



Bus Users UK report: Accessibility of Welsh bus operator apps

Introduction

Mobile phone apps are increasingly being used by operators in Wales to help passengers plan and make journeys. Under the Equalities Act 2010, operators have a legal responsibility to ensure these apps are accessible to all passengers.

By improving access to their apps, operators will improve access to their buses, increasing passenger numbers and ensuring all passengers can travel safely and with confidence.

To test the accessibility of these apps, the team from Bus Users UK in Wales has been assessing their design and ease of use around ticketing, journey planning, timetable search, maps (including bus stops), user accounts and operating systems.

Apps were tested from Arriva Wales, First Cymru, Stagecoach in South Wales, Cardiff Bus, Newport Bus, and Traws Cymru.

Summary

- Cardiff Bus, Newport Bus and TrawsCymru scored the highest though there were still areas where their apps could be improved
- Apps from Stagecoach in South Wales, First Cymru and Arriva had significant areas for improvement
- All apps examined would benefit from the addition of assistive technologies
- Any enhancements to improve accessibility for disabled and older passengers, improves the overall user experience for all passengers
- Apps should be designed in close consultation with passengers, particularly disabled and older passengers, and passengers with additional needs.

Criteria

All six apps in this report were assessed against the following four recognised criteria:

1. ISO standard 9241-11: 2018 Usability & Accessibility Guideline Reviews

This is a recognised framework for assessing the usability of interactive systems, set out by the International Organization for Standardization.

2. Siteimprove Website Accessibility Checker

This digital tool checks that recognised accessibility standards are met and that websites and apps are accessible and user-friendly.

3. Website Content Accessibility Guideline (WCAG)

The WCAG international standard sets out best-practice for making websites and apps more accessible to people with disabilities. Its guidelines set out 3 levels of accessibility - A (lowest) AA (mid-range) and AAA (highest).

4. Heuristic Evaluation

Heuristic Evaluation is a set of 4 criteria used to evaluate accessibility. These are that information should be 'Perceivable', interfaces should be 'Operable', content should be 'Understandable' and the meaning of content should be 'Robust'.

Siteimprove.com Scoring Results

Arriva App

Accessibility	91%
SEO	59%
Performance	4%
Page Optimisation	68%

Accessibility against WCAG standard:

A level	93%
AA level	100%
AAA level	79%

First Cymru App

Accessibility	84%
SEO	56%
Performance	54%
Page Optimisation	42%

Accessibility against WCAG standard:

A level	97%
AA level	100%
AAA level	54%

Stagecoach in South Wales App

Accessibility	75%
SEO	53%
Performance	48%
Page Optimisation	32%

Accessibility against WCAG standard:

A level	91%
AA level	75%
AAA level	60%

Cardiff Bus App

Accessibility	99%
SEO	-
Performance	-
Page Optimisation	-

Accessibility against WCAG standard:

A level	97%
AA level	100%
AAA level	100%

Newport Bus App

Accessibility	99%
SEO	-
Performance	-
Page optimisation	-

Accessibility against WCAG standard:

A level	97%
AA level	100%
AAA level	100%

Traws Cymru App

Accessibility	99%
SEO	-
Performance	-
Page optimisation	-

Accessibility against WCAG standard:

A level	97%
AA level	100%
AAA level	100%

WCAG Guidelines & Heuristic Evaluation & Analysis

Arriva App

This app is intended for all Arriva UK passengers, with service information available specifically for Wales. Allowing location settings while the app is open enhances the local passenger experience.

Ticketing

Digital tickets can be bought and stored in the m-ticket facility of this app once an account has been set up. Current and expired tickets can all be accessed and there's a journey search facility within ticketing as well as a separate journey planner. The range of ticketing options includes day, week, and annual specific to a particular route or service.

Journey planning

This feature is comprehensive and shows distances with specific timings including any walking between routes and connections. Maps can be viewed of a specific journey with change points highlighted. This app shows Arriva services only.

Timetable search

This facility is functional and includes an integrated map with most bus stops highlighted when using the zoom function. Timetables can be downloaded as a PDF but show only the main, registered bus stops.

