Scottish Bus Open Data

Consultation Information

Contents

Introduction

What is bus open data?

Bus open data (or "BOD") means information about buses and bus routes which is published, free of charge and electronically, by bus operators. Information such as the fare for a specific journey, real time information about where the bus currently is, the route, the timetable and on board information (such as the availability of accessible spaces) are all examples of BOD. We believe that by making this kind of information 'open', people will be better able to make informed decisions about using public transport, for example, by being able to compare fares between two different operators, or to know exactly where on a route their bus currently is.

The Scottish Government Open Data Strategy, defines open data:

"Open data is non-personal and non-commercially sensitive data. Open data is easily discoverable, accessible to anyone and able to be freely used, re-used and redistributed by anyone. Open Data is data made available, via the internet, in an electronic format which supports its ready re-use, and with open licensing which allows its reuse."

Why are we consulting on bus open data?

Since 2001, section 33 of the Transport (Scotland) Act 2001 has required Local Traffic Authorities to seek to arrange for operators of local services to share some bus service information with the public, and many operators also share data voluntarily to provide a better passenger experience. In 2019 the Scottish Government brought in new primary legislation for transport (the Transport (Scotland) Act 2019), which included new provisions to better define bus open data, and to require it be shared for the new purpose of directly informing passengers (or potential passengers) about services. We believe that bus open data is essential to make travel on public transport more accessible, and to increase patronage of public transport in Scotland.

We intend to introduce new supporting legislation, known as Regulations (or 'Secondary Legislation') which define what specific information is required to be published, when, and in what format. This will allow for consistency across Scotland and will help us align with changes already underway in the wider UK.

This will directly affect bus operators in Scotland, as well as bus passengers and potential bus passengers, and may also be of interest to other groups whose members have an interest in bus operations in Scotland.

The Scottish Government's role in bus open data is to:

- Set the vision and objectives of what bus open data will achieve and how
- Establish the case for change and rationale for intervention regarding existing bus journey planning practices
- Introduce regulations to provide for and facilitate bus open data
- Specify the data standards and requirements for bus open data
- Support the wider bus industry and operators to deliver bus open data

What information will be required?

Section 40 of the 2019 Act allows Scottish Minsters to lay in Parliament Regulations that require bus operators, Local Transport Authorities and the Scottish Traffic Commissioner to provide information about bus services for the purpose of improving journey planning for passengers and potential passengers.

These regulations, which will be supported by guidance, will require the following information.

- Information about routes, stopping places, timetables, fares and tickets,

- Information about changes or proposed changes to routes, stopping places, timetables, fares and tickets,

- Information about the operation of services including (but not limited to) real time information about the location of vehicles operating the services and the times at which they stop, (or are expected to stop), at stopping places, and information about the operation of services in the past.

The legislation will specify the manner and format that this information must be provided in, who it is to be provided to, and how often. This consultation is intended to provide an opportunity to gather views on these details and to provide comment on any other information which you feel would be useful to include but is not listed here.

While all views will be welcome, we anticipate that the technical format of how information is provided will not have wide public interest, and it is likely that only bus operators themselves that will have views on this area. That being the case we have allowed for respondents to 'skip' the more technical questions at the end of the consultation if preferable. However, any respondent can skip any question they choose to from the main question bank

Background and Context

A consultation was carried out in 2017: [Local Bus Services in Scotland – Improving the Framework for Delivery](), which provided a high level overview of the appetite for bus open data in Scotland. The consultation found that the majority of respondents agreed with Transport Scotland's proposals to require the operators of local services to release data on routes, timetables, punctuality and fares in a specified format. This was part of the evidence which informed bus provisions within the 2019 Act, including the information Ministers could require by section 40 (Bus Open Data).

Most respondents also agreed that data provided by operators should be stored in a central data hub. Relating to both the general concept of open data and a central hub, respondents often commented that these proposals would improve data consistency, accessibility of data and transparency. The consultation found that:

- Most respondents (96%) agreed that bus operators should release data on routes, timetables, punctuality and fares.
- Respondents believed the data could be used for different means, including transparency, increase Local Authority scrutiny on bus reliability cost etc and could ensure a more accurate information regarding buses.
- Some respondents made suggestions for how open data could be collated and accessed. A few of these respondents suggested consulting local authorities, Regional Transport Partnerships and transport operators who already hold data to ensure there is no unnecessary duplication of effort. Another suggestion was that Electronic Bus Service Registration (EBSR) could be used as a vehicle to collate open bus data.
- Most respondents (92%) agreed that data provided by bus operators should be stored in a central data hub, with recognised benefits including quality checking, ease of access, public accountability, and data security.

