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Bus Back Better Support Programme

Support Package 3: Low cost and quick wins

March 2023

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Bus Back Better Support Programme

Support Package 3: Low cost and quick wins

March 2023

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Glossary

Term	Definition
Branding	Process of creating a distinct identity for a business
BRT	Bus-rapid-transit
BSIP	Bus Service Improvement Plans
CIHT	Chartered Institute of Highways and Transportation
Communication Plan	Defines what information should be communicated and who should receive the information, when information should be shared and with who.
DfT	Department for Transport
EEH	England's Economic Heartland
EP	Enhanced Partnership
LA	Local Authorities
Low cost and/or quick win	less than £100,000 and/or takes no longer than 18 months to implement and has the potential to increase bus patronage
LTAs	Local Transport Authorities
Marketing	Business of promoting and selling products or services
STB	Sub-National Transport Bodies
TAG	Governments Transport analysis guidance
TE	Transport East
TfSE	Transport for the South East
TSP	Transit signal priority

1 Introduction

This technical note is one of a series produced as part of the joint project commissioned by three Sub-National Transport Bodies (STBs), England's Economic Heartland (EEH), Transport East (TE) and Transport for the South East (TfSE), to help support Local Transport Authorities deliver the government's National Bus Strategy for England ('Bus Back Better'). To deliver this strategy, the government has invited Local Transport Authorities (LTAs) and bus operators to formally collaborate and work with stakeholders and bus users to identify, and then implement, initiatives that will improve bus services and attract new users. It is envisaged that these improvements will be delivered through Bus Service Improvement Plans (BSIPs), Enhanced Partnership (EP) schemes, and franchising.

1.1 Background

The Department for Transport (DfT) has identified some additional funding to support its key priorities. There are four areas where STBs could undertake further work:

- **Decarbonisation:** Helping the DfT and Local Authorities (LAs) to implement the commitments made in the Transport Decarbonisation Plan.
- **Buses:** Helping LAs to deliver on the commitments in Bus Back Better and develop an effective intra-regional bus network.
- **Electric Vehicle (EV) Infrastructure Strategy:** Assisting LAs in the rollout of EV infrastructure, potentially through regional strategies.
- **Local Authority Capability:** Playing a role in building capability within resource- constrained LAs, to help them in the planning and delivery of local transport.

Three STBs, EEH, TE and TfSE, have joined forces to deliver a package of work to assist LTAs within the three regions with the delivery of their BSIPs and implementation of their EPs. The LTAs are:

- **England's Economic Heartland:** Bedford, Buckinghamshire, Cambridgeshire, Central *Bedfordshire**, *Hertfordshire**, *Luton**, Milton Keynes, North Northamptonshire, *Oxfordshire**, Peterborough, Swindon, West Northamptonshire.
- **Transport East:** *Norfolk**, Suffolk, Essex, Southend-on-Sea, Thurrock.
- **Transport for the South East:** Bracknell Forest, *Brighton & Hove**, *East Sussex**, Hampshire, Isle of Wight, *Kent**, Medway, *Portsmouth**, *Reading**, Slough, Southampton, Surrey, Windsor & Maidenhead, Wokingham, *West Berkshire**, *West Sussex**.

(indicates an LTA that has received BSIP funding)*

The project supports all the LTAs whether they have received DfT funding for their BSIPs or not.

The project is split into two stages. The initial stage of the project – **triage and prioritisation** – ran from August to December 2022. It took stock of LTAs' current progress in delivering the BSIPs and scoped the work programme for future delivery activities. Online workshops were held in September 2022 and provided a forum for LTAs and bus operators to discuss their aspirations and explore themes, priorities, challenges, and potential solutions. The project is ensuring that opportunities for technical pieces of work that would benefit multiple authorities are identified and progressed.

The second stage of the project – **implementation** – involves the delivery of support packages for the following topics that were identified during Stage 1:

- Support Package 1: Fares and Ticketing
- Support Package 2: Data Analysis, Monitoring and Evaluation
- **Support Package 3: low cost and quick win Solutions**
- Support Package 4: Building a Strong Case
- Support Package 5: Infrastructure and Road Space
- Support Package 6: Demand Responsive Transport
- Support Package 7: Rural Hubs and Integration
- Support Package 8: Funding Mechanisms
- Support Package 9: Collaborative Working
- Support Package 10: Marketing
- Support Package 11: Alternative Fuels and Low Emission Vehicles

Support will be delivered using a mix of channels, including webinars, toolkits and guidance, case studies and one to one support. It will also include establishing bus forums in each of the three STB areas to promote efficiency, avoid duplication of effort, share knowledge and best practice, and identify where joint working would be productive. The technical work will be undertaken to collate evidence and research. The emphasis will be on a regional approach so that common themes can be identified but localised assistance will be available to improve capacity in LTAs and provide specialist inputs regarding local issues.

1.1.1 Intended outputs and outcomes

Project Outputs: Improved delivery of BSIPs and EPs, and support to LTAs who have not received government funding in the current round. This will include:

- Enhanced evidence base through research papers on prioritised knowledge gaps.
- Knowledge sharing within and between STBs and their constituent members and between the public and private sectors.
- Better resourced LTAs through prioritised third-party support, provided in targeted areas.

Project Outcomes: These outputs will seek results in outcomes aligned to the National Bus Strategy including:

- Increased patronage.
- Enhanced accessibility and social inclusion.
- Reduced carbon emissions and improved public health.
- More commercially sustainable bus networks.

TfSE is managing the project on behalf of the three STBs. A consultant consortium of Mott MacDonald and Arup is delivering the project. A Steering Group has been established, comprising the DfT, the three STBs, representatives from some of the LTAs, and Mott MacDonald and Arup.

1.2 Overview

This technical note covers potential initiatives that could be introduced relatively quickly and at low cost. Many of the LTAs seeking funding through BSIPs did not receive an allocation although they are required to progress their Enhanced Partnerships and update their BSIPs in anticipation of future funding. Some improvements can be made by reassessing a number of areas from the consumers' point of view including:

- Better marketing and branding of bus services;
- Better service information, both availability, quality and legibility;

- Enhanced accessibility to bus stops;
- Improvements to bus stops, including creating bus stop hubs;
- Improvements to the bus journey experience, such as on-board information or journey time improvements; and
- Using after-journey data from customers to improve all aspects of journeys.

The Technical Note includes the following components:

- **Section 2:** defines what constitutes a low-cost quick win for the purposes of this note;
- **Section 3**: outlines a framework methodology for assessing low-cost quick wins;
- **Sections 4-8:** look at examples of low-cost quick wins, including getting the foundations right, building on those foundations and examples of low cost and/or quick win improvement schemes that have been implemented:
  - Branding, marketing and communication;
  - Service information;
  - Quality of, and access to, bus stops;
  - Bus stop improvements and hubs; and
  - Improving bus journeys.

2 Defining low cost and quick win initiatives

2.1 What is a low cost and quick win initiative?

The term 'low cost and quick win' is ambiguous and can vary according to the context in which it is used. For instance, what is defined as a quick win in one local authority may not be so in another local authority. This could be due to several reasons, such as geographical coverage, political context, the number of bus operators or the number of stakeholders involved. The term is also not mutually exclusive – something can be either low cost or a quick win or can be both.

The term can also cover a wide range of solutions to improving bus services – from improving timetable information at bus stops, to removing parking spaces to improve bus journey times. However, what a low cost and quick win should do is help facilitate an increase in the number of bus passengers.

2.2 What do LTAs consider to be a low cost quick win?

A number of small group sessions were held in December 2022, during which LTAs were asked about what they considered a low cost and quick win improvement to be. This particularly focused on a series of themes – service information, bus stop accessibility and congestion and bus stop hubs. A number of opportunities and challenges were recognised by LTAs, as summarised in Table 2.1.

Table 2.1: Opportunities and challenges for low cost and quick win initiatives

Theme	Opportunities	Challenges
Quick to implement	• Better enforcement of existing agreements already in place • Better publicity of existing initiatives • Revisit procurement arrangements • Implement schemes where the LTA owns the land	• Having the staff resource • Having third party support • Land ownership
Relatively inexpensive	• Utilise funds from outside transport e.g. developer contributions, CIL • incentivising third parties to contribute, particularly operators • Be creative with existing budgets to maximise benefits • Work collaboratively with other departments e.g. health	• Existing budgets can be low/uncertain • Ongoing maintenance costs • Political system influences funding
Potential to increase patronage	• Work with different groups such as Visit England or Visit Britain to increase leisure trips • Undertake trials to test the success of ideas	• Getting the key people needed to deliver an initiative together • Getting someone to take ownership of an idea

Source: December Workshops with LTAs

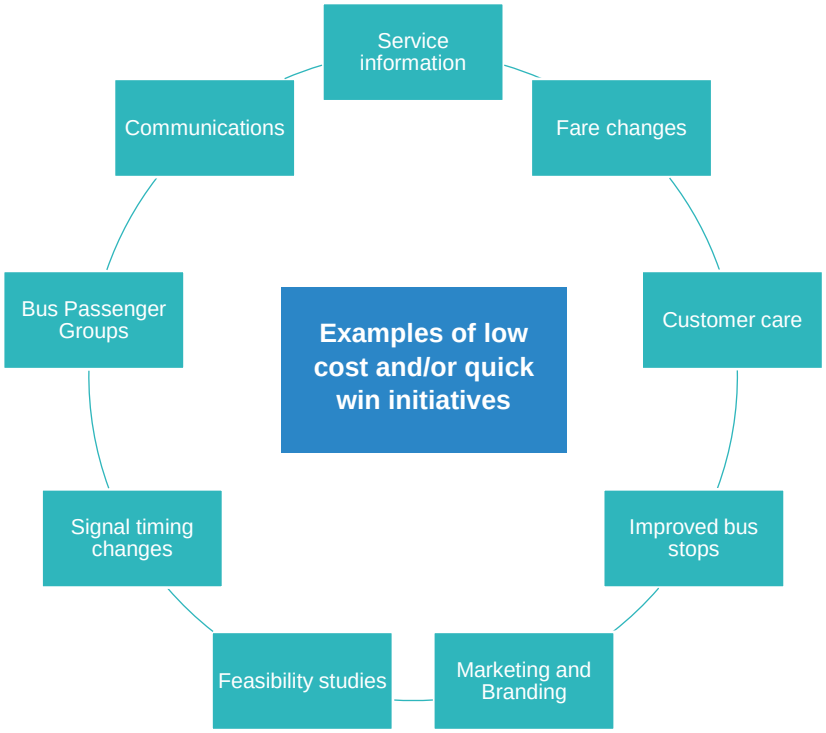
For the purpose of this technical note, a low cost and quick win improvement is defined as something which:

- is **quick to implement**: no longer than 18 months;

- is **relatively inexpensive**: less than £100,000; and
- has the potential to **increase bus patronage.**

2.3 Examples of low cost and quick win initiatives

A low cost and/or quick win initiative can encompass a wide range of initiatives to improving bus services. This could include, but is not limited, the following themes:



As shown above, there are many potential low cost and/or quick win initiatives that could improve bus services. Some of them will be covered in other support packages. Therefore, this technical note will focus on the following areas:

- Communications, branding and marketing;
- Service information;
- Bus stop accessibility and quality auditing;
- Bus stop improvements and hubs; and
- Improving bus journeys.

Figure 2.1 provides an indication of how each of these five areas of focus can be considered a low cost and/or quick win initiative. It is important to remember that a low cost and/or quick win could also include establishing a pipeline for future investment which may either be made available by central government or by securing third-party investment. Similarly, understanding your baseline and collecting data can also be a quick win that builds the foundation blocks for a longer term strategy.

Figure 2.1: Indicative timescales and cost of low cost and/or quick win initiatives

	Low cost		Quick wins	
Type of initiative	**Scope**	**Cost**	**Scope**	**Timescale**
Communications, branding, and marketing	Incremental ramp-up of communications and marketing as budgets permit	Within existing budgets then expand to c. £50,000	Consolidate messaging, determine strategy	Evidence of change within 6 months, programme change within 1 year.
Service information	Improve within existing budgets, expand over time, e.g. in-vehicle information	Within existing budgets then expand c. £50,000	Start making changes now.	Progressive changes starting within 6 months.
Bus stop accessibility and quality auditing	Incremental approach starting with most used stops	Use existing LTA and/or operator resources with support c. £10,000; c. £20,000 per stop.	Audit and user data inform programme of improvements.	Collate data within 3 months, establish programme within 6 months.
Bus stop improvements and hubs	Develop components incrementally	Use audit information then cost programme c. £30,000 per hub.	Identifying options and priorities.	Identify potential locations and scope within 6 months.
Improving bus journeys	Improve existing communications and marketing	User and non-user surveys, c. £50,000.	Engage with users.	Immediate and progressive.

2.4 Roles in delivering low cost and/or quick wins

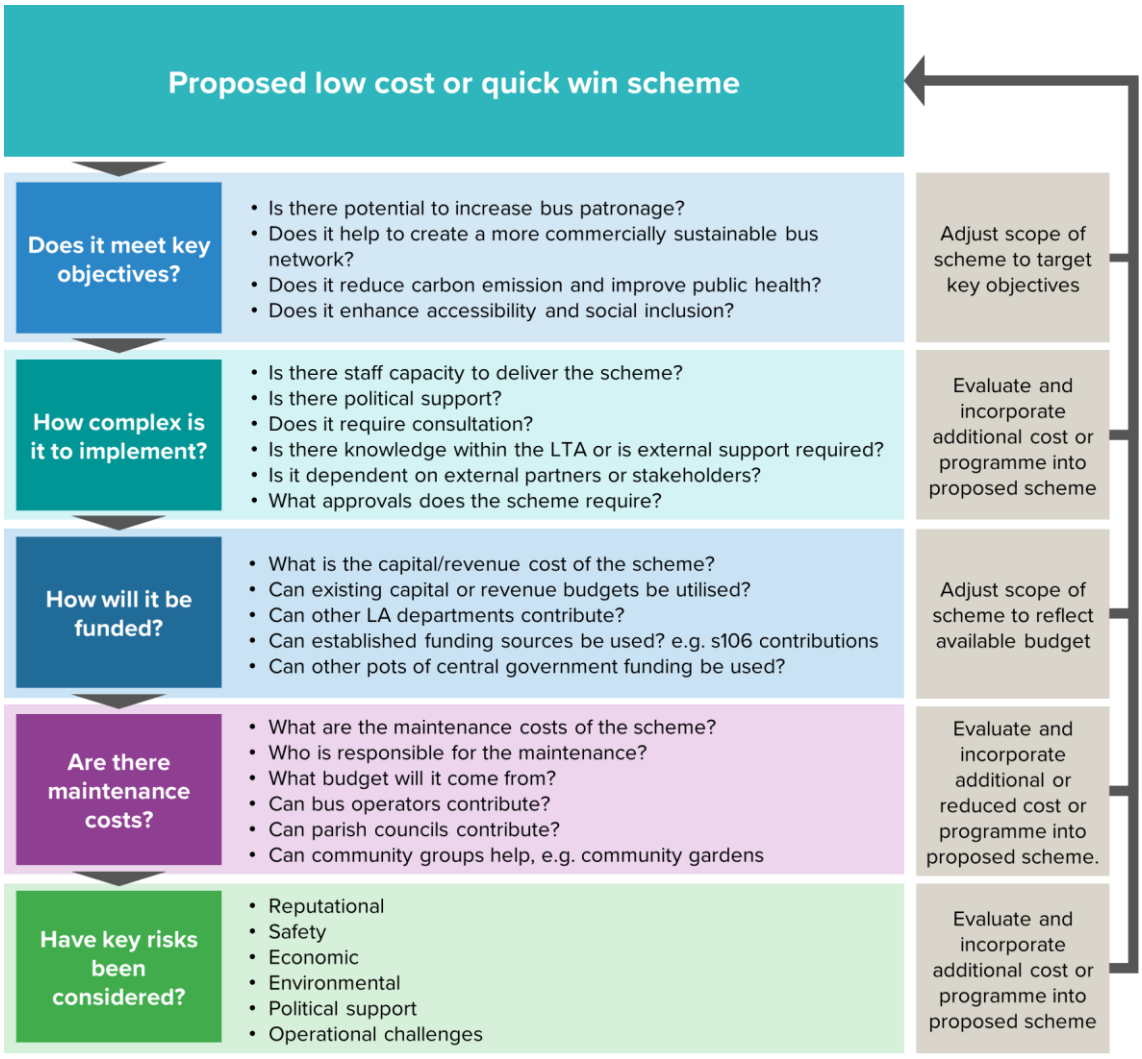
Many low cost and/or quick win schemes require collaborative working between LTAs and operators to be successful. Building on the common goal of achieving growth in the demand for bus travel, LTAs and operators can work together to improve and expand publicity and the availability of bus service information, marketing and engagement; customer surveys can be designed jointly. In developing an audit of bus stop provision, LTAs can identify improvements and a programme of upgrades as budgets permit. Similarly, LTAs and operators can collate evidence to present a case for bus priority measures for design and implementation as resources permit.

3 Framework methodology

This chapter outlines a framework methodology to identify and evaluate low cost and/or quick win schemes that can be delivered through a better allocation of existing capital or revenue budgets or make the best use of established funding sources (for example, S106 contributions).

Figure 3.1 provides a framework methodology for assessing low cost and/or quick win schemes. It is important to consider how the scheme meets key objectives, and consider timescales, funding and ongoing maintenance costs and key risks which could arise.