Maps, including bus stops

The live interactive map shows all Arriva buses operating on a local route at any given time. Detailed timings are available by clicking on a bus, with live timings and route ETA available by tapping the map at stops along the route. Live timings aren't always available but it's still possible to see roughly where a specific bus is located. All bus stops are visible and clicking on a particular stop will show its name and upcoming departures.

User account

This tab stores personal information, favourite journeys, purchase history and payment method options.

Operating systems

Aside from minor layout differences between the iPhone and Android apps, all other features are identical.

Ease of use

The Arriva app is user-friendly with plenty of information to plan a journey and purchase digital tickets. The help section is comprehensive with contact us, lost property, refunds, and using the bus. The live journey feature needs work to ensure timings are always available and the 91% ease of use/accessibility score could be improved with enhancements such as audio assisted alerts.

WCAG & Heuristic Principles	A	AA	AAA
Perceivable	93%	100%	79%
Operable	93%	100%	79%
Understandable	93%	100%	79%
Robust	93%	100%	79%

Strengths

The Arriva app operates a disability passenger card system which discreetly communicates a passenger's needs to the driver and can act as a memory aid for the passenger. There's also a magnification tool for passengers with a visual impairment

Improvements

Colour-coded disability cards would make it easier for the driver to identify a passenger's specific needs with a reminder to the driver that the passenger is still on board.

Weaknesses level A

- Text is too small and there's too much content on the first page with no accessible navigation tool

- There are no clear colour-coded functions and nothing to distinguish specific actions such as leaving a page or requested information
- There are no audio alerts or navigational assistance
- The layout is confusing, there's too much, often irrelevant information and not enough space to tap on links
- Navigation is tricky and text is too crowded
- There's no link to customer services which is critical, especially in an emergency.

Weaknesses level AAA

The score of 79% indicates there's room for improvement. Free accessibility assistive technologies such as [Recite Me](#) would greatly enhance the user experience and its ease of use while travelling.

First Cymru App

This app is intended for all First UK passengers, with service information available specifically for Wales. Allowing location settings while the app is open, combined with the option to select a specific operational region, enhances the local passenger experience.

Ticketing

In order to buy and store digital tickets, passengers have to set up and activate a user account. All multi-ticket options are displayed (duration of ticket, single, return, weekly etc) together with payment options (contactless, cash, direct debit subscriptions).

Journey planning

This app offers good interactive journey planning with information on duration, designated routes, connecting bus services, expected departure times and walking distance between connecting bus stops. Although only First Bus services are included, clicking on a bus stop on the interactive map shows departure information for other bus operators, including timings. Live bus times are available for First Bus only.

Timetable Search

All First Bus timetables, UK wide, are available either on-screen or to download as a PDF. Individual service timetables downloaded via PDF feature only the primary registered bus stops.

Maps, including bus stops

The live, interactive map provides data on all First Bus local services, including information on how many seats are free, the number of wheelchair spaces available and whether there are any standing passengers. Clicking on a bus stop shows expected arrival times, including the timetabled departure times of other operator services.

User account

All personal information is stored here along with instructions on resetting the password and updating the email address. There are customer service contact details and links to lost property, ticketing and general enquiries.

Operating systems

This app is available and functional on iPhone and Android.

Ease of use

This app is user friendly to anyone used to technology. The location feature has to be reset during a journey as the GPS is slow to update and frequently gives a nearby location in error, along with incorrect bus data. Technical issues mean live journey information isn't always available.

These issues will need to be addressed along with overall accessibility given the 84% ease of use/accessibility score.

WCAG & Heuristic Principles	A	AA	AAA
Perceivable	97%	100%	54%
Operable	97%	100%	54%
Understandable	97%	100%	54%
Robust	97%	100%	54%

Strengths

The First Cymru app has many great features and functions to enhance accessibility including:

- Mobile tickets
- Real-time assistance/customer service
- Extended services
- Walking assistance
- Lost and found services
- No cognitive overload
- Logical, intuitive layouts

Weaknesses

The low accessibility conformity score of 54% suggests there is significant room to improve the apps overall accessibility and user experience. Free accessibility assistive technologies such as [Recite Me](#) would greatly enhance the user experience and its ease of use while travelling.

Stagecoach in South Wales App

This app is intended for all Stagecoach UK customers, with service information available specifically for Wales. Allowing location settings while the app is open, enhances the local passenger experience.