Publication of information through Traveline Scotland

There is a general requirement under the Transport (Scotland) Act 2001 for Local Traffic Authorities to require bus operators to make information available to the public, although it is up to the operator how this is achieved and in what format. As such, many operators provide information to the public though their own websites. This can range from downloadable pdfs of fares and timetables to interactive journey planners and apps that include fares data and live service updates, this can therefore be inconsistent from the perspective of a passenger comparing the information between two or more operators.

Transport Scotland works with 'Traveline Scotland' to provide open data travel information services. The Traveline Scotland central data hub is used to capture timetable and other travel information for the whole of Scotland and provide it to the public in an accessible way, via website, app and the Traveline call centre. Traveline Scotland has been in place since 2001, the journey planning service was recently improved and relaunched in September 2024, and functions as Scotland's central 'hub' of travel information.

It is a legal requirement for almost all bus services to be registered with the Traffic Commissioner, the body responsible for the registration of bus services and heavy goods vehicles in the UK. In most cases, this information is not provided directly to Traveline Scotland by operators. Instead, information is supplied to Local Transport Authorities (LTAs) as part of the registration process, many of whom will also carry out a "sense check" on the data. The information is then forwarded by the LTA to Traveline and used to create the UK wide Traveline National Data Set (TNDS) database which in turn populates their journey planners.

The TNDS contains public transport timetables for bus, light rail, tram and ferry services in Great Britain and is compiled from data from Traveline Scotland, the English Traveline regions, and Traveline Wales. Use of TNDS data by third parties is subject to users signing a specific licence agreement. For example, the Scottish public transport information used by Google journey planning comes from the TNDS.

In Scotland, fares are not included as standard in the information published through Traveline Scotland, although the voluntary sharing of fares information to Traveline Scotland has grown in recent years. We believe that this may be because information about fares is not part of the registration process with the Traffic Commissioner, and so LTAs would not have sight of fare information to pass on. Bus operators are required by law (The Public Service Vehicles (Registration of local services) (Scotland) Regulations 2001) to make fares information available to the public on board buses, which means that information about fares cannot be considered commercially confidential, but potentially some operators may have concerns about fares being easily compared between operators, as passengers may use the information to opt to wait for a cheaper service. Transport Scotland would like to see fares information included in the data provided to Traveline Scotland in order to allow passengers to make informed choices.

In the 2017 consultation for the Transport (Scotland) Act 2019, 92% of respondents agreed that any data provided by operators should be stored in a central data hub. This would deliver value for money, capitalising on the processes established between operators, local authorities and DTDS to deliver that project. Our vision is for the central data hub to be the sole trusted source for all journey planning information in Scotland

Elsewhere in the UK

As many of the bus operators in Scotland operate services elsewhere in the UK, we are broadly seeking to align with England and Wales to provide a consistent approach to the publication of data across the UK, where possible, to reduce the regulatory burden on such companies. A consistent approach is also expected to be of value for developers of digital products such as apps and websites which are likely to operate in multiple regions, as well as members of the public who expect to have the same access to quality information regardless of their location.

The UK Government has introduced "The Public Service Vehicles (Open Data) (England) Regulations 2020" which came into force in July 2020. In response, the Department for Transport set up the Bus Open Data Service (BODS) as the central service for publishing information for all local bus services in England. Operators of local bus services in England publish data via the Bus Open Data Service. There are three types of data that operators must publish in certain data formats: timetables, bus location and fares, and there are additional requirements for transport authorities in terms of information about bus stops.

The Welsh Government is progressing legislation similar to the Scottish 2019 Act, which will apply to Welsh Transport Authorities. In 2023, Transport for Wales procured the Welsh Bus Data Service (WBDS) to provide better quality information on services around Wales. This has two purposes:

"*To receive, store, process and share operational and financial data about buses in Wales,* […] and to *manage public service messages, real time information and other content for transmission to display boards*"

What problems are we trying to address?

No requirement to openly publish digital fares and real-time information

Presently, there is no requirement to openly publish information about digital fares and real time information. The current legislation simply enables LTA's to request information from bus operators, however the new BOD regulations will directly require bus operators in Scotland to provide open digital fares information and real-time information. This means that at present, passengers are not always able to compare the cost of journeys operated by different bus companies in order to get the best fare or be aware of the range of tickets available for to purchase. A lack of real-

time information means that passengers cannot be certain when a bus will arrive, or whether a connection between services will be made.