Figure 3.1: Framework Methodology



In this methodology, low cost and/or quick win schemes are assessed against a number of factors which help determine whether a scheme should be brought forward. At first, the scheme is assessed against several key objectives. At the core, a scheme should have the potential to increase bus patronage. If a suggested initiative does not have the potential to increase bus patronage it should be revaluated. It should then consider social, environmental, and economic benefits which will help build the case for the scheme. For instance, if a service only has a marginal positive impact on bus patronage, but is key to enhancing accessibility and social inclusion this would be taken into account.

The complexity of the scheme is then assessed. This will help LTAs understand any potential blockers to the scheme, such as lack of political support, or where they may need support e.g. resources or expert knowledge. It will also help LTAs begin to think about the timescales for delivery and requirements e.g. if it will need consultation. If a scheme is deemed too complex to implement at this stage and potential blockers cannot be overcome the scheme should be revaluated.

LTAs should then look at how schemes can be funded and maintained. If a scheme cannot be funded, it should be revaluated to see if it can be delivered incrementally, if certain elements can be prioritised or if the cost can be reduced. Finally, the risks of the scheme should be assessed to understand if they outweigh the benefits of the project.

4 Marketing, branding, & communications

Having a robust marketing strategy, recognisable branding and a good communications strategy is essential to keeping existing bus passengers, attracting new users and facilitating a modal shift from private vehicles. Successful bus networks have placed communications between service providers, highway authorities and bus users at the core of their activities. Further information on this topic will be provided in Support Package 10; Marketing.

4.1 Getting the foundations right

There are various facets to communications. At a basic level, it is publicity and promotion of what is being offered to attract and inform customers i.e. service information at bus stops and printed timetable leaflets which extends into online service information in various forms ranging from PDF timetables to download, interactive material about services (such as service routes, timetables, accessibility), and journey planners.

Marketing builds on this and is similarly essential. Research is undertaken to find out where demand exists and where it can be developed and requires more targeted approaches. Marketing of services is typically within the remit of the service operator, rather than the LTA, although LTAs should be cognisant of key market groups to help target their own promotion of sustainable transport initiatives. This too can take several forms but can require user and non-user surveys and data analysis to establish what the customer base might include. This may be more specific with market segmentation being used to consider different types of user who may have different needs to other user groups. For example, older age groups will have different reasons for making bus journeys than younger age groups. Successful marketing acknowledges this and helps to tailor services for these needs. For example, older people are likely to travel at off peak times for shopping and social purposes while younger people are more likely to need access to education, training and work. Further information on this user and non-user surveys can be found in Support Package 2: Data analysis, monitoring and evaluation.

Dialogue should be encouraged between providers and users. This needs to develop beyond customer complaints procedures to more user-friendly communications using a range of media. To achieve this, a communications strategy is necessary to set out what changes will be made, when and by whom which can be set out in a communications plan. Some of the initiatives may be simple such as co-locating communications and operations staff so that everyone knows what is happening and can respond quickly if disruptions occur. The development of a coherent communications strategy for an LTA's area should be accounted for in future Enhanced Partnership agreements so that the advertising of bus services is coherent across regions.

4.1.1 Marketing and promotion

Potential bus users should be identified through market segmentation, which in turn helps generate the best returns by focusing on those who are most likely to take up the offer. Aspects of bus journeys that would appeal to potential users, such as price, journey time or convenience should then be identified and promoted. Bus service features should also be emphasised depending on which group is being communicated to. For example, step-free accessibility to buses and simple ticket transactions might be more important to some segments of potential customers, compared to others which might value late night personal safety through CCTV on board and at bus stops, or to other groups yet again who might value the certainty that live service information provides.

Promotion of bus services is essential in familiarising non-users with their local bus services and can help demystify services and attract new users, thus supporting a modal shift. It is a key tool

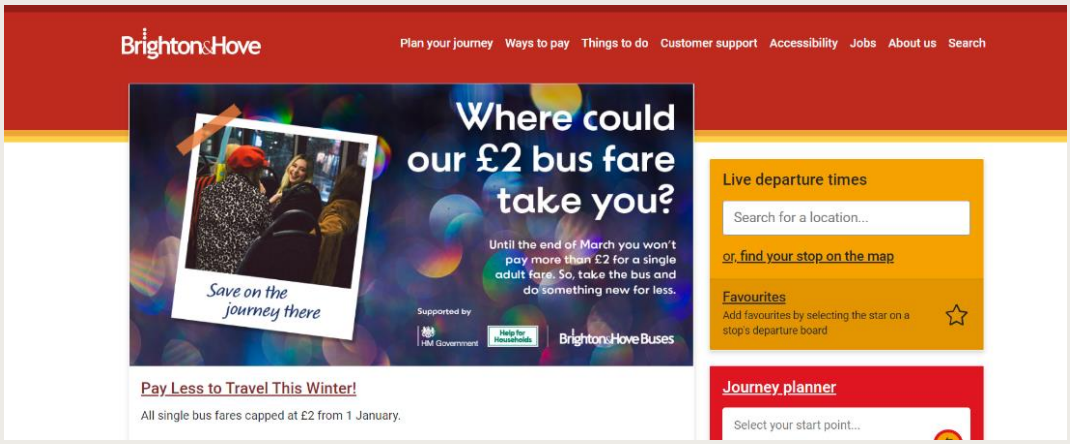
in influencing travel behaviours and should be targeted and is closely linked to marketing. It is also important to frame bus use in a particular fashion, highlighting the positives and benefits to users to encourage uptake.

Promotional techniques should be tailored to consider how to engage with each separate potential customer group in a meaningful way and as simply as possible.

The presence of bus services alone is an inadequate means of promoting them to potential users. To overcome this, information needs to be available in various forms, both online and offline. For example, through intelligible information on appropriate web sites, leafletting premises along and close to the route, providing lively information at bus stops and making sure that the vehicles used are clean and attractive.

Promoting the Government £2 single fare[1]

In January 2023 the government introduced a £2 fare cap on single tickets for a three month period. This is a significant initiative and bus companies can use this opportunity to attract new users with appropriate publicity and marketing, noting that not all have chosen to be involved. The cap of £2 makes taking the bus a more affordable and attractive option for some people. Both Reading Buses and Brighton and Hove buses have highlighted this on the front page of their website, which directly informs and engages customers. Others such as First have used online advertising.



This information about the £2 offer is also on the social media pages for these two companies. Other companies have also posted this information, but it is not as visible. Another way of promoting this scheme has been to put it directly onto buses, which enables current bus users to learn about the offer, as well as drivers of private vehicles.

4.1.2 Branding

Successful branding schemes appeal to local interests and generally reflect a clear local identity, regardless of which bus operators are active in the area. This promotes familiarity and aims to provide an identity that customers can relate to. For instance, Transdev buses use local celebrities' voices and customers' voices for their bus service announcements which 'preserves that local, familiar feel'.[2] Another example of successful branding is route branding, which should apply to publicity materials, bus stops and vehicles. It should be recognisable by all users, including visitors to an area. Such schemes aim to make bus services relevant to the community they serve and create good customer experiences.

Reading Buses
In Reading, each core route is allocated a different colour – it includes bus exteriors, internal seating and lighting. Spare vehicles are branded in grey. The three buses below are each for a different route, **Yellow, Purple** and **Scarlet/Ruby.**

These Reading buses are distinct and recognisable especially amongst local people which has helped to generate growth in demand**.**[3]

4.1.3 Communications Plan

Often, improvements are made to bus services but are not effectively communicated to passengers, meaning that passengers are unaware of the potential benefits bus travel may bring or even what is available to them. An effective communications plan is essential for promoting bus use, by setting out the messages and channels that information about changes to bus services is communicated to different customer groups, and this in turn can help to make

[1] Department for Transport. (2022) *£2 bus fare cap*. Available from: £2 bus fare cap - GOV.UK (www.gov.uk), Brighton and Hove Buses. (2023) *Pay less to travel this winter*. Available from: Brighton & Hove Buses and Department for Transport. (2023) *New year cheer: £2 bus tickets for thousands of routes.* Available from: New Year cheer: £2 bus tickets for thousands of routes - GOV.UK (www.gov.uk)

[2] Transdev. (2023) *Technology and Innovation*. Available from: Technology and innovation - Transdev (transdevbus.co.uk)

[3] Michelin. (2023) *Michelin solutions reading buses*. Available from: 032-515-Michelin-solutions-Reading-Buses - Michelin (gk.news)

bus travel more appealing to new passengers who might otherwise be unaware of service improvements.

Brighton and Hove Buses uses various media platforms to communicate with its customers. The website is clear and easy to navigate, enabling users to learn about routes, service updates and events which are on, in and around the area and which buses they can use. The Twitter page promotes new schemes such as the £2 capped bus fare, provides daily service updates and long-term changes to the services in Brighton and Hove. The app also makes this information available. This enables effective communication with different user groups who might not all use the same technology to find out about bus services.[4]

It is also important to communicate with passengers during their journey. If passengers have bad travel experiences, this can generate negative publicity. It is therefore beneficial to have a variety of communication channels to engage with passengers. This could be digitally, through social media or apps, with a dedicated resource able to provide a rapid response.

trentbarton (Nottingham) provides customers with a money back guarantee which can be requested on board services rather than through customer services teams after the event.[5]

Apps are a popular and efficient way of gaining feedback and many bus operators are now using them. The apps for both Brighton and Hove buses and Reading Buses can be used to give feedback. The apps can be used with free Wi-Fi on buses enabling users to give feedback whilst still on their journey.

It is also important to get feedback on passenger experiences and understand if bus users will return. This can be done through regular bus passenger surveys or bus user groups. Such information can help LTAs and operators understand which areas to invest in and make decisions based on how services are functioning. Further information on data analysis, monitoring and evaluation is provided in Support Package 2.

Rutland Bus User Group comprises members of the public and officers from Rutland County Council's Transport Department. Four meetings are held over the course of the year, two for panel members and two which are open to members of the public. Questions are pre-submitted by Rutland residents and are answered during the meeting by representatives from local bus operators, which in turn helps to make positive changes to the local bus network. [6]

4.1.4 Key challenges

Table 4.1 summarises the key challenges and opportunities with regards to branding, marketing and communications.

Table 4.1: Key challenges and opportunities

Challenges	Opportunities
Having staff resource to focus on communications and marketing	Having a shared staff resource which can be shared amongst LTAs

[4] B&H Buses. (2023) Pay less to travel this winter. Available from: B&H Buses (@BrightonHoveBus)/Twitter

[5] Trent Barton. (2023) Our really good money back guarantee. Available from:https://www.trentbarton.co.uk/fares-and-tickets/moneybackguarantee

[6] Community Engagement | Rutland County Council

Challenges	Opportunities
Lack of awareness of certain initiatives/schemes and their benefits	Raising the profile of existing schemes and their benefits Working with groups such as Visit England to promote bus use and capture the growth in leisure travel
Multi media channels requires consistent messaging	Ensuring that communications staff work closely with operational staff

4.2 Building on the foundations

4.2.1 Developing a Communications Plan

A Communications Plan sets out how to maximise the opportunities for communications and engagement with stakeholders and individuals. A good Communications Plan should:

1. Establish objectives;
2. Understand the target audience and how stakeholders will be involved;
3. Identify key messages;
4. Have targeted outreach and planned messaging – choose the right channels;
5. Set timescales;
6. Monitor effectiveness of the bus services and systems; and
7. Have clear messaging with a call to action that is understood by consumers.

Successful Communications Plans require consistent and accurate exchanges of information between the bus provider and the consumer or stakeholder. Over time, enabling effective communications should create high levels of trust and engender a sense of 'ownership' by communities and individuals. Table 4.2 details what a Communications Plan needs to do on order to create this two-way relationship.

Table 4.2: Elements of a Communications Plan

What is required in a Communications Plan	Further Detail
Establish the objectives of the communication	The plan needs to identify why there is a need to get this information (or message) across and the desired outcomes
Identify and understand the target audience and any stakeholders involved.	The communication plan should be targeted towards specific audiences and stakeholders
Determine key information and messages	To ensure accurate and consistent information, a clear message should be created or key information gathered which can then be conveyed to the stakeholder.
Choose the platform or channel for communication	The information must be communicated with the customer or a stakeholder on a platform they are likely to use. This could also be on multiple platforms such as website, app, social media. It is important that the customer can also respond back to the provider on this platform as well. If using multiple platforms, the message or information needs to be consistent.
Set a timescale	The message or information needs to be communicated for an appropriate set amount of time to enable people to understand it and feedback on it if needed. Rapid responses help build customer confidence.
Enable feedback and monitoring	To create two-way communication, customers need to be able to communicate with the provider, with rapid responses. This can be done by asking for feedback on various platforms. These feedback options should be

What is required in a Communications Plan	Further Detail
	highlighted and marketed on the website, in the buses themselves and on social media.

A Communications Plan should firstly be targeted at current users so that they are engaged more effectively and are provided with effective information on a regular basis. Established bus users and their attributes are presented in Table 4.3.

Table 4.3: Key Established Bus Users

Key Group	Attributes
Young people	● Do not have access to independent transport ● Less likely to have a driver's license ● Likely to be environmentally conscious ● Use social media and smartphones
Employed people with little disposable income	● Likely to have fixed travel habits ● Concerned about the cost of travel
Households with limited or no car availability	● Urban areas tend to have lower car ownership ● People in single car households may also be isolated during the day if the car is being used
Older age groups	● Often reluctant to give up driving as a primary mode of transport and likely to travel less frequently ● May have concerns about safety, security and anti-social behaviour ● Less likely to access information through smartphones
Major trip attractors e.g. hospitals	● Tend to have parking pressures

Once an approach to targeting existing users has been established, a Communications Plan should target non-users, particularly those who could be attracted away from car use. The key areas of bus travel to consider in attracting new users is presented in Table 4.4.

Table 4.4: Attracting New Bus Users

Attributes of Bus Travel	Further Detail
Improvements in bus journey times	● Such as routes with priority measures or fewer bus stops
Making buses convenient	● Increasing services in urban centres where car movement is restricted
Car vs bus price	● Marketing prices in comparison to the cost of fuel and parking to show buses as a cost-effective option
Facilities	● Highlighting information about the features on the buses, such as Wi-Fi and charging points which can be used during journeys
Fares	● Promoting affordable bus fares and tickets to attract new bus users
Environment	● Promoting green buses, the CO_2 savings, and benefits of buses to incentivise bus travel.
Marketing and promotion	● A successful approach to marketing should be informed by data and statistics to deliver the type of services that the market requires and in doing so, increase trust and confidence in using buses. ● Marketing provides deeper research that influences the offer in a targeted way

Effective communication between the operator and consumer is essential:

1. There should be multiple feedback systems, e.g., on the website, social media and on an app to create two-way communication between the operator and bus user.
2. This feedback can continue to inform bus service information and enable improvements to be made if necessary.

3. Feedback schemes should also be promoted within the bus to encourage users to give feedback whilst they are using the service or shortly afterwards to ensure the information provided is accurate and relevant.
4. Responses to feedback, complaints or problems needs to be achieved using the media through which they were made and without delay to ensure that the customer feels that they have been listened to and keeps them engaged.

Engagement is key to a successful Communications Plan, whether this is between service operation managers and the communication team within a bus provider or between the communication team and customers. This can be achieved by finding out about users, their likes and dislikes and their reasons for travelling by asking users promoting feedback systems. In some instances, this has involved operational staff working alongside communications staff to ensure that there is a full understanding of how the network is working and to deal with any disruption or queries/suggestions.

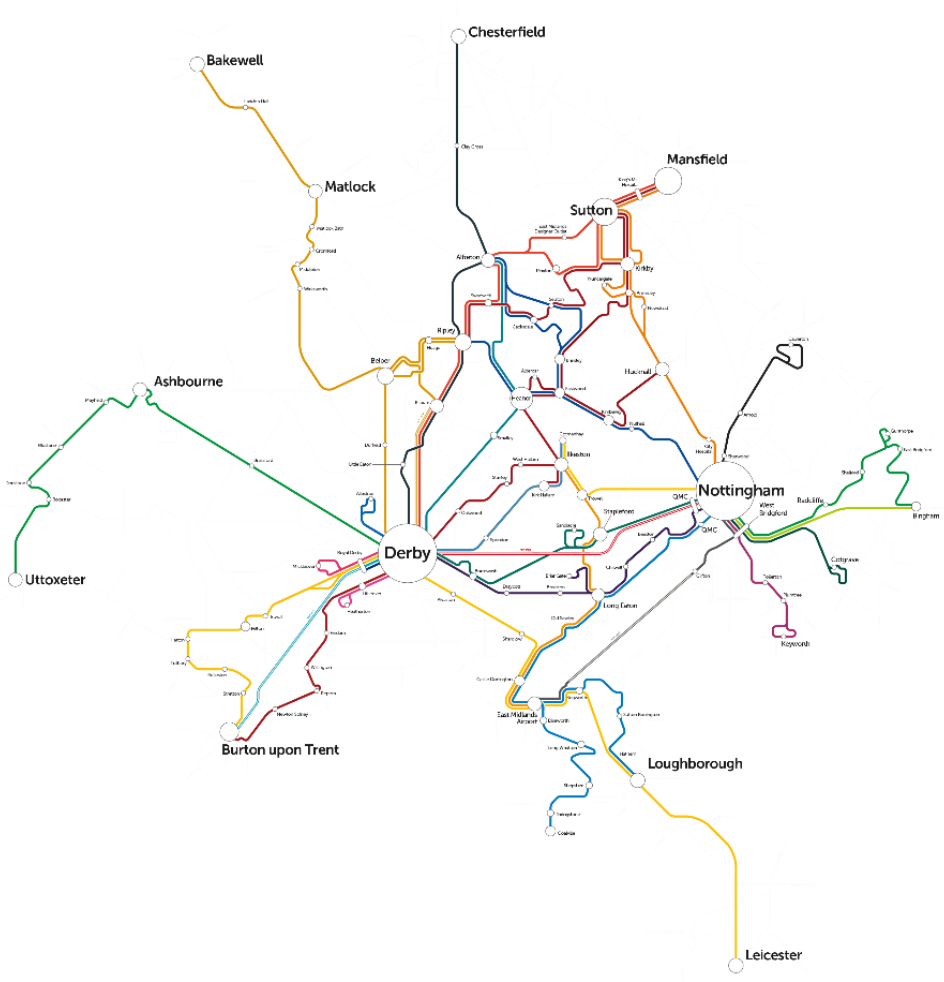
4.3 Case studies

4.3.1 Nottingham City Transport and trentbarton

Nottingham City Transport and 'trentbarton' are two of the operators in Nottingham and the surrounding region. Nottingham City Transport generally operates in the City and trentbarton operates between other key cities in the region such as Derby and Loughborough.