Ticketing

Passengers can buy a range of tickets for use within a specified area with options for daily, weekly and flexible tickets for adult, child or young person. Time limits on the tickets are clearly displayed and the digital wallet separates bought and activated tickets. Previous purchases can be seen via the account. A map showing the coverage of a ticket is available but only through the terms and conditions.

Journey planning

The journey planner is clear and offers a range of ticket options with passengers able to select departure and arrival times. The journey planner displays only Stagecoach services but offers details of additional passenger features on any given bus. There's information on current and upcoming service disruptions/changes but not in real time and not journey specific. Passengers can add 'favourite' services and set a default location to assist with future journey planning.

Timetable search

It's unclear whether timetables can be downloaded via the app in case of insufficient network coverage or data.

Maps, including bus stops

The live map displays all services and stops within a visible area. Selecting a service highlights its route on the map and selecting a stop shows information on delays and the next scheduled service. The app displays stops served by other operators. It's unclear if service updates are estimated or live GPS data

User Account

All user account information is easily accessed and updated with customer services available for assistance. The app is compatible with fingerprint scanners for additional security and closing an account is relatively straightforward.

Operating systems

The app is compatible with iPhone and Android although screen size and resolution affect the visibility of Google Maps.

Ease of use

The app is comprehensive and can be easily customised although it's fairly complex. An option to simplify and enlarge the display would make it more accessible as would a Read Aloud function. These issues will need to be addressed along with overall accessibility given the 75% ease of use/accessibility score.

WCAG & Heuristic Principles	A	AA	AAA
Perceivable	91%	75%	60%
Operable	91%	75%	60%
Understandable	91%	75%	60%
Robust	91%	75%	60%

Strengths

The Stagecoach in South Wales app has many great features and functions to enhance accessibility including:

- Journey planning short cuts
- Mobile tickets
- Notification settings
- User feedback surveys
- Clearly coloured coded for different functions
- Real-time assistance/customer service
- Extended services
- Good team support links
- Logical layouts

Weaknesses level AA

Navigation is difficult, particularly when trying to back out or exit a screen and there is no magnification tool.

Weaknesses level AAA

The score of 60% indicates significant room for improvement. Free accessibility assistive technologies such as [Recite Me](#) would greatly enhance the user experience and its ease of use while travelling.

Cardiff Bus App

This app is for use by Cardiff Bus passengers across the operator's metropolitan catchment and operational area.

Ticketing

In order to buy and store digital tickets, passengers have to set up and activate a user account. Ticket options include daily, weekly, and multiple trips of up to 10 (to be used within one year). Tickets can be bought using the link, with alternative ticket options not listed on the app available via a separate link.

Journey planning

The journey planning function and map are fully integrated and offer comprehensive journey information and instructions. Details of all Cardiff bus departures from a specific stop are shown under the 'view departures' feature although no services from other operators are shown. A carbon emission saving calculation is made comparing every journey planned by bus to driving by car.

Timetable search

A full list of timetables is available to view on-screen but not to download. The timetables are clearly displayed with interactive features and date option.

Maps, including bus stops

This app is fully integrated with Google Maps making it easy to use and interactive, with the zoom-in feature showing individual stops. There's no category for live tracking on the app menu but it's available via the journey planner 'view departures' link. Clicking on a bus stop reveals its name and all Cardiff Bus services that use the stop. A live tracking feature is available by clicking on a service number, providing real-time updates and estimated departure times, but the function is difficult to use. A scroll functions shows on-board capacity and features such as contactless payments, free Wi-Fi, low access floor and USB charging points. All bus stops are featured when using the live tracker but additional information is available for Cardiff Bus services only.

User account

Setting up a new user account is confusing as there are no specific menu options. Clicking on 'mobile ticket' reveals an option to 'sign in to see your tickets', prompting the user to create an account.

Operating systems

The app is compatible with iPhone and Android.

Ease of use

The Cardiff Bus app is intuitive and user-friendly, assisted by the integrated Google Map technology. Information is clear, accurate and concise with easy-to-follow links and notifications on digital ticket expiry and validation. The feedback link is for the app developers rather than Cardiff Bus which is misleading, and the user account setup function is confusing. The 'Things to do' feature details local events and tourist attractions, with promotions and discounts. The 99% ease of use/accessibility score is high but there is scope to offer more assistive technology.