This impacts confidence in using public transport and means that passengers often build in extra time into their journey to account for unforeseen delays.

Scotland currently lacks a national dataset holding real-time and fares information for all operators. While some bus operators provide this information voluntarily, it is not all provided to a national centralised hub and requires passengers to look at different websites to make their own comparisons. Our intention is for this information to be uniformly available, for all operators, as it is in England where Bus Open Data legislation has already been introduced.

Voluntary steps don't go far enough

As of 2024 approximately 60% of bus routes, including those by Scotland's largest bus operators, have agreed to provide open real-time vehicle location information to Traveline Scotland, and 63% of routes provide open fares information. This data is provided by operators to Traveline Scotland on a voluntary basis, which is encouraging, but means that around 40% of routes have no real time information associated.

In order to develop new data hub system integration and enable a fuller real time data set, Transport Scotland has encouraged operators to provide this information by providing financial support for around 70 additional small to medium operators to provide real-time information to Traveline Scotland which will result in real time vehicle location being available from 2025 onwards. However a number of operators did not take up this support, and this still leaves a large number of areas without real time information about bus services. In addition in the current fiscal position, the continuation of this financial support is unknown.

Bus stop data consistency

Whilst there is a duty on local authorities under section 33 the 2001 Act to make information about bus stops available, the specific detail of bus information to be made available is determined by the local authority itself, leading to inconsistency between authorities.

There is already a national dataset of all public transport stops managed by the Department for Transport, which holds information about bus stops, railway stations, tram, metro and underground stops and airports and ferry terminals. This database, known as "NaPTAN," (the National Public Transport Access Nodes database) is

updated by Scottish local authorities on a voluntary basis, while in England it is mandatory. As such, the Scottish data set includes inconsistencies in the availability and quality of bus stop data across Scotland as each authority takes a different approach to providing updates. For this reason, we plan to make this mandatory in Scotland.

Data quality, detail and inaccuracies

The amount of bus service information available to passengers in Scotland is continuing to advance. However, the sharing and publishing of bus service information varies from local authority to local authority or is provided voluntarily by bus service operators who are not legally required to provide it. There is a risk that any change to the views on data provision by operators, changes in bus patronage or other unrelated pressures in the service could result in a reduction of information provided if not mandated for.

Your Views

We have already agreed and set in primary legislation that regulations can be drafted that will require bus operators to openly share the following information:

- Information about routes, stopping places, timetables, fares and tickets,
- Information about changes or proposed changes to routes, stopping places, timetables, fares and tickets,
- Information about the operation of services including real time information about the location of vehicles operating the services and the times at which they stop, (or are expected to stop), at stopping places, and information about the operation of services in the past.

The Regulations will specify the manner and format that this information must be provided in, who it is to be provided to, and how often. This consultation is intended to provide an opportunity to gather views on these details and to provide comment on any other information which you feel would be useful to include but is not listed here.

 We also intend to progress guidance that supports bus operators in complying with the new legislation in a way that avoids any delays in the practical implementation of the new requirements. We are therefore keen to hear views from all interested parties on the following topics;

- What we mean specifically by 'information' in the above list
- What information bus users want to know, and where they would look for it
- The types of service that the new Regulations should apply to.
- The overall timetable for bringing in the new Regulations, for example, should there be a single date after which all new requirements are mandatory, or should the requirements be phased in over a period?
- When the data should be submitted, e.g. yearly, monthly, or some other period.
- The form and content of any guidance. Specifically for this area we are seeking views from the bus sector on what support would be most useful, however we are keen to hear from any interested party with views to share.

And finally, we are also seeking views on the data format that bus open data should be submitted in by operators. We appreciate that the views of users of public transport on what information they would like to see is not likely to extend to the technical data format it would be provided in, and there is unlikely to be wide public interest in the more technical questions on IT capability. For this reason, you have the option to 'skip' any question that you would like to move past without answering. This consultation will close on 21 June 2025

S1 Type of services

We propose to include all bus services registered with the Traffic Commissioner or the Local Authority in a franchise area, within the scope of the bus open data Regulations. This includes all public bus services that require a fare, either running to a fixed, regular timetable, or bus services which have the option of missing out or including parts of a route (demand responsive transport), and community bus services. This would also put some types of bus service outside of the scope of the legislation, for example, the majority of school buses, substitute buses (for example, replacement rail services) and long-distance coach services, where the stops are over 15 miles apart.