The trentbarton website is straightforward. All the routes are named and colour coded and are shown on the map (Figure 4.1).[7] trentbarton operations across the Midlands and key towns and cities such as Derby, Nottingham, Sutton-in-Ashfield/Mansfield and Loughborough. All of these routes are colour coded to differentiate them from one another. Customers can view this map and work out how and where they can use the service. There are then also maps available for each specific area to enable the user to work out which bus stop they might need.

Figure 4.1: Nottingham service map showing colour coded routes



trentbarton's communication plan has a unique money-back guarantee. Customers do not have to get in touch with the office-based customer service team they can just ask for their money back on the bus if they are not happy with the service. To communicate further with trentbarton, customers can get in contact via Facebook, Twitter, and email.

[7] Trent Barton. (2023) *Network map*. Available from: network map - trentbarton

At Nottingham City Transport, customers can communicate by social media as well as via online forms, however it can take 10 working days to get a reply for a complaint, compared with trentbarton's two working day reply. However, Nottingham City Transport provides a clear policy of how feedback and complaints are dealt with.

4.3.2 Brighton and Hove Buses

Brighton and Hove Buses, part of the Go Ahead Group, has developed a strong communications strategy over many years. The network is extremely successful as a result of continual effort and improvement over many years with an enviable modal share. On its web site (www.buses.co.uk) there is a whole section dedicated to customer support. This includes having a contact centre which is open seven days a week, with a five working day response.[8] The company can also be reached by email, phone, and SMS. It also has a shop in the city where customers can get help to plan their journeys and buy tickets. To improve accessibility, Brighton and Hove Buses has introduced the Helping Hand assistance card.[9] This enables customers to communicate with the bus driver if they require help getting on or off the bus. They can do this without having to explain or say anything as the card has information on it which the bus driver can read.[10] The Brighton and Hove Bus website can also be translated into several different languages.

Passenger charters can also enable effective communication. The Brighton and Hove passenger charter tells the customer what to expect from bus services in the area, and how to get in contact if they need to, as well as setting out the company's commitments to passengers.[11]

Brighton and Hove Buses collaborates with other operators in the area. Its website provides information and links to other services, for example, those operated by The Big Lemon Bus Service.[12] Brighton and Hove Buses also provide information about tourist/recreational services such as the 'breeze up to the downs' service which goes to the South Downs.[13]

Brighton and Hove Buses has several social media platforms and an app, enabling them to communicate with users digitally. This includes a Twitter, Facebook, and Instagram page. The buses app also enables users to track buses, buy tickets, and plan journeys. Users can also find information about service updates, things to do and they can provide feedback on their journeys.

Brighton and Hove Buses also provides clear information about how the money from each bus fare is spent. This enables the user to understand the service, the cost breakdown and how money is spent[14] This can help to build trust in the bus system.

Branding is also extremely important. Most of the buses are red and yellow and have Brighton and Hove Buses branding on them. [15]

[8] Brighton and Hove Buses. (2023) *Contact us*. Available from: Contact us - Brighton & Hove Buses
[9] Brighton and Hove Buses. (2023) *Helping hand assistance card*. Available from: Contact us - Brighton & Hove Buses
[10] ibid.
[11] Brighton and Hove City Council. (2021) Brighton and Hove BSIP. Available from: 7255 Brighton Hove BSIP_FINAL.pdf (brighton-hove.gov.uk)
[12] Brighton and Hove city buses (2023) *Other operators services.* Available from: Breeze up to the downs - Brighton & Hove Buses
[13] ibid.
[14] Brighton and Hove buses. (2023) Where your fare goes. Available from: Where your bus fare goes - Brighton & Hove Buses
[15] Brighton and Hove buses. (2023) *Photo file of Brighton and Hove and metrobus current fleet as at 8th January 2023*. Available from: Brighton & Hove Bus and Coach Company Limited (buses.co.uk)

However, there are also some special buses which sport different colours. For example, the new electric bus fleet has been designed with a bright blue livery and with the theme 'live and breathe', which celebrates Brighton and the buses as 'part of the fabric of the city.' [16]

The sides of these electric buses include local identity markers such as the city skyline, text saying "Be the change. Walk. Cycle. Bus", facts about the buses including their rate of carbon emissions, passenger statistics and the Brighton and Hove logo.[17] This distinctive branding makes them attractive, reinforcing the perception of Brighton and Hove as a progressive, environmentally conscious area and clearly advertising that they are a new electric fleet.

4.3.3 Key Lessons

- Communication strategies are important and can be improved with some low-cost and quick wins/
- This includes ensuring that there is clear branding (which could require rebranding) throughout all strategies, having multi-media platforms to communicate with the customers, targeting and marketing for both current and new users and having quick feedback systems to enable the customer to get in touch and get a response quickly and vice-versa.
- Ensuring that there is internal communication within the bus operator is also essential.
- Take best practice examples and look to replicate/use these ideas more widely across the Southeast, England's Economic Heartland and East Anglia.

[16] O&G. (2023) A breath of fresh air. Available from: A breath of fresh air | O&G (oandg.co.uk)
Brighton and Hove buses. (2023) *Photo file of Brighton and Hove and metrobus current fleet as at 8th January 2023*. Available from: Brighton & Hove Bus and Coach Company Limited (buses.co.uk)
[17] O&G. (2023) A breath of fresh air. Available from: A breath of fresh air | O&G (oandg.co.uk)
Brighton and Hove buses. (2023) *Photo file of Brighton and Hove and metrobus current fleet as at 8th January 2023*. Available from: Brighton & Hove Bus and Coach Company Limited (buses.co.uk)

5 Service Information

A fundamental requirement of any business selling goods or services is to make potential customers aware of the offer. There are clear benefits to creating comprehensive and reliable information in a number of formats. LTAs generally provide combined timetables and associated information on behalf of operators although in many cases the extent to which they do so has been constrained by a lack of funding. However, operators may contribute towards this cost if they no longer produce their own publications.

For further information on providing service information, please refer to Support Package 1: Fares and ticketing, Support Package 2: Data analysis, monitoring, and evaluation, and Support Package 10: Marketing.

5.1 Getting the foundations right

5.1.1 Traditional formats

Having timetables at stops is the basic medium for communicating service information. It provides reassurance to passengers, but only if they can read it, understand it, and rely on it.

Bus timetables are often complicated because there can be many variations by time of day and day of week, a message that is difficult to convey simply. When planning a journey, a consumer wants to know what is available, how long it will take and how much it will cost; there is supplementary information about service start and finish times, frequency and so on but the high-level information needs to be identifiable quickly and easily. This is all about instilling confidence in bus use so experiencing the actual journey needs to match up to the expectation generated by the information.

Information about bus services needs to extend much further than printed timetables at bus stops and an online presence. Such information can be difficult to interpret and may not reflect real-time journey information, thereby discouraging potential passengers.

Stagecoach, Kent

In Kent, Stagecoach has worked with Crosstown to generate new timetables which are clear and easy to understand. As shown, the timetable includes simple line route diagrams which clearly show the travel time from the current stop to key destinations.[18]

Online experiences can be off-putting. Many operators take the simplest approach of uploading PDF versions of their printed timetables or journey planners that assume that potential users know where they are going and how the bus service works. This is an opportunity missed because the market could be much wider; new users do not necessarily know which bus they need to take. These online timetables need to be easy to access and easy to read. Maps are essential, linked to timetables that can be understood with the ability to dig deeper for more detail if needed. Figure 5.1 shows a transport map of Portsmouth, which is easy to understand, includes multiple transport modes and has both bus routes and bus stops labelled.

[18] Externiture. (2023) *Stagecoach East Bus stop*. Available from: Stagecoach East Bus Stop Timetables (externiture.com)

Figure 5.1: Portsmouth transport map.[19]

Interactive mapping can help people find out about services – routes, departure times, journey/arrival times and fares. By using an interactive map, customers can see the range of routes and services offered. Modern web sites therefore present an opportunity to attract and retain passengers. The cost to develop and maintain a website depends on the level of information provided. Beyond the basics, the cost will increase e.g. large volumes of information and navigation and interactive sites.

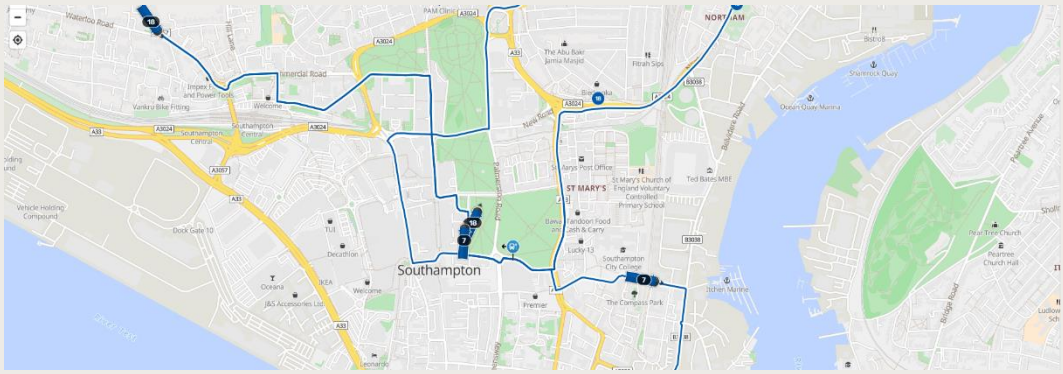
[19] Portsmouth city council. (2021) *Portsmouth public transport information map*. Available from: Portsmouth Public Transport Information Map

Oxford City Centre

The Oxford Bus company provides a city centre map. It shows all the bus stops and colour coded routes, as well as some of the key destinations to help the user to identify the route and stop they need. There is also a wider citymap which is also colour coded. The timetables for these specific routes can be found on the website. Each route timetable also has an interactive map.[20]

Bluestar Buses, Southampton

Bluestar Buses in Southampton offers an interactive live bus tracker on their website as shown in the screenshot below. Users can click on the buses to see where the bus is, which route it is on and can buy tickets online for their chosen bus. The website also has a bus stop map which enables users to click on a stop and find out which buses stop there.[21]



5.1.2 New media

The range of potential media channels to disseminate bus information has grown with the advent of digital communications. This enables a bi-directional exchange of information between service providers and consumers. In one direction it enables providers to send information to users and in the other, it allows immediate contact by the consumer with the operator. This two-way dialogue is a useful means of building customer relationships, the foundation of good business practice. It can also be productive, for example allowing customers to alert operators about problems, understanding how they feel about their journeys and enabling rapid responses.

Various apps are available from operators which can include bus location information and an indication of how full the bus will be, depending on what information is available from operators. Users can generally buy tickets, check timetables, live track buses and see how many people are on it. Usually however, each operator has a separate app so that in locations where there are multiple operators, the user has a major task to find out what they need. Some examples of popular bus apps include Bus Checker which enables users to plan their journeys, access real time information and buy mobile tickets for buses across the country and across multiple operators.[22] Other apps include individual operators apps such as the First Bus app which can be used across the country wherever First Bus operates.[23] On this app, the customer can search for locations, bus stops, check real time information such as the bus capacity, and buy 'mobile' tickets which can be shown on their mobile devices. [24]

[20] Oxford bus company. (2023) *Oxford City centre bus map*. Available from: OBC Transport Map A2 Poster - January 2023 V2_0.pdf (passenger-website.com)

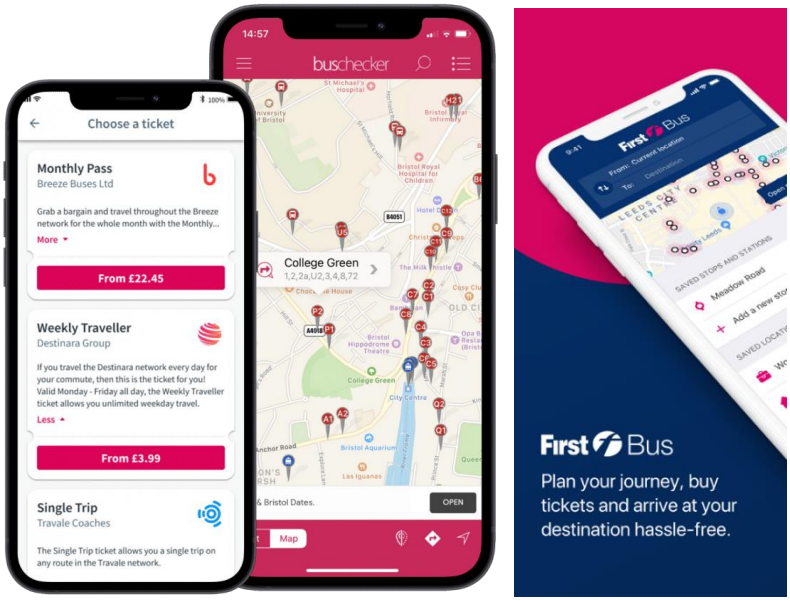
[21] Bluestar buses. (2023) *Explore*. Available from: Track Vehicles - Bluestar (bluestarbus.co.uk)

[22] Bus Checker app. (2023) Live bus countdown and live bus ticketing. Available from: Live Bus Countdown & Smarter Ticketing • Bus Checker

[23] First Bus. (2023) *First bus app.* Available from: First Bus on the App Store (apple.com)

[24] First Bus. (2023) *First bus app.* Available from: First Bus on the App Store (apple.com)

Figure 5.2: Bus Checker app and First bus app. [25]



5.1.3 Legibility

There are two aspects to legibility regarding bus service information. The first is the ability of the customer to comprehend the information presented and the second is the extent to which it can be literally read and understood.

There are some simple wins in addressing each of these. For example, a poorly lit timetable attached to a bus stop in standard typeface is unhelpful in the dark or for someone with a visual impairment. A summary timetable can occupy the same space but with far greater legibility to convey the basics.

While online users can make the display larger, that does not compensate for the fact that information could be hard to find; simple navigation around any web site, however large, is vital. In some instances, users have to dig quite deeply to get to their starting point e.g. by selecting a town or area, then identifying a route they might want before they get to the detail they require. As a result, sometimes only the most determined user extracts the information they require regarding timetables. Passengers may also wish to know about fares which can be difficult to find. Therefore, customers need to be presented with a clear, simple website structure with sections or tabs to direct them exactly to the information they need.

Reassessing information from the consumers' point of view can bring many benefits. Users could be involved in the design and layout of web sites and apps which builds customer relationships and is likely to result in better products. Given that web sites and apps are maintained, and that roadside publicity is in place, then making it much better is a low cost means of developing the customer base.

[25] Bus Checker App. (2021) *Urban things adds mobile ticketing function to its bus checker app.* Available from: UrbanThings adds mobile ticketing function to its Bus Checker app - (route-one.net) and First Bus. (2023) *First bus app.* Available from: First Bus on the App Store (apple.com)

Southampton case study

The Unilink network of public services contracted by the University of Southampton in 2001 sought students' views on how timetable information should be presented which resulted in online maps showing times from every stop.[26]

5.1.4 Key challenges

Table 5.1 summarises the key challenges and opportunities associated with providing service information. Between them, LTAs and operators should be overseeing and producing service information.

Table 5.1: Key Challenges and Opportunities

Key Challenges	Key Opportunities
There is no obligation on LTAs to provide service information and it is often an area vulnerable to budget restrictions.	Better enforcement of existing agreements that are in place with bus operators e.g. requirements to have a bus stop flag and timetable
The availability of staff in LTAs to focus on service information and ensure it is continually updated	Adopting a regional approach for sharing staff resources across several LTAs
Unlike other modes such as rail, there are numerous bus services and operators in operation which makes it more difficult and complicated to provide multi-media information	Learn from what other transport sectors have done well and has worked e.g. rail, air. Consider promoting third party services that aggregate bus service information, e.g. phone apps
Regularly updating timetables can be a lot of work for small operators and LTAs	Better utilising existing material and raising the profile of existing information available. Restricting changes to a few dates per year.
Operators like a degree of flexibility with regard to updating timetable information to respond to market changes or new developments.	A national position from DfT, such as imposing conditions on operators to meet minimum standards of publicity and service information. LTAs or STBs could adopt regional-level standards and pursue these through EPs.