WCAG & Heuristics Principles	A	AA	AAA
Perceivable	97%	100%	99%
Operable	97%	100%	99%
Understandable	97%	100%	99%
Robust	97%	100%	99%

Strengths

The Cardiff Bus has many great features and functions to enhance accessibility including:

- Details of local events and attractions
- Support of local businesses
- Journey planning short cuts
- Mobile and contactless tickets
- Notification settings
- Options to organise the app
- Gift codes
- Colour background
- System feedback
- Colour used to enhance accessibility and usability
- Real time assistance/customer service
- Extended services
- Good team support links
- Logical layouts

Weaknesses

Although this app achieved a high ease of use/accessibility score of 99%, free accessibility assistive technologies such as [Recite Me](#) would greatly enhance the user experience and its ease of use while travelling.

Newport Bus app

This app is for use by Newport Bus passengers across the company's metropolitan catchment and operational area.

Ticketing

This app is clear, intuitive and concise, and offers a variety of ticketing options including daily, advance weekly, 4-weekly passports and annual fares. Buying a ticket requires a user account which is only accessible by clicking on 'my travel' then 'sign in' as there is no link in ticketing. Tickets appear in the inbox of the app and have to be downloaded to the device in order to be used. Current and expired tickets are kept separately and there is an option to 'gift' a ticket by email to anyone using the same app.

Journey planning

Journey planning is fully integrated with the map, with easy access between the two. A journey can be planned by dropping a pin onto the start and end of your journey on the map itself. The best journey route is given along with connections, bus service number, live departure time and number of steps if required. The number of steps it would take to walk the entire journey is also calculated, along with carbon emissions saved by taking the bus rather than driving.

Timetable search

All Newport Bus timetables are displayed on-screen, along with an illustration of the bus route linked to the map. Timetables can be downloaded as a PDF. Clicking on a bus stop icon displays all Newport Bus services for that stop along with timings. Other operator services are not displayed.

Maps, including bus stops

This app is fully integrated with Google Maps. Zooming in and clicking on a specific bus stop and service displays real-time bus information and bus location. The map also shows traffic levels at city centre bus stops. There is a street view option and all stops are allocated a service number, which displays all the stops with a map.

User account

Navigation to the user account isn't clear and involves clicking on 'my travel' then 'sign in'. Editing or deleting an account is straightforward and it is possible to set up and access an account via Apple ID, Google or Facebook.

Operating systems

The app is compatible with iPhone and Android.

Ease of use

The app is intuitive and user-friendly, assisted by the integrated Google Map technology. Information is clear, accurate and concise with easy-to-follow links. Including information for all bus operators serving the Newport metropolitan area would be a useful addition. The help and support section offers FAQs, a link to the Newport Bus website and an option to message Newport Bus direct. Full contact details are on the app home screen and the customer service number can be called by simply tapping on the link. Even with an ease of use/accessibility score of 99%, the app could be enhanced with assistive technology to improve the user experience.

WCAG & Heuristic Principles	A	AA	AAA
Perceivable	97%	100%	100%
Operable	97%	100%	100%
Understandable	97%	100%	100%
Robust	97%	100%	100%

Strengths

The Newport Bus app has many great features and functions to enhance accessibility including:

- Free local events and news
- Support for local businesses
- Travel journey planning short cuts
- Mobile and contactless tickets
- Website access
- Call link to customer service
- Notification settings
- Ability to organise the app
- Gift codes
- Customer and system feedback
- Clearly colour coded for different functions and accessibility
- Real-time assistance/customer service
- Extended services
- Good team support links
- Logical layouts

Weaknesses

Although this app achieved a high ease of use/accessibility score of 99%, free accessibility assistive technologies such as [Recite Me](#) would greatly enhance the user experience and its ease of use while travelling.

Traws Cymru App

The Traws Cymru app is the only nation-wide network app available for Wales, with a focus on the full range of Traws Cymru services. It isn't immediately clear in the app that Traws Cymru is a network of franchised services operated by a variety of bus companies.