We intend for the Regulations to only require bus operators to provide data where provision of that data is in the public interest, to avoid creating a burden on operators that has no practical benefit. For that reason, we do not believe that there is a general public interest in having to provide the route of a replacement rail service bus, which may only operate once, and will be directly communicated to rail passengers on arrival at the rail station. We do not believe it is practical for the Regulations to apply services that do not need to be registered with the Traffic Commissioner or the Local Authority, as there is no central index identifying these, and therefore it is not possible to ensure compliance with the requirements of the Regulations.

Services registered with the Traffic Commissioner:

Local Bus Services - A bus service that uses public service vehicles to carry passengers who pay separate fares over short distances - usually less than 15 miles from the point of boarding. These are all public services requiring fares from passengers. Local buses can be further broken down into:

- Standard service, which is a service that runs along a fixed route in line with a timetable. It must always run at the times it is registered to do so. This also includes work, school, excursion and tour services, if separate fares are paid, and the whole journey is within a 15-mile radius of the starting point, and they run one or more times a week for at least 6 weeks in a row.
- Flexible services, which may have fixed sections of route but over the entirety of the service it isn't practical to identify a route and timetable.
- Community bus service (Section 22 of the Transport Act 1985) – A local bus service registered with the traffic commissioner but operated without a view to profit and are concerned for the social and welfare needs of one or more communities. A community bus permit allows the service to carry members of the general public.

Services registered with the Local Transport Authority

Local Transport Authority - Franchised Service - Where a franchise scheme is in place, the Local Transport Authority is responsible for all registration functions for services operated in the scheme area.

Services that do not need to be registered with the Traffic Commissioner or the Local Authority:

- long-distance services where passengers cannot get off within 15 miles;
- school or college bus services if the only passengers who pay fares are either studying at a school or college, supervising pupils or students, or teachers or assistants working at the school or college;
- substitution services for railway services which have been temporarily interrupted, provided under an agreement entered into with the Secretary of State, the Scottish Ministers or the National Assembly for Wales;
- Not for profit community transfer services operated under a section 19 permit;
- excursions or tours, except those that operate at least once a week for a period of at least six consecutive weeks;
- free services where travel on a vehicle is not dependent on a payment of separate fares, for example some supermarkets contract operators to provide a free service to bring customers to their stores. Provided no fares are charged and a passenger can travel on the vehicle without obligation it is likely that the service will not require to be registered.

S2 Use and disclosure of information

Bus open data is intended to be freely available, without charge and without restrictions on its use, so that it benefits passengers and supports technological innovation of services and applications, such as third party journey planners.

Bus operators and local transport authorities who provide and maintain the data must not place additional restrictions on its use or disclosure beyond any set by Scottish Ministers and must provide the legislated data openly and for free. Scottish Ministers similarly cannot set charges for data users to access that data.

Data users may include Local Transport Authorities, Regional Transport Partnerships and bus operators themselves as well as potential passengers. Bus operators may choose to incorporate the data into their own software and services to present passenger travel information in innovative ways to better inform their customers. Operators would be required to acknowledge that the data used originated from the Scottish Government (Transport Scotland) but would not be able to present their innovation as a 'Scottish Government' product, which might be considered misleading and could lead to confusion.

Data kept by the Scottish Government (Transport Scotland) will be kept in line with existing data retention policies. We intend to keep for reference all static and some real time information around services, to support analysing information about services in the past, in accordance with section 40 of the 2019 Act.

S3 The prescribed information

What should be included?

In order to ensure that the information to be provided under the new Regulations is beneficial to passengers, and potential passengers, we are seeking views on what bus users would like to know about bus services and why.

> ### Routes, stopping places, and timetable data.

The Traveline National Data Set already publishes route and timetable data for bus services in Scotland. However, that dataset is based on the requirements of bus registration and is not always detailed enough for use in journey planners.

We propose that the new Regulations will require operators provide, in a digital format, their timetable(s) with information provided at bus stop level, (using NaPTAN bus stop identification) and route data to be provided as a list of points that allow the route to be drawn with sufficient detail to follow the associated road geometry (as opposed to presuming a route between bus stops). This information needs to be provided initially and then must be kept up to date. By 'kept up to date' we mean that, as is the case in England, any change to timetables, routes etc must be made not less than two weeks prior to a change taking place, but even if no changes take place, a submission will be required at least once every 12 months.