5.2 How to build on your foundations

To improve service information, a strong communications plan is necessary. There are also some specific considerations regarding the platforms which provide service information, as detailed in Table 5.2.

Table 5.2: Action List for providing service information

Media type	Action List
Traditional formats at bus stops	• Ensure that physical timetables are up to date and present information clearly • Ensure timetables are well lit and legible in different lighting conditions • Ensure timtables have distance and timing measurements to all the stops on the route, ideally on a line route programme

[26] Business as usual for bus travel in Southampton - Unilink Buses

Media type	Action List
Website/online service information	• Layout the online website in a practical, efficient manner with different sections for tickets, maps and routes, service information/things to do. • Obtain customer feedback to find out how they are using the website and whether they find it easy to use/useful • Include links to other operators timetables to make it simple for the customer to go between (as done by Brighton & Hove Buses). • Provide different kinds of maps including live tracker and colour coded route maps • Provide real time information online and at bus stops • Provide information about things to do in the area and associated bus routes which can be used in conjunction with these events or activities.
New media	• Communicate and provide service information on social media to build relationships with the customers, and to quickly inform them of service updates. • Ensure consistency with information across media types including the physical timetables, apps, website and social media.
In-bus information and technology	• Consider how information is provided in buses. This could include having route diagrams within the buses and the times between stops. • Ensure there are stop announcements. • Include key information on the outside of buses makes it visible to both users and non-users.

5.3 Case studies

5.3.1 Reading Buses

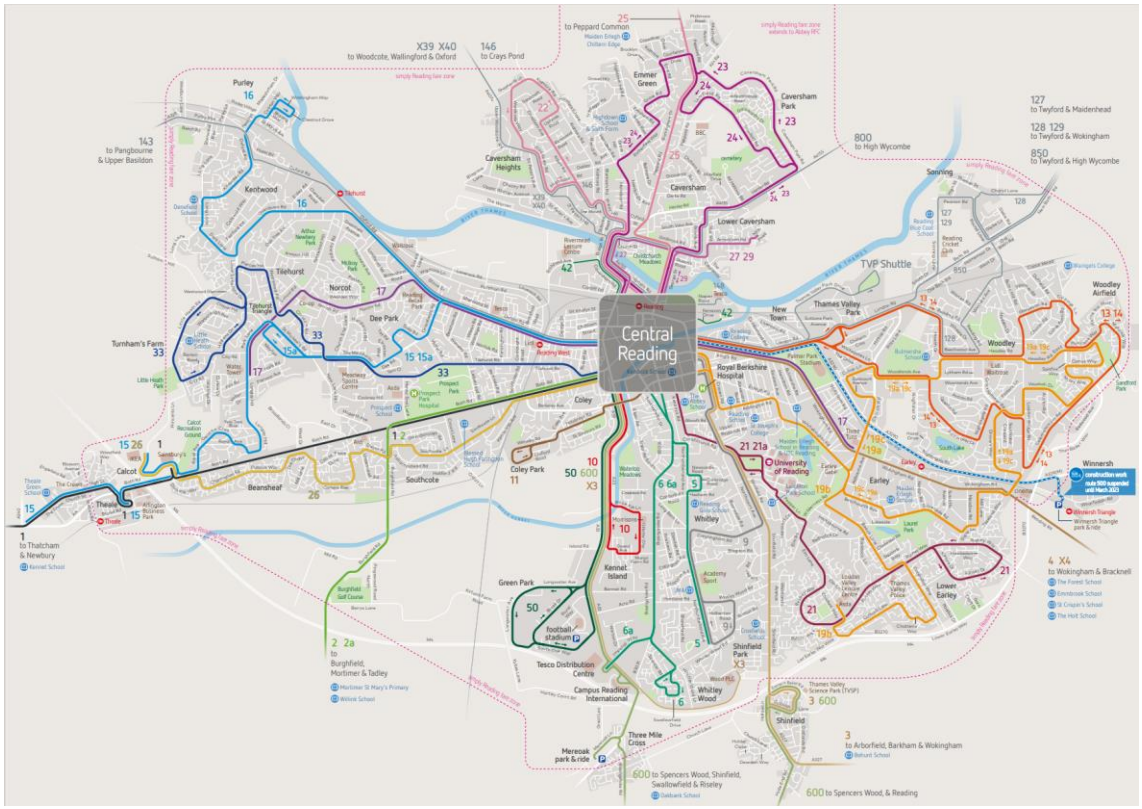
Reading Buses operates over 40 services in and around Reading, Newbury and beyond. The fleet comprises 159 buses, each of which is colour coded according to its route.[27] After a period of stagnation and declining demand, a review of the network was undertaken, including the services available and fare levels.

Bus fit-out and network image was re-evaluated and services re-launched, generating significant growth in the number of users. These routes and services are made clear on the network map which is available on the website as a downloadable PDF. It displays all routes and each route is colour coded. [28]

A town centre map is also provided for users travelling within this central area, and unlike the larger area map, this is not colour coded but uses a letter code which represents the bus stops, and then users can see which routes stop here.[29] Users can also find the timetable for each service on the routes and times tab.

[27] Reading Buses. (2023) *About Reading Buses*. Available from: About Reading Buses - Reading Buses (reading-buses.co.uk)
[28] Reading Buses. (2022) *Network map*. Available from: Reading network map MASTER sep22 (reading-buses.co.uk)
[29] Reading Buses. (2023) Where to catch your bus in Central Reading. Available from: untitled (reading-buses.co.uk)

Figure 5.3: Reading Buses service map showing colour coded routes.



Reading Buses provides clear information on the location of buses, with its interactive live map. Users can type in a location and see which bus services are currently running and close to their location. Users are able to easily see if their journey will be affected by any disruption using the service updates date and time search. Users can also plan their journeys using the map with the destination, location, and time tool. Information on things to do in the area such as the seasonal 'Winter Wonderland' event is also provided, and the associated bus services which stop at, or close by to the event. This provides the users with a clear alternative to the car when considering how to get to leisure activities.[30]

Ticket information for Reading Buses is available online. Tickets can be bought on the website, on the bus or on the Reading Bus app. Ticket information is split down into a range of areas. Within these areas the available tickets include adult single fares, time limited tickets (60-minute unlimited fares), period tickets (1 day, 5-day, 7-day, 30-day, 90-day, and annual tickets), savers tickets, Boost (under 18s) and group tickets.[31] There is information on other types of tickets such as football fares, concessions and park and ride tickets. Reading Buses also promotes its smartcard which can be topped up and contactless payment systems are available on its buses.

On the app it is possible to buy mobile tickets, view timetables, plan a journey with locations and destinations, live buses and real time departures and service updates. The app also enables users to give feedback to Reading Buses. Reading Buses also has a social media presence including a Twitter and Facebook page which they use to communicate with customers, provide

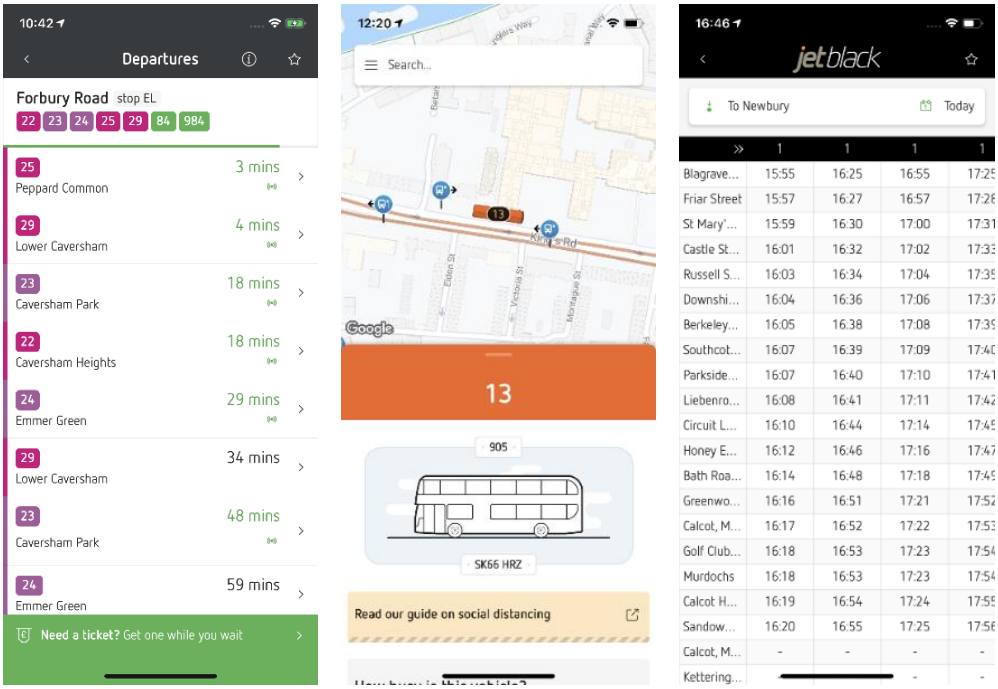
[30] Reading Buses. (2022) *Winter wonderland*. Available from: Winter Wonderland - Reading Buses (reading-buses.co.uk)

[31] Reading Buses. (2023) *Buy tickets online and travel instantly*. Available from: Fares and tickets - Reading Buses (reading-buses.co.uk)

service updates, and post information about news and changes such as the new £2 single fare.[32]

The Reading Bus App features are shown in Figure 5.4 below.[33]

Figure 5.4: Screenshot examples of the Reading Bus App interface, showing live departures, bus stop map selection, and full route timetable.



5.3.2 Bluestar Buses

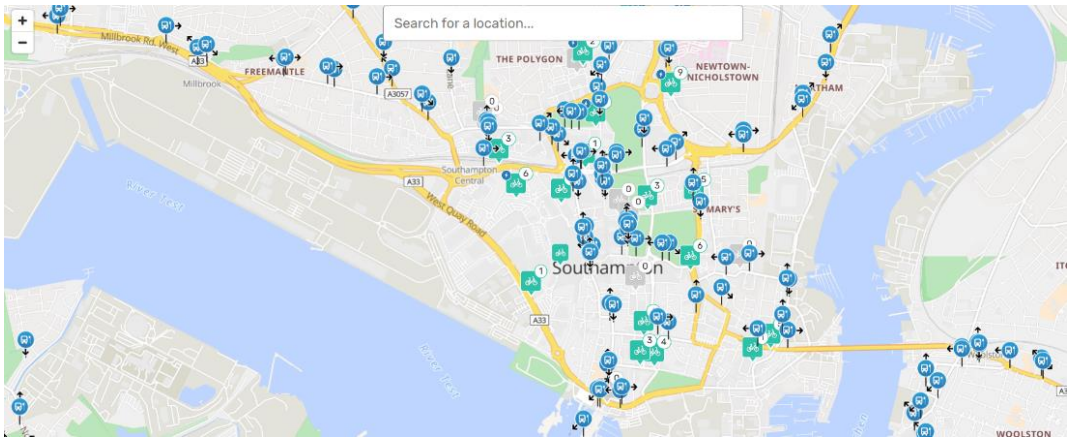
Bluestar buses, part of Go South Coast, has a live tracking system which can be accessed via their website or on their mobile app. This enables users to choose a location, or allow location services to locate them, and from there select a bus stop to see what buses are departing from there or are close by. There is also a YouTube video of how to use the live tracker which provides clear instructions for new users who might not find the concept or interface intuitive.[34]

[32] Reading Buses (2022) *Reading Buses*. Available from: Reading Buses (@reading_buses)/Twitter.

[33] Reading buses. (2023) Download our app. Available from: Download our app - Reading Buses (reading-buses.co.uk)

[34] Bluestar. (2022) *Track your bus in live time!* Available from: https://youtu.be/0NyF-3SjiU0

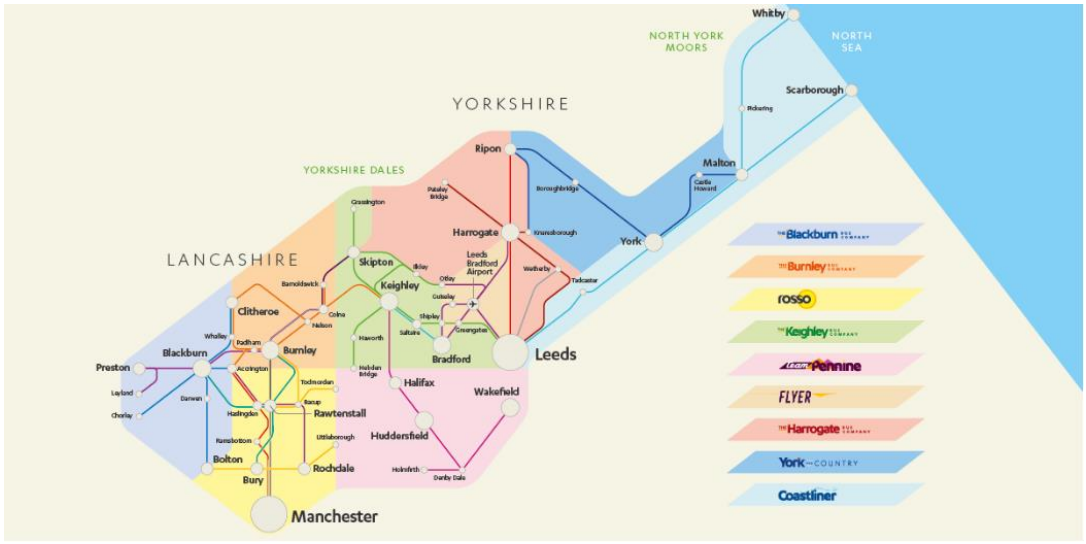
Figure 5.5: Screenshot of the Bluestar Buses live tracking map.



5.3.3 Transdev (north of England)

Transdev has 10 bases across the north of England and nine routes across Yorkshire and Lancashire. [35] Transdev provides a clear map of the routes in the area which are all colour coded and named with a strong local emphasis. For example, the Harrogate bus company route is red and covers the region between Leeds, Harrogate, and Ripon. [36]

Figure 5.6: Coverage map for different Transdev services in the north of England.



Transdev also has a live bus tracking system where users can type in a location and see which bus routes serve which stops in the area. Transdev has highlighted the importance of customer information on its website and use 'up-to-the-minute' technology to keep users informed.[37] 70% of the frontline fleet has next stop information, and this has become a standard for new or retrofitted buses since 2016.[38] It is also developing and implementing board displays which will be able to show the expected time of arrival at each stop as well as the interchange and

[35] Transdev. (2021) *Welcome to Transdev across the north*. Available from: Welcome to Transdev across the North - Transdev (transdevbus.co.uk)
[36] Transdev. (2021) *Welcome to Transdev across the north*. Available from: Welcome to Transdev across the North - Transdev (transdevbus.co.uk)
[37] Transdev. (2021) Technology and innovation. Available from:Technology and innovation - Transdev (transdevbus.co.uk)
[38] Transdev. (2021) Technology and innovation. Available from:Technology and innovation - Transdev (transdevbus.co.uk)

connections at these stops, as shown in Figure 5.7. Two of the services show live rail information and connections as well.[39] Many of the buses within the fleet have countdown timers on the front outside screens of the bus as well as inside.

Figure 5.7: On-board arrival and travel information for Transdev buses in the north of England.

Transdev recently introduced a fleet of electric buses which have been designed to feature 'customer friendly' information systems. [40] This includes the next stop screen and announcements, illuminated logo to ensure the user can clearly see the bus route name and number, and free Wi-Fi.[41] Across the network, there was a 10% increase in customers following the introduction of electric buses. These buses were also used in some joint partnership trials which gave free travel for users on Sundays. The trial resulted in a 70% increase in patronage. [42][43]

To develop 'The 36' bus service, a rebranded version of route 36 between Rippon, Harrogate and Leeds, Transdev used customer information, service feedback and a customer research approach to create the route and develop the new bus fleet. This service has seen an increase of 21% in patronage in the five years since the service was relaunched in 2016. [44]

Unlike other websites, Transdev has a section on fares and information which updates the user about the tickets, the freedom pass, customer feedback, the commuter club scheme and things to do and see in the area.

Transdev has a mobile app which enables the user to track buses, buy tickets and check the capacity of the bus.[45] It has real time information and location services. Bus stops also have real time information and show bus capacity. This is the case in even some more rural locations but sometimes these stops have no physical timetable.

[39] Transdev. (2021) Technology and innovation. Available from: Technology and innovation - Transdev (transdevbus.co.uk)
[40] Transdev. (2021) Harrogate Electrics. Available from: Harrogate Electrics - Transdev (transdevbus.co.uk)
[41] Transdev. (2021) Harrogate Electrics. Available from: Harrogate Electrics - Transdev (transdevbus.co.uk)
[42] Transdev. (2021) Harrogate Electrics. Available from: Harrogate Electrics - Transdev (transdevbus.co.uk)
[43] Transdev. (2021) Harrogate Electrics. Available from: Harrogate Electrics - Transdev (transdevbus.co.uk)
[44] Transdev. (2021) *The 36: Riding, Redefined*. Available from: The 36: Riding, Redefined - Transdev (transdevbus.co.uk)
[45] Transdev. (2023). *Travel unravelled! Download the Transdev Go app.* Available from: Travel unravelled! Download the Transdev Go app - Transdev (transdevbus.co.uk)

5.3.4 Portsmouth

Portsmouth City Council provides information on its website about multiple transport modes and this information is collated on its Portsmouth public transport information map which includes bus services, coastal ferry services, rail services, coach services and park and ride. The bus information includes all operators who work across the city. The document also includes a map of the city which shows the location of all these transport options including bus stops and bus routes.[46] This kind of multi-operator, multi-mode document could be created for other cities to enable users to transfer between transport modes more efficiently.