Ticketing

Digital Traws Cymru tickets can be stored on a smart phone via the app with current and expired tickets available to view. The journey search facility isn't accessible in ticketing. Integrated ticketing options are not included in the app despite this being a national public transport network. Tickets are limited to travel on individual Traws Cymru services and do not include journeys requiring a connecting Traws Cymru service. The app does not advertise the Traws Cymru 'Day Ticket' which is available on-board a bus and covers all services across the network, providing good value-for-money.

Journey planning

Journey planning is available for Traws Cymru services only and does not include connecting services run by local bus operators. A journey map can be viewed highlighting Traws Cymru bus change points.

Timetable search

The timetable search facility is comprehensive and includes all Traws Cymru services. Individual service timetables are not available to download.

Maps, including bus stops

The live map with GPS tracking shows all Traws Cymru buses in operation using the zoom facility on Google Maps which is fully integrated. Clicking on a bus links to buying a ticket and provides information on features such as USB charging, wheelchair access and contactless payments. Live timings and estimated arrival times are not shown. Bus registration numbers are displayed, along with details of how busy a bus is, with the option to submit your own live updates to inform others. All stops are shown and using zoom and click displays the name of the stop, forthcoming Traws Cymru departures, bus tracking and directions to the bus stop. Only Traws Cymru services are shown, with no information on other connecting local and regional services.

User Account

User account information is accessible to anyone used to technology. Alongside personal information there are links to favourite journeys, service updates, tickets, timetables, journey planner, and 'things to do' in a specific locality.

Operating Systems

This app is compatible with iPhone and Android. Google Maps is slightly easier to use on an Android device.

Ease of Use

The Traws Cymru app is user-friendly but lacks integration with other regional bus and rail services. Even with an ease of use/accessibility score of 99%, the app could be enhanced with assistive technology to improve the user experience.

WCAG & Heuristic Principles	A	AA	AAA
Perceivable	97%	100%	100%
Operable	97%	100%	100%
Understandable	97%	100%	100%
Robust	97%	100%	100%

Strengths

The Traws Cymru app has many great features and functions to enhance accessibility including:

- Manageable departure and destination intuitive links
- Easy to follow and manage timetables
- Support for local businesses
- Online mobile tickets
- Notification settings
- Choices in organising the app
- Customer and system feedback
- Clearly colour coded for different functions and accessibility
- Extended services
- Good team support links
- Logical and easy to navigate layouts

Weaknesses

- Lack of customer service
- No real time customer service
- No call link for customer
- No emergency call option
- No emergency connectivity within remote locations

Although this app achieved a high ease of use/accessibility score of 99%, free accessibility assistive technologies such as [Recite Me](#) would greatly enhance the user experience and its ease of use while travelling.

Recommendations

The following recommendations, based on the findings of this report, are designed to improve accessibility and enhance the overall user experience for all passengers:

1. Adequate customer service and customer feedback. This is vital for emergency back-up, especially in remote, rural areas.
2. Embedding assistive technologies into the app such as the plug-in software [Recite Me](#) These features can greatly enhance accessibility and usability.
3. Embedding colour coded cards into an app enables a passenger to quickly and discretely communicate their needs to the driver, ensuring they can travel safely and with confidence.

4. Engaging directly with passengers through the app and requesting feedback. Surveys are particularly useful for this purpose. It is vital that operators act on this feedback.
5. Any operator considering, or in the process of, designing a passenger app should consult directly with passenger groups, particularly groups representing disabled and older passengers. Any consultation must be meaningful and used to inform and enhance the end product. There are some useful resources to aid this process such as this video from [Web Accessibility Perspectives](#)

About Bus Users

Bus Users UK is a charity that campaigns for inclusive, accessible transport. We are the only approved Alternative Dispute Resolution Body for the bus and coach industry and the designated body for handling complaints under the Passenger Rights in Bus and Coach Legislation. We are also part of the Sustainable Transport Alliance, a group working to promote the benefits of public, shared and active travel.

Alongside our complaints work we investigate and monitor services and work with operators and transport providers to improve services for everyone. We run events, carry out research, respond to consultations, speak at government select committees and take part in industry events to make sure the voice of the passenger is heard.

Bus Users UK Charitable Trust Ltd is a registered charity (1178677 and SC049144) and a Company Limited by Guarantee (04635458).

Bus Users UK

22 Greencoat Place
London SW1P 1PR

Tel: 0300 111 0001
enquiries@bususers.org
www.bususers.org