forms a pilot study to inform future rolling stock strategy in terms of demand for passengers with bicycles. Three 'active travel' carriages went live on the Oban to Glasgow line in 2022. With a further two 'active travel' carriages going live in 2023 on the Glasgow to Mallaig line.

The bicycles are stored both vertically and horizontally as detailed in Figure 15 below.



Figure 14 - Class 153 Exterior



Figure 15 - Class 153 Carriage Design



9 Next Steps

The following steps are recommended to help support bicycle friendly buses in the ESESCR and develop a better understanding of the benefits:

- Identify funding sources to initiate projects to deliver the recommendations of this report;
- Work with partners to initiate projects that deliver the recommendations of this report;
- Assess existing demand for bicycle friendly buses to help target marketing and information campaigns;
- Understand existing users (e.g., leisure or commuting) of bicycle friendly bus services, to help target marketing and information campaigns;
- Assess potential level of demand for bicycle friendly bus services. This can link to the data projects being delivered by the Workforce Mobility Project and the development of the Regional Bus Strategy and local Active Travel Plans;
- Quantify benefits of existing bicycle friendly bus services and how they contribute towards national (National Transport Strategy 2), regional and local objectives;
- Further engagement with Bus Operators to identify opportunities for new services or to increase existing capacity;
- Engage with manufactures to provide feedback from customers and identify developments in bike storage solutions;
- Engagement with the DVSA to better understand their concerns related to front mounted external bicycle storage;
- Understand how technology could help provide confidence to users that bicycle storage will be available on a specific bus, where not all buses on the network are bicycle friendly;
- Pilot technology solutions for booking and monitoring bike storage on current and future services;
- Highlight to SUStans & Sustran the recommendations of this report to ensure that future investment in bike on bus storage is coordinated across routes to key trip attractors, especially where a user requires multiple operators to complete the journey;
- Highlight to Sustrans, SEStran and all Local Authorities the role Active Travel Strategies have in providing safe linkages for bike users into the sustainable transport networks; and
- Work with intercity operators to undertake similar user surveys to understand the comparison of urban and rural use cases.



10 Appendix 1 – DfT Letter on External Bicycle Racks Legislation



Mr Peter Davenport (by email)
Peter.davenport@bikesonbuses.com

James Brown
IVS Correspondence Unit

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Direct Line: 0207-944-2091

Web Site: www.dft.gov.uk

Our Ref: IVS Enquiries

17 October 2014

Dear Mr Davenport,

Cycle racks on the front of Buses

Thank you for your email dated 16 October to the Department for Transport regarding cycle racks on the front of buses. Your correspondence has been passed to us in International Vehicle Standards (IVS) as we have responsibility for vehicle safety.

I would like to explain the legal situation around these cycle racks, which you are suggesting should be mounted on the front of buses or coaches. The rules on overhanging loads are not valid in this case as the bicycle rack itself carries a load, and therefore is not a load but is deemed to be part of the vehicle for the purposes of length calculations.

Vehicles, including buses, are subject to legal limits on their length. In the case of buses and coaches, the limits are 13.5m for a two axle vehicle and 15m for a three axle vehicle. If a bus is not already at the legal limit for length, then there is nothing to prevent a cycle rack being mounted onto the front of that bus, as long as it stays within the legal limit. However, if a bus is at the legal limit, as they often are, then you cannot mount a cycle rack on the front because the vehicle would exceed the legal limit for length.

So to conclude, it will be possible to fit these cycle racks on some buses but not all buses, depending on their length.

The Department cannot give an authoritative interpretation of the law; that is a matter for the courts.

Yours sincerely,

James Brown



11 Appendix 2 – Questions to Stakeholders

Questions to Stakeholders
1. Images of bike rack requested.
2. Who does the design of the storage rack on Stagecoach buses belong to?
3. What was the cost to manufacture and install storage racks on Stagecoach buses?
4. Which company manufactures the Volvo Wrightbus?
5. Does the storage unit on the Volvo Wrightbus result in a reduction of two seats on the bus?
6. Share details on passenger numbers and usage of bike storage on East Yorkshire buses.
7. Confirm whether WECA have considered Bike on Bus trials.
8. Share details on the external bike rack trial between Inverness and the Black Isle.
9. Share any findings from when bike on services were available.
10. What led to the external bike storage being removed from the services?
11. Is the internal bike storage solution available on any other bus services across the UK apart from Alexander Dennis buses?
12. Are there any bus operators looking to implement this in the future?
13. Is the internal bike storage solution only available on Alexander Dennis buses or could it be implemented on other buses?
14. What is the rough cost to manufacture and install?
15. Images of storage racks on Wrightbus requested.
16. Who does the design of the storage rack on Stagecoach buses belong to?



Workforce Mobility Project