Portsmouth also provides tourists and locals with transport information for specific attractions around the city in the summer season. This includes information about how to get to the Isle of Wight, the Southsea waterfront and food festival. This is available as an online PDF and in leaflet form, and is shown in Figure 5.8 below.[47]

[46] Portsmouth city council. (2022) Portsmouth Public transport information map. Available from: Portsmouth Public Transport Information Map

[47] Solent from first bus. (2022) *A handy guide for getting around Portsmouth*. Available from: Portsmouth Summer_tourism_leaflet - 24pp DL Leaflet - Summer 22 - WEB_0.pdf (firstbus.co.uk)

Figure 5.8: Portsmouth public transport information map.

5.3.5 Key lessons

- Timetable and service information should ideally be provided in the following formats:
  - Well lit, physical timetables and relevant service information at all bus stops
  - The operator's website should include a clear timetable, network map (i.e. schematic) with the bus routes (colour coding is useful for this), live tracker map, information about the services provided and a map (geographically accurate) for individual routes.
  - App with timetables, live tracking, maps, mobile tickets, bus capacity and bus feedback systems. Consider approaching app developers who develop service information apps and make timetable updates and real-time information available to them.
  - Social media: service updates can be provided quickly to the public on these platforms and enable rapid communication between the operator and the customer.
- Provision of in-bus service information and announcements can improve the journey, increase patronage and can be a low-cost quick win.
- Clear information is key to building trust in a bus service, and to understand if this information is clear, customer feedback or participation can be used to understand what needs to be improved upon.
- Best practice examples are useful to see how maps and service information can be presented effectively.

6 Bus stop accessibility and quality auditing

Bus stops, whether they are a simple pole, a shelter or interchange hub are the gateway to the bus network. Bus stops are the backbone of a good bus service and are just as important as a good quality railway station is to delivering a successful rail service that meets customer expectations. The importance of the Bus Stop in a customer's journey however, is often forgotten. Considerations in terms of both placement and scale of provision need to be appropriate for the area and community the bus stop services. While every bus stop is different in terms of requirements and expectations, a standard of accessibility and amenities should be provided as far as possible.

For further information on bus stop accessibility, please refer to Support Package 5: Bus infrastructure guidance.

6.1 Getting the foundations right

Getting the basics of bus stops right is one of the most important elements of a successful bus service offer in a local area. Different location types (rural, suburban, urban, transport hub, cultural hub, etc.) will have different levels of demand, different passenger typologies, different flow patterns, and will thus require different infrastructure and amenities.

The CIHT guide to Buses in Urban Developments lays out three main elements that need to be considered to create a bus stop:[48]

1. **Access to the bus stop (walking/wheeling/cycling);**
2. **Bus stop surroundings/vicinity/public realm; and**
3. **Actual bus stop design.**

6.1.1 Developing a bus stop improvement strategy

Bus services around the UK, whether in urban or rural areas, should be able to be used by all passengers, and there should be a minimum requirement of quality that LTAs should strive towards. While it is not feasible for a local authority to quickly ensure that all of their existing bus stops, particularly in rural areas, can meet even these minimum requirements, accessibility can be prioritised.

For instance, bus stops serving essential locations such as town centres, hospitals, leisure parks, wider transport hubs, etc. which are not accessible, or do not have clear routes of access, can be identified and improved. Furthermore, bus stops where the existing amenities and design is furthest away from that specified according to the bus stop audit template could be put forward for urgent attention. This would allow a clear prioritisation of which bus stops in an area are in the greatest need of improvement and should be the focus for LTAs.

A good starting point for identifying relevant bus stop improvements is considering the situation and context of each bus stop. There should be good accessibility to bus stops for all user groups. This includes adequate crossings near bus stops, well-lit pedestrian routes, cycle route connections and secure cycle parking where applicable. These access requirements extend to the bus stops themselves, where there needs to be a minimum level of amenity and

[48] CIHT, *Buses in Urban Developments,* accessed at https://www.ciht.org.uk/media/4459/buses_ua_tp_full_version_v5.pdf

infrastructure to guarantee not only accessibility to all but also a standard level of comfort for passengers.

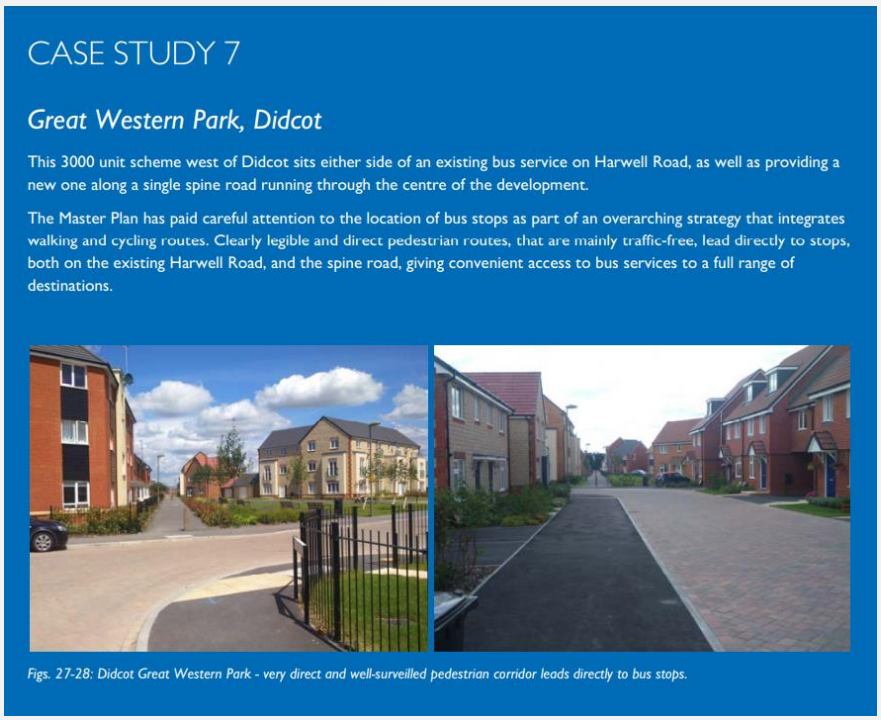
There should also be good interconnectivity between bus stops and other transport modes, town centres and key destinations. The walking distances to and from bus stops should be minimised, both at the origin and destination ends of major flows.

6.1.2 Bus stop location planning

Bus stop spacing and location is always going to be a balance of competing goals. With stops placed closer together, the number of potential passengers served within a reasonable walking distance that would be accessible to most users will be maximised. Closer stop spacing also ensures that both the origin and destination points of a passenger journey can be located near to their origin and destination points, which is a key driver of satisfaction in bus journeys. However, spacing stops further apart will lead to faster and more reliable bus journeys, which promote higher patronage and passenger satisfaction.

Stagecoach has produced a guidance document aiming to inform the design of bus services through new residential developments. That guidance is valuable especially for LTAs where there is a focus on building new housing. Whereas existing bus stops were stitched into an urban realm that was already built, with a new residential area the bus services and stop locations can be sited hand in hand with the expected development patterns.

Figure 6.1: Best Practice example from Stagecoach's guide on "Bus Services and New Residential Developments"[49]



Recommendations for siting and spacing of bus stops is also provided within the Stagecoach guidance to ensure good accessibility. Ideally the average dwelling should be within 400 metres (approximately 5 minutes' walk) of the closest bus stop. As a general rule, stop spacing is specified as 280-320 metres in this guidance, with emphasis on placement near important nodes.

For council areas and operators which cannot justify the improvement and upkeep of multiple closely spaced stops, targeted improvements at a smaller number of high priority bus stops is appropriate. These stops could have their accessibility improved, both in terms of accessible routes to the bus stop, as well as for the accessibility levels at the bus stop itself.

6.1.3 Bus stop accessibility planning

The emphasis here is on accessibility *of* bus stops rather than accessibility *to* them. Key passenger groups that need to be considered in specifying and upgrading bus stops include wheelchair users, people with limited mobility, blind or visually impaired people, people with learning difficulties, elderly people and wider considerations including buggies/prams, shopping trolleys, and others. It is important to remember that an accessibility improvement to any passenger will result in a net benefit to all passengers.

[49] https://www.stagecoachgroup.com/~/media/Files/S/Stagecoach-Group/Attachments/pdf/bus-services-and-new-residential-developments.pdf

Minimum standards of accessibility can be achieved by providing: [50]

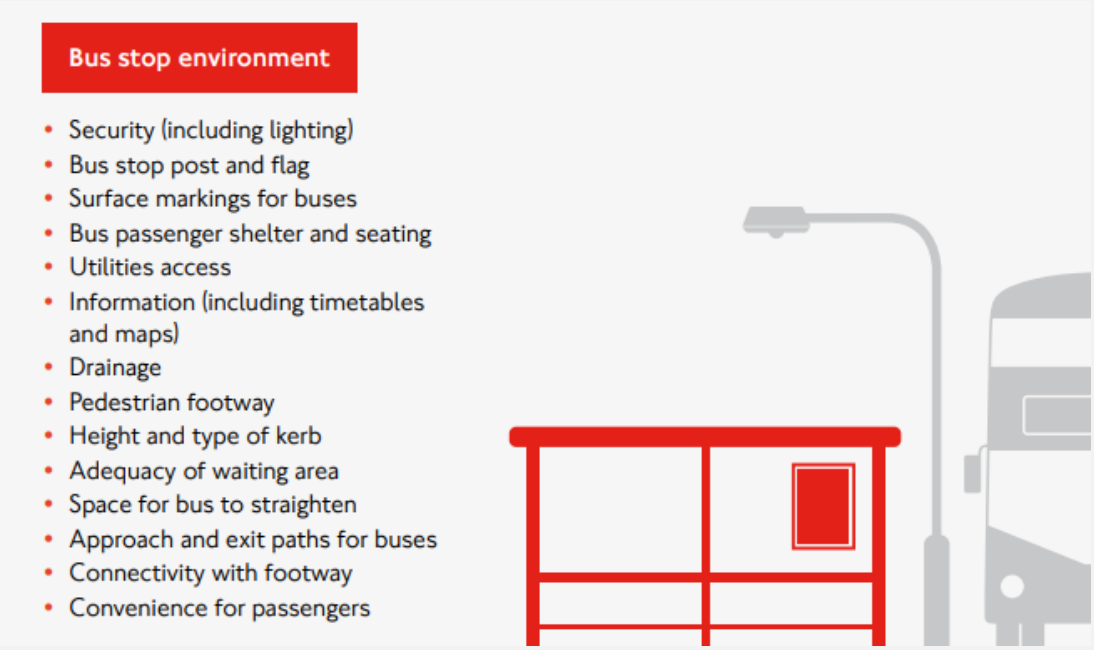
- Road space sufficient for the bus to pull in parallel to the footway;
- Kerb height at the optimal level for a bus ramp to be deployed;
- Available clear space on the pavement for the manoeuvrability of a wheelchair; and
- Continuous and accessible access routes to the bus stop from trip origins and destinations.

Figure 6.2: Inaccessible rural bus stop in Soudley, Gloucestershire. The lack of pavement makes level boarding impossible, and with no level clear access routes, limits the effectiveness of the bus stop.[51]

[50] Accessible bus stop design guidance (tfl.gov.uk)
[51] Transport integration separates rural idyll from remote isolation | ITS International

Transport for London has produced a set of guidelines for accessible bus stop design. This guidance focuses on the design of universally accessible bus stops, the details of which can be applied in any local area and are useful in identifying the most important areas to consider to create a quality bus stop environment, as shown in Figure 6.3 below.

Figure 6.3: TfL's summary of the essential elements of the bus stop environment that must be considered to ensure universal accessibility for passengers[52]



General considerations for bus stop placement are also laid out, against which existing and future bus stops in local areas can be compared:

- Clear visibility between driver and passengers;
- Located as close as possible to key facilities;
- Located near main road junctions with consideration for traffic flow requirements;
- Minimises walking distance between other interchange stops;
- Allows space for a bus shelter;
- Near to existing or future pedestrian crossings; and
- Not close to areas likely to be obstructed by parking or illegal loading.

The lists of characteristics identified by TfL could easily be combined to represent a comprehensive list of bus stop quality indicators. With a common set of indicators developed, bus stops on any geographic scale can be readily compared, ranked, and analysed against passenger numbers and other data. This would allow a 'Healthy Streets' style analysis to create a bus stop hierarchy to work towards.

6.1.4 Key challenges

Table 6.1 summarises the key challenges and opportunities regarding providing and maintaining accessibility to bus stops.

[52] Accessible bus stop design guidance (tfl.gov.uk)

Table 6.1: Key Challenges and Opportunities for Bus Stop Accessibility

Key Challenges	Key Opportunities
In some areas there are land restrictions which impact the quality of pedestrian footways to bus stops	Accessibility improvements to bus stops benefit all passengers, not just those targeted by the improvement
Especially in rural areas, there are likely no footways at or near the bus stops	At a minimum, level boarding locations could be provided at selected rural bus stops, becoming accessible hub stops
Improving the accessibility at all bus stops within an area could be prohibitively expensive	Improving the accessibility and visibility of bus services, especially in rural areas, could help raise patronage
Not all dwellings and key destinations will be near to a bus stop	Ensuring that bus stops are placed as close as possible to key destinations will make the bus a more attractive choice
Bus stop placement and spacing must balance competing goals and can never perfectly serve every potential passenger	Review bus stop locations

6.2 How to build on the foundations

Crucially, even the best designed bus stop will not be as successful and effective as it could be if the wider public realm around the bus stop and the access routes from residences/trip generators are not considered in parallel. With so many bus stops and areas to consider, it can be difficult to approach the issue with any consistency. There are relatively few guidance documents and design templates to aid in the successful linking of these three elements to create good quality bus stops. Those which do exist, and which can offer good further reference, are laid out below:

- **Transport for London, Accessible Bus Stop Design Guidance (2017),** available at https://content.tfl.gov.uk/bus-stop-design-guidance.pdf
- **Stagecoach, Bus Services & New Residential Developments (2017),** available at https://www.stagecoachgroup.com/~/media/Files/S/Stagecoach-Group/Attachments/pdf/bus-services-and-new-residential-developments.pdf
- **Greater Manchester Passenger Transport Executive, Design Guidelines for Bus Stops in Greater Manchester (2007),** available at https://docplayer.net/38883923-Design-guidelines-for-bus-stops-in-greater-manchester.html
- **Gloucestershire County Council, Bus Stop Specifications (2010), available** at https://www.gloucestershire.gov.uk/media/2082481/appendix-e-bus-stop-design-specification.pdf

None of the above are directly prescriptive and offer either suggestions, minimum requirements, or material choice considerations, but do not allow authorities to identify the most appropriate areas of improvements, or to prioritise certain bus stops. Creating a standard guidance document/audit template to study and prescribe improvements to bus stops would be hugely beneficial for LTAs and operators.

6.2.1 Bus Stop Audits

The goal should be to move towards a standardisation of bus stop design and specification according to a range of indicators which can be measured quantitatively and qualitatively, to categorise bus stops into a prescribed set of typologies, which will be linked to a minimum standard of design.

Possible indicators which could be used to audit bus stops are outlined in Table 6.2.

Table 6.2: Indicators for bus stop audit templates. [53]

Indicator	Description	Checklist
Security	Lighting and shelter at a bus stop can help users feel more secure at a bus stop. A fear of crime and personal safety at bus stops is often a barrier to bus use.	Does the bus stop have street lighting which is spread evenly and ideally white light?
Bus stops post and flag	Layout of the passenger waiting area will be determined by the position of the post and flag as it shows passengers where they can wait.	Is the bus stop flag clear and in an appropriate location that enables users to see it and wait around it?
Surface marking for buses	The surface marking will be influenced by the location of the bus stop flag. The bus cage will be marked out and will need to allow buses to approach the stop, straighten up to the kerb, stop, and leave the stop.	Are bus cages marked clearly with the appropriate colours and lines for the area and road type?
Bus passenger shelter and seating	Good quality bus shelters protect passengers from the weather and can help to make them feel safe. Seating is important for mobility impaired passengers.	Is the bus shelter accessible for a variety of users, provide adequate seating and shelter from extreme weather?
Utilities access	Utilities can impact the position of the bus stop, shelter, and flag. Access to these utilities is important.	Does the bus stop have any utilities close by and are these still accessible?
Information	Information points and timetables reassure the user that the service they need is served by this bus stop and informs users about the destinations and services offered	Is service information up to date, clear and well lit?
Drainage	A lack of effective drainage can negatively impact a bus stop and the passengers by causing ponding.	Is there good drainage at the bus stops and are footways level to ensure that footways can drain? Can SUDs be implemented or green infrastructure be added to absorb run-off.
Pedestrian Footway	Locations close to pedestrian crossing facilities are convenient for passengers walking to reach the bus stop. Pedestrians need to be able to walk around the bus stop on a footpath safely even if they are not using the bus stop.	Have obstacles been removed from the footway and can bus users access the bus stop from the footway, and non-users still use the footway?
Height and type of kerb	Buses need to be able to use a ramp and for this require a kerb with 12% gradient onto a kerb range of 100mm-140mm	Does the kerb height and gradient match the specifications and if not, can the kerbs be adjusted?
Adequacy of waiting area	Boarding and alighting areas can be useful for waiting areas to ensure that users can get on and off the bus easily.	Does the waiting area have enough space to support the infrastructure, and pedestrian movement?
Space for bus to straighten	Buses need to have space to straighten up to the kerb. The straightening distance will vary depending on the bus cage length. For a bus cage of 23.0m the straightening distance will need to be 14.0m.	Does the bus cage provide adequate space for the bus to straighten up to the kerb?
Approach and exit paths for buses	Buses need an entry taper and exit taper. These will vary depending on the bus cage size, the location of the flag, the capacity and type of road.	Does the bus stop have an appropriate approach and exit path based on its design?
Convenience for passengers	The convenience and comfort of the waiting environment need to be considered. Bus stop information can help to make bus stops more convenient, and a spacious waiting area, and the location of the bus stop can improve the convenience of the stop.	Has the convenience and comfort of the passenger been considered, and have measures been taken to improve the stop if necessary?

[53] TFL. (2017) Accessible bus stop design guidance. Available from: Accessible bus stop design guidance (tfl.gov.uk)

Indicator	Description	Checklist
Bus stop accessibility	Accessibility needs to be considered for the whole journey. Removing obstacles on the footpaths can improve accessibility. The kerb height needs to be considered and should be less than 100mm and the bus stop itself needs to be free from impediments. Accessibility for those cycling, wheeling, and changing modes should be considered as well.	The layout of the stop will significantly impact the accessibility for passengers. Has the stop followed the design guidance for accessible bus stops?
Stop capacity	This is a function of the bus length, service frequency, number of routes and dwell time. A 37m bus stop cage can support 15 buses per hour. A smaller cage of 25m can support a bus stop with less frequent bus services	Has the bus stop got the correct cage size for its capacity?
Connections to other modes	It is important that bus stops are close by and connected to other modes of transport such as rail, inter-urban buses, and micro-mobility to encourage sustainable journeys.	Does the bus stop support other transport modes or is it located near another mode and is there wayfinding to this?
Passenger numbers	It is important to understand how many passengers might use the bus stop and how many it can support.	Is there enough space and seating for the number of passengers using this stop?
Social importance of bus stop	Bus stops provide a community with the opportunity to travel, to see people, go shopping, carry out errands. They can therefore be placed in locations which are close to these services as well as in residential areas to enable a variety of journey types.	Does the bus stop support a community or provide access to services and facilities?
Type of road on which the stop is situated	The type of road will affect the bus stop including the amount of space which is available for the stop, who uses it and how often.	Is the bus stop suitable for the type of road it is on?
Catchment area	The size of the catchment area of the bus stop will determine how often it is used and the frequency of routes.	Does the bus stop effectively support its catchment area, does it provide enough space and frequency of services?
Co-operation with advertising providers/other services	Bus stops provide opportunities for advertisers and can be a space for collaboration with other services such as micro-mobility providers.	Have the advertisement opportunities been considered and could the bus stop provide any other services?
Service frequency and average waiting time	The wait time will be greater if there are less frequent services at the bus stop, however the wait time can be made more comfortable with seating and a covered shelter at the bus stop.	How frequent are the services at the stop and is the wait time comfortable and convenient for the user?

All of these indicators, in addition to any others particularly relevant to a certain local authority, would provide a sufficiently varied hierarchy of needs for bus stops to successfully prescribe improvements to provide.

No local authority or operator has thus far successfully introduced a widely applicable audit template for the design of and access to bus stops. However, Wales was recently (2017) aiming to introduce a national code of practice for their bus stops. Although this specification seems never to have been completed and introduced, the relevant Minister at the time stated that under the guidelines “the relevant responsible local or national authority will be required to provide bus infrastructure specified in the statutory guidance.” Part of the rationale was that by specifying minimum guidelines for a set list of indicators e.g. lighting, additional funding for bus stops could be justified in order to increase compliance with those guidelines.[54] Note that some

[54] Wales proposes bus stop standards - The Transport Network (transport-network.co.uk)

largely rural authorities have created widespread accessible rural bus stops, notably Monmouthshire.

Existing bus stops which fail to meet minimum guidelines in relation to their patronage levels can be identified, prioritised, and upgraded. Relatively small and cheap upgrades to bus stops would provide a step change in passenger confidence and satisfaction with bus services, especially in rural areas. Oxfordshire estimates that better bus stop facilities, especially with regards to information and multi-modality, will increase passenger numbers by 2.5% (1 million per annum).[55]

Gloucestershire comes close to setting out a specific minimum requirement, with its long term goal being for every bus stop with more than 10 passengers/day to have a shelter, with that shelter to be large enough to accommodate the average number of passengers with 0.4 m^2/passenger.[56]

6.3 Case studies

6.3.1 Similar successful audit template – TfL Healthy Streets Check

A similar audit methodology has been developed by Transport for London for its Healthy Streets Assessment. While this does not directly relate to bus stop guidance, the same working can be applied to an updated bus stop audit assessment guideline. TfL's Healthy Streets guidance was developed as a tool to help achieve the ambition of getting all Londoners able to walk or cycle for at least 20 minutes a day. Through a categorisation of the current 'health' of a street segment, targeted improvements can be carried out to improve the attractiveness and comfort level of those streets. The stated goal of the programme is to achieve "streets where noise, air pollution, accessibility, and lack of seating are not barriers that prevent people – particularly our most vulnerable people – from getting out and about." Much the same could be said for bus stops across the UK, where the design, amenities, and access routes of a bus stop should be welcoming and pleasant, and not prevent any potential passenger from deciding to travel by bus. The criteria that are considered when carrying out a Healthy Streets check on a road segment are shown below.

Figure 6.4: Healthy Streets indicators, quantitative and qualitative, making up a healthy streets assessment.[57]

[55] Oxfordshire BSIP
[56] https://www.gloucestershire.gov.uk/media/2082481/appendix-e-bus-stop-design-specification.pdf
[57] https://content.tfl.gov.uk/guide-to-the-healthy-streets-indicators.pdf

Each of the 10 indicators have sub-criteria which make up the larger category, again providing greater granularity to better categorise the needs of a street segment.

For example, the indicator of 'People feel safe' includes inputs such as:

- Do pedestrians and cyclists fear they will have an accident with motor vehicles?
- Do drivers and cyclists on this segment drive aggressively?
- Is the current speed limit too high for the type of street?
- Do people cycle on the pavement for fear of cycling on the carriageway?
- Is there adequate lighting at night time?
- Are there windows overlooking the pavement?

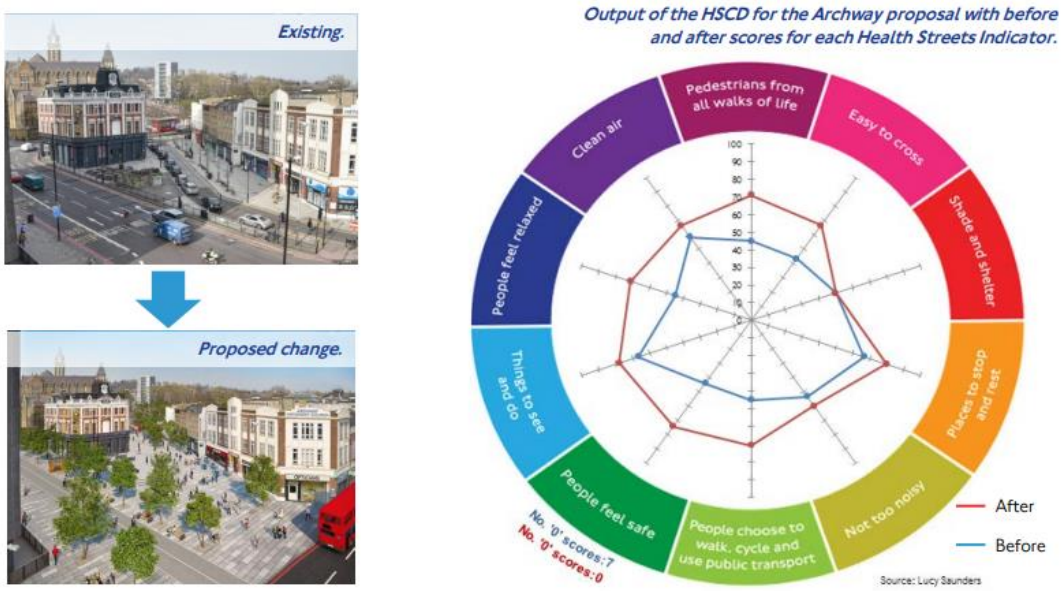
In all, 15 questions have been laid out to inform the complete picture of a street's safety. Each indicator has a similar number of low-level questions underpinning a final indicator score. TfL also offers a Healthy Streets check spreadsheet for analysis and option design. This allows planners to quantify the health of an existing street and see the impact of any proposed development changes on that street. Each criterion is scored according to its perceived existing and future quality, all acting as inputs to the weighted health check, as shown below.

Figure : Sample TfL Healthy Streets Check spreadsheet.[58]

Once all criteria have been filled out for a segment of street, a final output diagram showing the overall health of the street is produced, with a sample shown below.

[58] https://tfl.gov.uk/cdn/static/cms/documents/healthy-streets-check-for-designers-2018.xlsx

Figure 6.5: Example output of healthy streets check showing the changes in street health under a public realm improvement project.[59]



The Healthy Streets Check maps the spreadsheet criteria to the ten healthy streets indicators. This quickly highlights the areas in need of the greatest improvement for a street segment. A side-by-side comparison of the existing street with the proposed future arrangement also allows different options for improvement to be ranked according to their cost and quality impact. This clearly shows current shortcomings of a pedestrian environment, with an extra level of urgency/prioritisation gained by the listing of the number of '0' scores (areas where the street segment is completely inadequate).

For a similar theoretical bus stop audit template, a stop at a busy and important location such as a railway station/hospital/etc. that has few or no amenities would score very poorly. Areas needing the most improvement relative to the site (for example a lack of real-time information or timetables at a railway station, where many passengers would be new to the services) would be clearly identified as needing the greatest improvement.

6.3.2 Key Lessons

- Not all bus stops need to meet the highest standards, but all stops should meet certain minimum requirements as far as possible.
- More important (geographically and socially) bus stops should be prioritised and receive the greatest level of provision.
- An important first step is producing a database of all current bus stops within an LTA and the features present at each of them.
- Collaboration is key for bus stop improvements, between LTAs, operators, user groups, and other stakeholders.
- Any potential bus stop audit template would be widely applicable across LTA and STB boundaries.

[59] https://content.tfl.gov.uk/healthy-streets-explained.pdf

7 Bus stop improvements and hubs

The growth of passenger numbers is generally reliant on the provision of a high-quality passenger experience throughout the whole journey experience. While branding and communications may be the first point of contact that passengers have with a bus operator, the bus stop is the start and end of every passenger's journey. As such, all stops, no matter their location or size, must be fit for purpose to ensure that passengers enjoy their bus travel experience. For further information on bus hubs, please refer to Support Package 7: Rural hubs and integration.

7.1 Getting the foundations right

Building on the importance of Bus Stop Auditing and delivering customer experience to a consistent standard, Local authorities and operators should aim to provide at least a minimum level of amenity at their bus stops.

Some stops are naturally more important than others, and as such will justify much greater levels of infrastructure and investment, but all stops regardless of whether they are a poll, shelter or interchange should follow the rules outlined below:

- Height and type of kerb that is accessible for all users
- Ample space for pushchairs, wheelchairs and trolleys
- Clear and consistent naming to avoid confusion
- A space that feels safe and is secure (including lighting / CCTV)
- Shelter and seating where space permits
- Accurate and accessible travel information (including timetables and maps)
- Easy to read maps and signage to key local landmarks
- Where possible, co-located seamlessly with other modes to support end to end sustainable trips

Utilising the data gained from Auditing, benchmarked against the minimum standards for the bus stop size and location identified in the above chapter, will ensure a consistent level of quality and service throughout an LTA's geography and across borders to neighbouring authorities.

Figure 7.1: Paris RATP's 'Bus stop of the future,' including all categories of bus stop amenity listed above.[60]

The Paris bus stop shown in the box above is an important interchange point outside one of the main railway stations, hence a clear candidate for investment to link modes and encourage full origin to destination trips to be undertaken via public transport.

However, there is no reason that the same minimum requirements cannot be met, to a lesser degree in a more rural context. Rural bus passengers should not miss out on quality services and stops only because there are fewer passengers utilising each stop (see the example from Germany in Figure 7.2, below). Whatever the context of a bus stop, the foundations and minimum amenities need to be provided to entice and keep passengers.

For rural areas, certain things like up-to-date information and signage are essential. Too often with rural services in the UK, bus stops will either be missing route information, lack current timetables or missing the standard bus stop flag altogether. Without clear and current signage/information, people will not have the required confidence in bus services to use them regularly. Further information can be found in Support Package 7: Rural hubs and integration. Table 7.1, below, summarises the key challenges and opportunities regarding bus stop improvements

Table 7.1: Key Challenges and Opportunities for Bus Stop Improvement and Development

Key Challenges	Key Opportunities
Rural bus stops can be easily neglected due to low usage.	Increasing the visibility and attractiveness of bus stops can lead to satisfaction and ridership improvements
It can be difficult to retrofit existing bus stops due to limited road space and footways. Bus stops can be located in areas with restricted land availability, such as on grass verges in rural areas or on congested footways in urban areas.	Identify which bus stops and adjacent land are owned by LTAs, and bus stops which already have some features such as good lighting, and focus on improving them.
Balancing the amount of investment and amenities with the amount of ridership likely to be generated at a bus stop.	Use bus passenger charters to define what should be provided at bus stops and by whom.

[60] https://soundlandscapes.wordpress.com/tag/paris-bus-stops/

Key Challenges	Key Opportunities
Conflict with local businesses who do not want bus stops located outside their shops. They can perceive a stop as a disbenefit which blocks prospective customers sight line to their business.	Investigate sponsorship for bus stops, through advertising or other means.
The space requirements of hubs and land ownership means that hubs cannot simply be located anywhere.	Build bus stop hubs around community buildings, with a combination of uses and stakeholders saving on both construction and operating costs.
Bus stop hubs can be expensive to implement and have ongoing maintenance costs. There is also a question of who is responsible for the maintenance costs for hubs, e.g. greenery, bins.	Maintenance could be funded by advertising for local and national campaigns and other departments in LTAs.
It can also be time-consuming to make improvements.	When upgrading bus stops and creating hubs, start with simple improvements like integrating bus stops with one other mode, for instance cycle hoops so people can cycle to bus stops.
Local politics, down to local parish and war level can influence funding decisions.	Use of bus stop audit data and baselining to target investments where they are most required.
The removal of parking spaces is often a contentious issue with local communities.	Liaise with local businesses and communities to advertise the wider benefits of improving bus services, even to those who do not utilise the buses.

7.2 Funding Bus Stop Improvements

Improving bus stops comes at a cost, which can be funded through various of local and central government funding channels, as well as through private funding by Operators and third parties.

Traditionally, bus stops in the UK have been the responsibility of local councils, who build and maintain them at no cost to the bus operators. These are funded by the councils directly through their own budgets, supported at times through access to funding from central government through schemes, including the Bus Service Improvement Plans, Transforming Cities Fund, Towns Fund or Levelling Up Funding.

Developer contributions through Section 106 of the Town and Country Planning Act 1990, which allows a local planning authority to enter into a legally-binding agreement or planning obligation with a developer as part of the granting of planning permission also present a key opportunity to bring third party investment into improving facilities. Further information on funding mechanisms can be found in Support Package 8: Funding mechanisms.

The DfT recognises the role that bus quality factors, often referred as ‘soft measures’ such as enhancements to bus shelter can play in influencing bus patronage. As set out in the Governments Transport analysis guidance (TAG)[61], real monitory and perceived travel time benefits have been calculated to support LTAs and scheme developers capture the full benefits in investing in Bus Stop infrastructure, as shown in Table 7.2.

Table 7.2: Perceived travel time benefits of bus stop and interchange hub quality factors

Quality factor	Value and unit
New bus shelters	1.08 minutes
Timetables to electronic display	0.45 pence
Real time passenger information	1.69 minutes
New Interchange Facilities	1.27 minutes

[61] https://www.gov.uk/guidance/transport-analysis-guidance-tag - TAG A4-1 Social Impact Appraisal

Even if a bus stop improvement cannot be financially justified through an expected gain in passenger numbers, the table above provides a supporting method to calculate the full monetary benefit to passengers, which can support case making for investments to improvements at bus stops. It is recommended that LTAs have a pipeline of oven ready Bus Stop Improvement plans in place, which can quickly be put forward when Government funding becomes available, whether this be through the Department for Transport or the Department for Levelling Up, Housing and Communities

Whilst the majority of bus stop infrastructure and maintenance is undertaken by LTAs, there are some areas where the provision of shelters and other amenities is the responsibility of the Operator.

Clear areas of responsibility therefore need to be established for the maintenance and upgrade of bus stops, which can become more complicated as more amenities are added (for example, a bin needs to be emptied, planters need to be watered/cared for, etc.).

Through the EP or Franchising models, there is increasing quick and cheap opportunities for LTAs to encourage and incentivise Operators to collaborate further with local councils to improve the information side of bus stop infrastructure, where they may have more of a commercial interest. Keeping timetables up to date is not a difficult or time-consuming task, but many councils simply do not have the staff available to carry it out.

There are several considerations when setting out funding mechanisms for improving bus stops:

- More complete bus hubs, with a full suite of amenities, can be quite infrastructure heavy and take a large amount of capital and time to develop;
- Smaller, initial steps, towards developing a bus stop into a hub can be completed within the low cost and/or quick win framework;
- With many of the typical elements linking into other modes/other activities, multiple funding streams can be combined to develop a hub;
- For example, parcel lockers represent a good community benefit and can be installed at the cost of the delivery service;
- Similarly, car sharing and bike share can be installed by those companies rather than by the local authority, providing benefits to passengers via co-location at minimal cost; and
- Branding and signage is again very important but relatively inexpensive.

Figure 7.2: Rural bus stop in Germany, which still provides comfort and placemaking to bus passengers.[62]

For urban bus stop locations with higher passing traffic and passenger use, sometime bus stop infrastructure is provided directly through firms such as JCDecaux for free, or the cost of improvements covered in part or in full by advertising revenue streams. However, experience of this has been mixed, with Local Authorities such as Oxfordshire and Suffolk reporting some difficulty in making advertising screens a commercially viable offering.

An alternative model therefore could be to look for third party investment, such as via the co-location with other services such as parcel lockers providing novel potential funding streams. This could be a particularly innovative model to support investment in Rural Bus Stop Hub locations.

7.3 How to build on your foundations

The quality of bus stops will likely be variable across LTA jurisdictions. Town centre locations and those at busy interchange points are likely to have already benefitted from much better infrastructure investment than those in rural areas. Regardless of this, all bus stops can benefit from improvement in infrastructure, amenities, placemaking, urban realm, co-location with community facilities, or other business ventures.

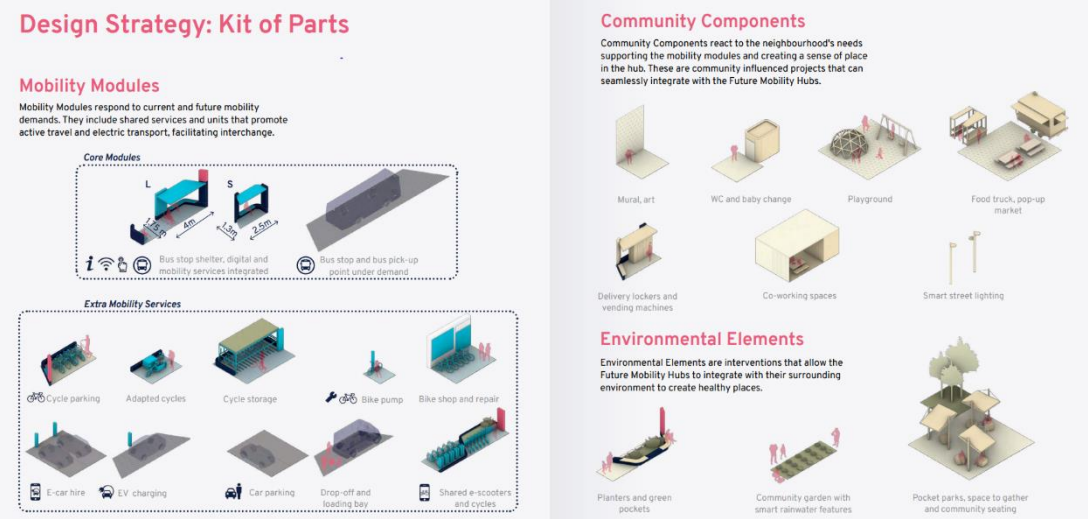
Incremental upgrades and improvements to bus stops can slowly lead to the creation of ‘super bus stops’ or ‘bus hubs.’ Beyond improvements to bus stops themselves, improving the wider area around them can increase their impact on influencing service quality, satisfaction, and ridership. Although individual bus stops do not have the potential to become ‘destinations’ in the same way that airports and railway stations can, bus stops can still become a larger focal point of a community.

Whilst clear branding and visibility can go a long way in terms of placemaking, co-location of services can further enhance an area. Placing multiple nodes of activity adjacent to a bus stop can make the service both more accessible and more attractive. These connected activities are already likely to be in the area near some bus stops, but not necessarily visible to passengers. Arup has previously conducted research into the modular and piecemeal development of simple

[62] https://www.behance.net/gallery/114983667/Rural-Bus-Stops

bus stops into ‘hubs’ and divide the potential elements into Mobility, Community, and Environmental elements.

Figure 7.3: Potential ‘kit of parts’ that can be added on alongside an existing or upgraded bus stop to develop it into a ‘hub’ with a larger community presence.[63]



Bus stop hubs, also termed mobility hubs, offer a modular, expandable, approach to increasing the visibility and attractiveness of bus services. They can take many forms, depending on their context and setting, e.g. rural, suburban or urban, but share common design principles and methodology.

CoMoUK, a charity body campaigning for better shared mobility, has summarised the general role of mobility hubs as: [64]

- Aiming to reduce reliance on individual motorised transport;
- Better facilitating multi-modal trips, with a reduction in barriers between modes;
- Improving access to larger bus and rail stations with first and last mile solutions;
- Increasing awareness and profile of public transport services;
- Linking transport services to community centres through shared facilities;
- Making healthier journeys and lifestyles more achievable;
- Enabling a reduction in on-street parking in towns and in new developments;
- Reducing street clutter through co-location of facilities; and
- Supporting the creation of 20-minute neighbourhoods.

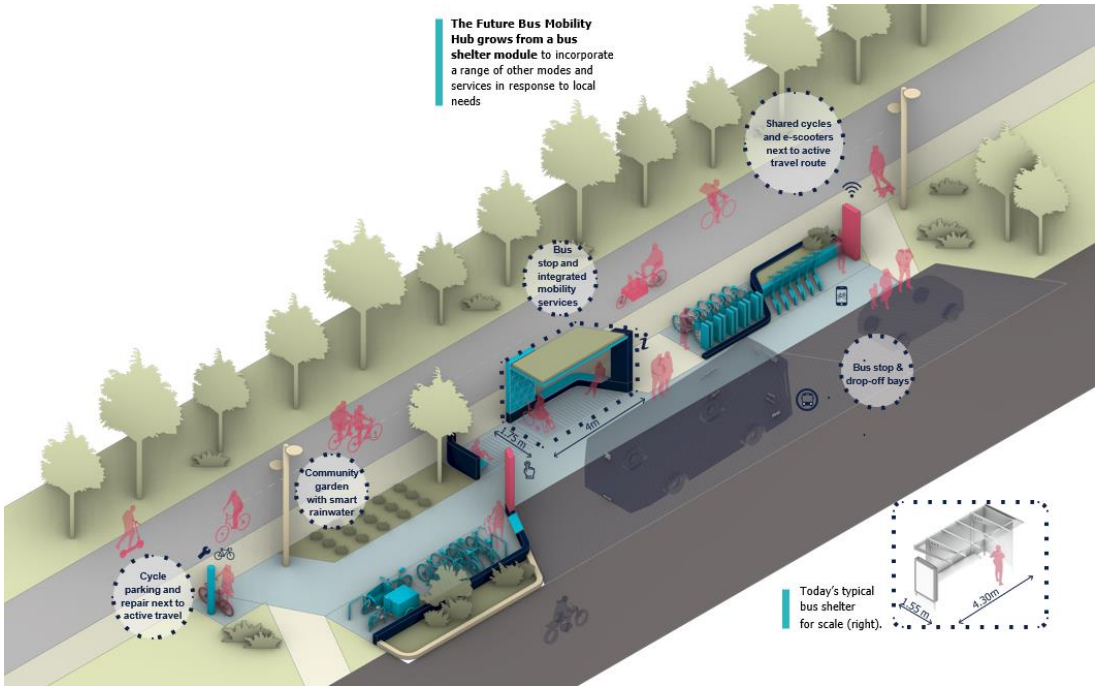
While mobility hubs are better conceptualised and executed in mainland Europe, especially in the Netherlands, the concept has started to spread to the UK, with the first officially labelled ‘hub’ opening in Scotland in 2021. However, hubs can exist without being explicitly labelled as such, and these ‘informal hubs’ are more widespread across the UK. In most cases, these locations have come about by accident, where multiple modes and wider uses have been layered on top of each other at the same location in a piecemeal manner. Whether or not the result was intentional, a transport node begins to become a hub when it starts to include these essential characteristics, broadly mirroring the ‘Kit of Parts’ shown earlier: [65]

[63] Future mobility hubs - Arup
[64] 618d2a1483ac3a158433e572_CoMoUK Mobility hubs toolkit_Oct 2021.pdf (webflow.com)
[65] 618d2a1483ac3a158433e572_CoMoUK Mobility hubs toolkit_Oct 2021.pdf (webflow.com)

1. Mixture of modes including public and shared/micromobility solutions (bus, train, light rail, cycles, e-bike, hire bikes, cargo bikes, scooters, car sharing, EV charging, etc.);
2. Services beyond the transport offer, to benefit passengers as well as the wider community (café, toilets, water refill, Wi-Fi, etc.);
3. Improvements to public realm and reduced space for private cars;
4. Integration into walking and cycling routes to facilitate access;
5. Good street design to integrate the hub into the public realm; and
6. Clear branding and identification of the hub with appropriate signage and information.

Local Transport Authorities can leverage their existing 'informal bus hubs' by, developing a consistent brand with minimum bus hub specifications, and upgrading these hubs across their areas to unlock benefits not just for bus users, but the surrounding local community too.

Figure 7.4: A good example of a community mobility hub, utilising elements from the Arup 'Kit of Parts'.[66]



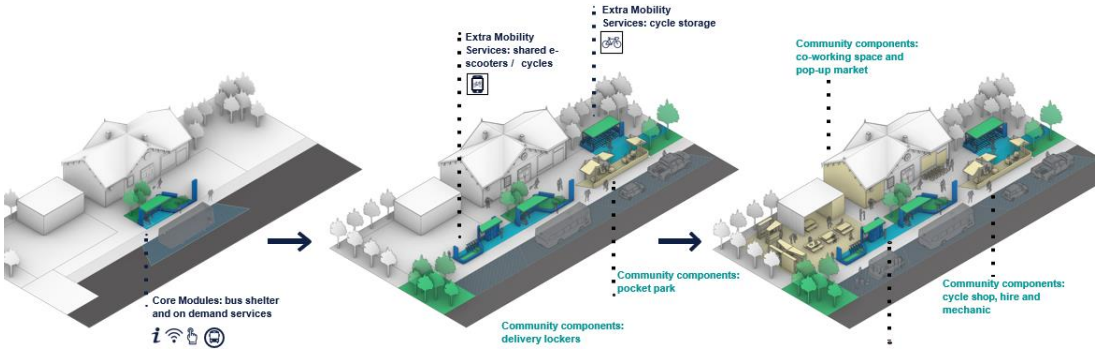
In its original form, a hub can start out as any existing bus stop. Initial improvements could include the introduction of planters and simple parklets on the road surrounding the bus stop, increasing visibility and permanence. Dependant on demand levels and the ease of connections to the energy grid, real-time arrival information, wi-fi and charging points, are relatively inexpensive and quick to install, but provide a significant boost to passenger comfort and ease of using the network. Improvements which are higher cost, such as those that need an electricity source, should be seen in the context of the investment, with elements such as RTPI core in many BSIPs that received funding. Similarly, developers could contribute to the cost of hubs at zero cost to LTAs. More information on funding mechanisms can be found in Support Package 8.

A second phase, could include further improvements such as the introduction of multimodality through cycle or scooter hire/storage and links to cycle route networks, Shared community elements can also be added, such as delivery lockers, or even co-working spaces / health

[66] Future mobility hubs - Arup

facilities, making the space more cohesive and welcoming to all transport users and non-users and being an asset to the community as a whole.

Figure 7.5: Progression in stages of a simple bus shelter towards a shared mobility and community hub, built up in small improvements over time[67]



Many elements aiding in the creation of the hub offer a wider benefit to the community and can be financially justified outside of a bus travel lens – diversifying potential funding streams. This includes the ability to as access schemes such as the Levelling Up Funding from the Department for Levelling Up, Housing and Communities, or justify developer Section 106 contributions. Further information on funding mechanisms can be found in Support Package 8.

7.4 Case studies

Examples of community mobility hubs are becoming more and more widespread in many forms across the UK and abroad, whether or not they are actually branded as such.

Increasingly, they are being funded by third party developers, providing a free or low cost win for the local transport authority.

7.4.1 Calderwood Hub

Calderwood is a new town under development in East Calder near Livingston, West Lothian, Scotland. As part of a newly completed housing project in the town, the existing bus services were re-routed to pass through the new development. To maximise usage, the private developers funded the creation of a mobility hub in the centre of their new development.

The current hub is shown in Figure 7.6: Calderwood mobility hub as currently built (2021), showing potential for further future growth.Figure 7.6. This represents a good example of a hub in its early form. Not all elements of a hub are present yet, but it is still clearly in the early stages of becoming a shared transport/community hub. There is a mixture of co-located modes (car sharing, local buses, community buses, and cycle hire), seating, and clear branding.[68]

Calderwood's bus services are operated by Lothian Country (part of Lothian Buses), serving Livingston and Bathgate to the west, and running through to Edinburgh to the east. Construction of the new hub was funded by the housing developers rather than by the local authority or bus operator, representing a possible funding mechanism for future mobility hubs. The area is highly suburban and very car-centric, the mobility hub helps to support sustainable travel modes making this area of Scotland more accessible without the need for a personal vehicle.[69] Future phases of the hub could increase its use, for example via the introduction of a dedicated bus service towards the nearest railway station at Kirknewton, 1 mile to the south.

[67] Future mobility hubs - Arup
[68] Mobility Hubs Case Study: Calderwood (como.org.uk)
[69] Stirling Developments opens Calderwood Mobility Hub | Scottish Construction Now

Figure 7.6: Calderwood mobility hub as currently built (2021), showing potential for further future growth.[70]

7.4.2 Musselburgh Hub

Musselburgh, a large town to the east of Edinburgh in East Lothian, Scotland, has also recently developed the beginnings of a mobility hub. In Musselburgh's case, the town, bus stops, and services were all pre-existing, and the hub-type elements have been added as part of a project run by East Lothian Council. The Council has said that the idea of hubs is to "provide a central location where people can access public transport and hire e-bikes, bicycles and car share, with a mobile app being developed to create a joined-up network among transport providers."[71]

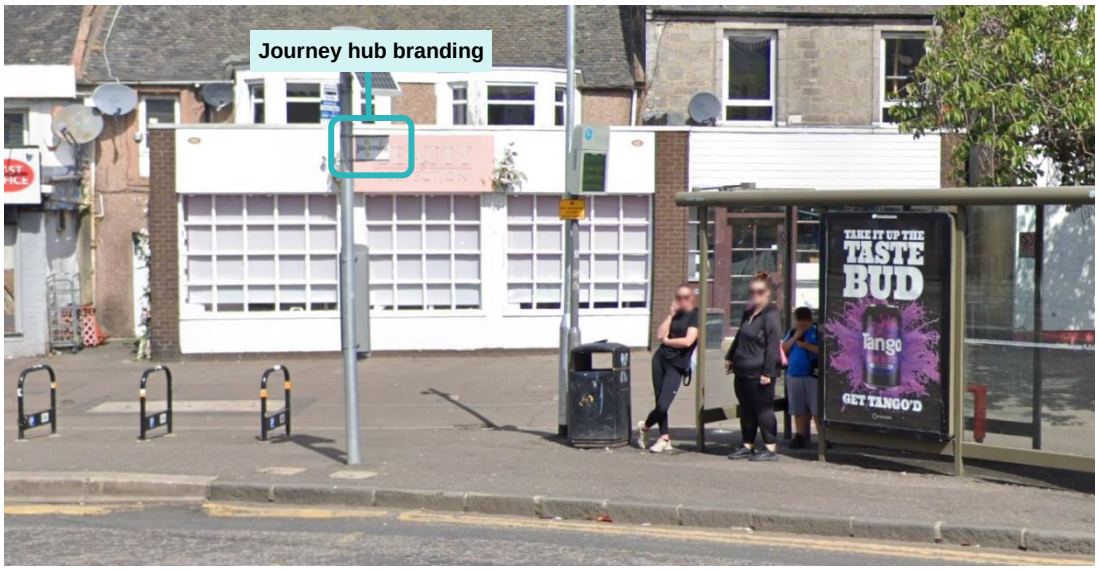
As with the Calderwood hub, Musselburgh's initial hub does not include all of the possible elements for a complete hub, but the recent work has still brought benefits to passengers and the wider community. Both the final concept design for the hub as well as its current setup are shown on the following page.

With only a limited amount of funding (around £30,000), the council was not able to fully realise all the elements of the hub concept. For now, the existing bus stop has had real-time information added, as well as an increase in cycle parking provision. Car sharing (through Enterprise car club) and e-bike hire (through Musselburgh's own system) have also been co-located. This is the first of many planned hubs in the council area and will continue to be developed further as more funding becomes available.[72] Even in its current limited form, it is clearly a travel hub, with new signage indicating so and with that branding to be carried forward to any future hubs as well. In this sense, travel hubs can function within low cost and/or quick wins, as it is the smaller elements like co-location and branding that are both most important and easiest to provide.

[70] Mobility Hubs Case Study: Calderwood (como.org.uk)
[71] Transport multi-hub project given the go-ahead to start in Musselburgh | East Lothian Courier
[72] Transport multi-hub project given the go-ahead to start in Musselburgh | East Lothian Courier

Figure 7.7: Concept masterplan for Musselburgh travel hub, to be completed in stages as funding becomes available.[73]

Figure 7.8: Current infrastructure at Musselburgh hub, with 'journey hub' branding highlighted [74]



7.4.3 Netherlands Rural Village Hubs

For much smaller areas, particularly small villages in rural areas with limited public transport access, there are few if any examples of existing hubs in the UK. However, multiple locations in the Netherlands have benefited from mobility hub style developments. Villages as small as Dieverbrug, with a population of only 310, are still able to support well developed hub locations, as shown in the photo below.

[73] https://www.eastlothian.gov.uk/downloads/file/31475/brunton_hall_journey_hub_concept_design

[74] Google maps

Figure 7.9: Bus hub in the village of Dieverbrug, Netherlands, with clear Dutch bus hub branding visible. [75]

Here, the offer is relatively simple, with a single structure functioning as bus facilities, as well as three level-boarding bus bays, real-time information, cycle racks and car parking. The hub has facilitated an improvement to village bus services. Instead of relatively infrequent slow services to Dieverbrug and surrounding villages, a fast service along the main road has been provided. A single hub stop in Dieverbrug allows local residents to cycle/walk/drive to the hub and continue their longer journey on public transport.[76]

7.4.4 Key Lessons

- Bus stop improvements can be funded through various routes, both public and private. Viewing Bus Stops and hubs as Community assets can maximise access to private sector funding and developer contributions
- Many bus stops will already provide multimodal connectivity, such as serving railway stations or being located adjacent to cycle parking, but are not currently seen or treated as hubs. Better branding and consistent infrastructure provision, built up from the 'Kit of Parts', will help maximise the stops potential in unlocking end-end sustainable trip making.
- Using a hub system can increase the attractiveness and viability of buses in rural areas

[75] https://www.waymarking.com/gallery/image.aspx?f=1&guid=1f241e17-ac1b-4273-8ce6-f9f3477cd0df&gid=3
[76] Op zoek naar een hub voorziening in Dieverbrug? - Reisviahub.nl

8 Improving bus journey reliability

Bus journeys themselves are just as important as bus stops in enticing potential passengers to use bus services. Any improvements to services, whether that be on the vehicles or in terms of speed/reliability, will be valuable in meeting the targets of the Bus Back Better strategy. Bus journeys are another component of the comprehensive package of the bus experience. For further information on journey reliability and punctuality, please refer to Support Package 4: Building a strong case.

8.1 Getting the foundations right

Journey times and reliability are important factors in attracting bus passengers – and can also reduce costs for operators. The greatest gain in reliability and journey time improvements can typically be achieved through expensive infrastructure and vehicle investments, such as large sections of bus lanes, BRT construction, or upgrading buses to offer multi-door boarding/alighting. However, there is often scope for improvements to journey time from low cost, non-infrastructure related interventions.

One aspect of bus operations which affects journey time is the payment of fares and ticketing arrangements. Boarding and alighting is a time-consuming operation, especially on heavily loaded services where cash fares are still common. Even by moving to contactless payments as standard, for services with different fares for different stage lengths, only a limited amount time can be saved. Using an app-based payment system, boarding with proof of payment, could yield relatively important savings, reducing the time spent idling at busy bus stops.

Bus operators need to measure bus speeds along routes such that congestion hotspots, certain bus stop locations that cause delays, or route sections often experiencing service bunching are able to be identified and analysed.

In some cases, timetables for buses that are only delayed for a limited period at peak times could be such that altered throughout the day to a marginally slower time; in this way the bus timetable will be perceived as more reliable by travellers (even if marginally slower). This can lead to a more positive experience for passengers, as the time spent waiting at a bus stop is typically perceived as longer than the actual time (and more uncomfortable than time spent on a vehicle). For example, Transport for London has identified an estimated time perception multiplier of 2.5x to compare the impact on passengers' perception of time spent waiting for a bus versus time spent on the bus. That multiplier is reduced to 2x for those passengers who have access to live bus time information.[77] For example, a bus passenger who arrives at a bus stop four minutes before their expected departure time, lacking real-time information, for a bus that is five minutes' delayed, will perceive their total nine-minute waiting time as the equivalent of a 22.5 minute bus journey. Hence, ensuring that bus schedules are achieving the right balance between speed and reliability is important to reduce the extent of excess waiting times for passengers, thus reducing the perceived total bus trip time and increasing overall satisfaction.

Sections of routes that have traffic or parking restrictions in place to improve bus reliability must also be continually enforced. Parking restrictions either on bus routes or at bus stops need to be a priority for enforcement officers to ensure the intended benefits are being realised.

Equally, with congestion hotspots identified, targeted non-physical priority measures could be introduced where possible. Relatively minor traffic signal modifications to signal sequencing

[77] https://content.tfl.gov.uk/value-of-time-at-the-stop-summary.pdf

can provide bus vehicles with more priority to minimise delays. This could involve low-cost 'tactical' changes to signal staging sequences and timings during peak times – such as reducing green times on non-bus approach arms, or detection-based green time extensions consistent flow and journey time). If signals arer already in place, modifications to signal controllers does not require a large up-front investment in the same way that bus lanes etc. do, can be implemented relatively quickly and inexpensively. The performance gains at busy traffic signal junctions can be significant; for example, a bus travelling through a junction one cycle earlier than 'normal' could achieve a time saving of a minute or more for a signal with a 90 second cycle time..

Table 8.1 summarises the key challenges and opportunities regarding bus reliability.

Table 8.1: Key Challenges and Opportunities for Bus Service Reliability

Key Challenges	Key Opportunities
Journey and schedule unreliability can lead to long waiting times and service bunching.	Real-time information at stops and / or on Smartphone apps can reduce the perceived impact on passengers of journey variability.
Traffic management on bus corridors , whilst benefitting pedestrians and cyclists, can often penalise buses.	Quicker journeys on selected routes by making changes to traffic signals to prioritise buses, and include bus-only movements.
Prioritisation of cycling infrastructure over bus infrastructure has hindered opportunities to improve bus journey times.	Ensuring that cycle infrastructure is designed as part of a cycle / bus multi-modal street treatment is important to achieve an outcome that helps bus users and cyclists.
A lack of understanding on how to design for buses limits the impact of some investment.	Bus-only signals and turning movements could lead to journey time savings.
Physical priority measures (bus lanes, etc.) can be prohibitively expensive or carriageway space may be lacking.	Non-physical priority measures are available (signal priority, parking/waiting enforcement) and can still lead to important performance gains.

8.2 How to build on your foundations

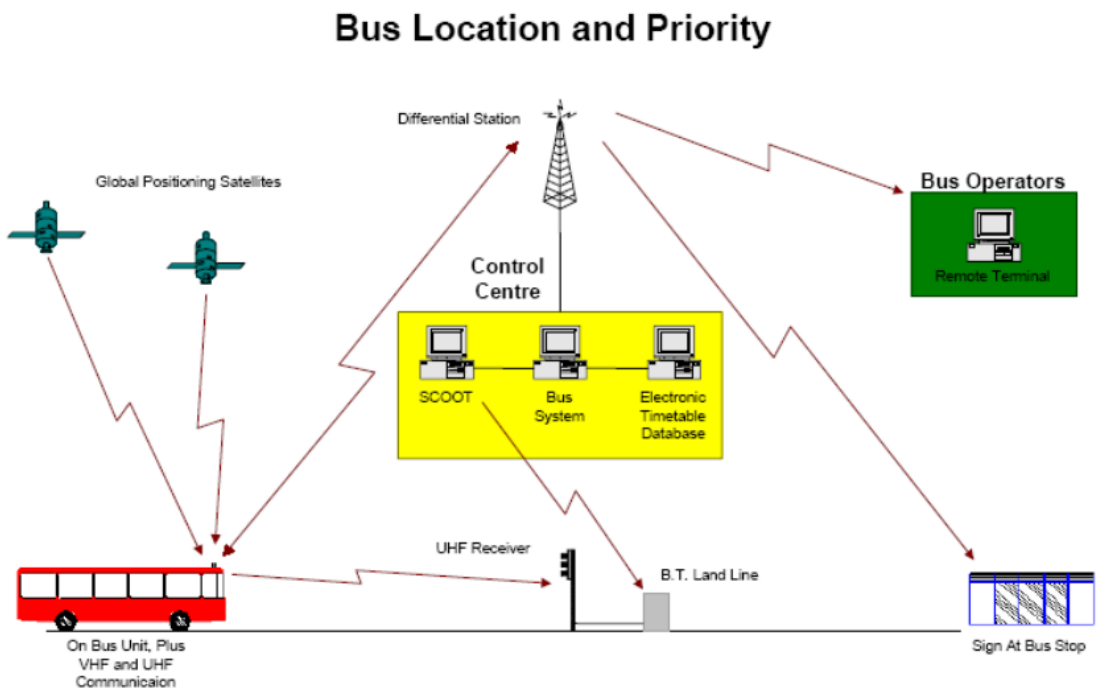
In terms of investments to improve journey reliability, signal priority measures are likely to be the lowest-cost and quickest intervention available. It is recognised that a network of signal priority measures may not be the lowest cost intervention, and under the £100,000 threshold, however it is significantly cheaper than alternative mechanisms for improving bus journey times such as bus priority measures.

Signal timings can be modified to provide a quick, easy, and cost-effective method for local authorities and bus operators to improve the efficiency and reliability of bus services. These modifications aim to prioritise the smooth movement of buses along their routes by minimising impacts from conflicting junction flows.

Systems can be either isolated (each junction operating independently) or co-ordinated (better where junctions are spaced closer together and each junction is affected by neighbouring junctions). Regardless of system architecture, TSP functions by allowing buses' real-time locations to be fed through to junction control systems (Vehicle Actuation). With this information, green signal phases can be extended or brought forward when the system detects a bus approaching that would otherwise meet the junction at a red signal.[78] Figure 8.1 below shows the system architecture of Cardiff's TSP modules.

[78] https://content.tfl.gov.uk/interaction-of-buses-and-signals-at-road-crossings.pdf

Figure 8.1: Combined real-time information and TSP system communications in Cardiff[79]



Bus location is identified via GPS modules on each vehicle. This information is transmitted to both a central control station run by the traffic authority and to the traffic signals themselves. As a bus passes through a priority algorithm applied to a specific junction, a signal to either wait, extend a green phase, or move forward the next green phase, is passed on to the traffic signal controller unit. The GPS location information is also passed through in real time to the arrival information screens at bus stops as well as the bus operator's central information hub.

The impact of introducing TSP obviously depends on the number and placement of signalised junctions on a bus route, which could be modified to improve bus flow. On more rural routes away from town centres, TSP would only make a marginal impact on journey times and reliability. However, on routes which traverse urban areas, unmodified junction timings can lead to large increases in real journey times. Thus far, TSP in the UK and abroad has mainly focused on either route-based (for bus rapid transit routes) or city-wide applications, with few schemes aiming to address issues in smaller towns and cities. TSP applications in regional centres with limited road space and high traffic volumes could be very beneficial.

Generally, the impact of TSP is greatest where buses traverse a stretch of road with short green stages. In these cases, a signal stage extension can bring more significant time savings to a bus journey. It is also worth noting, however, that TSP can only be at its most effective for junctions that have spare capacity. Because the system functions by reallocating green phases rather than reallocating road space, where all flows at a junction are congested, TSP can actually have a detrimental effect on journey times. In Bristol, benefits were maximised by only allowing TSP requests from inbound buses in the morning and outbound buses in the evening only.[80] Not all flows can be simultaneously optimised under TSP, so a flow priority must be established.

[79] Gardner, D'Souza, Hounsell, Shrestha & Bretherton, 2009

[80] http://www.jctconsultancy.co.uk/Symposium/Symposium2014/PapersForDownload/Traffic%20Signal%20Bus%20Priority%20is%20it%20time%20for%20a%20health%20check.pdf

Other examples of TSP implementation in the UK include Aberdeen, Swansea, Liverpool, West Midlands Combined Authority, West of England Bus Partnership, South East Dorset, and Transport for London. Transport for London has progressively been installing TSP measures at junctions since the early 2000s. It is estimated that an average saving of around four seconds per bus per junction is achieved along routes within Central London. That delay saving is comparatively small only due to the London system aiming to reduce the detrimental impact on other road users as much as possible. By virtue of those accumulated journey time reductions as well as reliability improvements, timetables and resourcing requirements can be better deployed, resulting in cost efficiencies with a payback period for TSP of around 1.5 years.[81]

8.3 Case studies

8.3.1 Transit Signal Priority in global cities

TSP represents a good example of a low cost and/or quick win initiative, as it can give similar results to bus priority without requiring as much capital expenditure as introducing physical infrastructure measures. Although the journey time savings and reliability gains are not nearly as great as from full physical priority, the benefit-cost ratio can be much better.

Only limited details are available on any city's TSP programmes, making it difficult to produce a full case study. However, the beneficial impacts of many global cities' installations have been identified, which clearly show the benefits of TSP. Every area studied has seen substantial improvements to journey time, reliability, ridership, or satisfaction. As stated, TSP is only suited to urban contexts, with the smallest city listed having a population of around 200,000. However, this is not to say that targeted TSP measures in smaller market towns could not also be cost-effective.

Table 8.2 shows a summary of cities with established TSP systems and the benefits achieved on their bus routes.

Table 8.2: Registered impacts of TSP schemes in selected cities around the world[82]

City	Impact
Delay Reduction at Junctions	
Aalborg	5.8 sec/bus/junction
London	4 s/b/j
Southampton	9.5 s/b/j
Auckland	11 s/b/j
Journey Time Reduction	
Aalborg	4%
Cardiff	4%
Genoa	8%
Gothenburg	14%
Helsinki	11%
Stockholm	10%
Los Angeles	7%
Passenger Levels	
Helsinki	increase of 11%
Stuttgart	increase of 10%
Los Angeles	increase of up to 13%

[81] **Invalid source specified.** https://content.tfl.gov.uk/svd-brochure.pdf
[82] https://content.tfl.gov.uk/interaction-of-buses-and-signals-at-road-crossings.pdf

In many of the cities studied after the introduction of their TSP programs, very significant improvements in bus delay, journey time, and patronage have been observed. While there will be some variability in the standards of measurement and reporting between different cities, the results overall clearly show the potential of TSP.

8.3.2 Proposed scheme in Oxfordshire

Within current BSIP proposals, the largest area of transit signal priority proposed was in Oxfordshire.[83] Here, there are plans to introduce TSP at all junctions within the county, beginning with the 147 signalised junctions within Oxford city centre.

Physical bus priority cannot be provided in Oxford as the road network does not have any spare space within the historic centre. With widespread congestion and ongoing delay problems, the only feasible solution is widespread TSP, which can link into existing real-time information modules on Oxfordshire's buses. TSP is hoped to be expanded to junctions within other towns in Oxfordshire where traffic delays also strongly affect bus services (Banbury, Bicester, Witney, Didcot).

The total economic benefit of TSP installations results from the prioritisation of bus services, resulting in lower overall delays to a larger number of people. Additional benefits come from service cost efficiencies from a bus operator perspective. Where significant journey time or reliability improvements have been made, bus timetables can often be covered by a smaller pool of vehicles and drivers, yielding large cost savings.

TSP is one of the main elements that is proposed to enable future growth in Oxfordshire's bus passenger numbers. Oxfordshire estimates that on a typical route within the city area, with 12 signals on each leg of a round trip, up to four minutes could be saved on a round trip leading to increased punctuality, reduced operating cost and increased patronage levels. Assuming a 10% reduction in average journey times can be achieved through TSP and other priority measures (a similar reduction to that delivered in other cities identified in Table 8.2), a 10% increase in passenger numbers has been estimated (four million trips per annum).

With an estimated total TSP installation cost of £3 million, fare revenue from these extra passenger trips would cover the initial installation costs within less than one year. TSP, while relatively cheap as an intervention, can quickly become expensive depending on the area intended to be covered. However, the installation of the required equipment at each individual junction and bus is cheap, simple, and quick to achieve.

The total cost in Oxfordshire, at all initial 438 junctions in the county is estimated to cost £3,103,900. This represents a cost of £9,000 per road junction and £6,500 per signalised pedestrian crossing. Extrapolating from these numbers, a smaller town the size of Banbury (47 signal locations) could have a TSP system implemented for an indicative cost of approximately £350,000 depending on the mixture of junction types.

Slightly higher costs will be required where buses are not already equipped with real-time tracking and location information, but on-bus installation costs are much lower than that for junctions.

8.3.3 Key Lessons

- TSP only makes sense where there are junctions with congestion problems.
- The greatest impact can be made in urban centres.
- Return on investment can quickly be gained by speeding up services, increasing ridership and reducing scheduling pressures.

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- Many previous applications of TSP have led to large measurable delay reductions, journey time reductions, and patronage increases.