We intend to ask for the following information:

- The trading name of the operator, their licence number and National Operator Code
- Route information including the service number/name, route registration number, each bus stop called at in order
- Timetable information including the arrival and departure time at each bus stop, the days it does and does not run.

> ### Fares and Ticket Data

Fares and ticket information is essential to the public in journey planning, as well as for making informed choices and comparing travel options between providers and modes. Fares information can be used to inform journey planners allowing passengers to make decisions in advance on the cost of their journey. Information on tickets helps to make passengers what potential tickets are on offer that could be used for their journey, and the scope of these tickets.

We recognise that some information about fares and tickets is straightforward, while some information will be more complex to provide, for example, where the price changes depending on factors such as when you get on the bus, or how many stops you pass. We therefore propose to classify fare and ticket information as either 'simple' or 'complex' and apply separate timescales for the initial submission of this information.

- Simple fare and ticket information would mean adult single and return fares and tickets, child single and return fares and tickets, group fares and tickets, period tickets, single operator fares and tickets, multi-operator fares and tickets, zonal fares and tickets, any age restrictions and any time restrictions on those fares and tickets.

- Complex fare and ticket information would mean fares that vary depending on the route taken, the duration of the journey, the type and the number of passengers, the method of payment, the amount of subsequent travel undertaken in a given period, and whether or not a discount or a cap is applied to the fare.

And for all tickets, the information we would require is as follows:

- For single and return tickets, the service(s) the ticket is valid on,
- For zonal tickets, the service numbers, routes and bus stops included in the range of the ticket,
- The ways that fares can be paid (cash, contactless, etc) by ticket type,
- The ticket medium (paper, smartcard, digital, tap on/off etc),
- The fares available and if they are different depending on how they are paid for or the ticket medium, and also;
- Which tickets can be bought in advance (and whether that can be done online, or in person) and which can only be purchased on a vehicle
- A 'user friendly' name for the ticket.

Real time information

Real time information has the power to significantly improve the journey experience of passengers with additional access needs, and will give passengers a greater level of assurance about the availability of services than assumed location information.

Real time information falls into two broad categories, 'Location Information', which means vehicle locations, live arrival and departure times from stopping places, live timetables and disruption updates, and 'Facilities and Accessibility Information', such as capacity, availability of Wi-Fi, power/charging capability, audio/visual capability.

Location Information

- o Live vehicle location
- o Live Bus stop arrival and departure times
- o Live timetables
- o Live disruption updates

Facilities and Accessibility Information

- o On-board capacity
- o On-board wheelchair space utilisation
- o On-board facilities – Wi-Fi
- o On-board facilities – power / charging
- o On-board facilities – toilets
- o On-board facilities – audio/visual capability
- o On-board facilities – payment methods
- o Emissions standard of the bus

Static data (For example, timetable and fares information) will be provided yearly, and must be updated two weeks ahead of any change to that information. This means that in the situation where there are no changes to an operator's routes, timetables or fares in a twelve month period, operators will only be required to submit the required information once.

Unlike static data, real time information needs to be updated on a continuous automated 'feed' basis, and we have assumed that this timescale should be measured in seconds or minutes, rather than months, weeks or years. We are aware that many operators are already fully equipped to provide location information and do so predominately using the 'SIRI' standard. We propose that the list of 'Location Information' above be provided as real time information in the new Regulations.

The facilities and accessibility information being sought is not something that is currently commonly captured on a real time (in use) basis. We appreciate that it may require time and investment in new systems to be able to provide this.

As a result, we are minded to phase in the requirement to provide facilities and accessibility real time information over time. This will start with a requirement, initially through guidance, to provide information about onboard facilities and accessibility information generally, moving towards to full real time (in use) information over time in Regulations.

Facilities and Accessibility Information

Stage One (Static) to be provided through Guidance

- What is the maximum capacity of the vehicle
- How many accessible spaces or other accessible features does the vehicle have
- Does the vehicle have Wi-Fi available
- Does the vehicle have power/charging facilities
- Does the vehicle have audio/visual facilities for announcing location and next stop?
- What payment methods are available on the vehicle
- What is the emission standard of the vehicle

Stage Two (Real Time) initially to be provided later through future legislation

- What is the maximum capacity of the vehicle, how close to capacity is the vehicle? (could be expressed as a percentage, a low/medium/high rating etc)
- How many accessible spaces does the vehicle have, and how many are currently in use?
- Does the vehicle have Wi-Fi available, and is it currently operational (working)?
- Does the vehicle have power/charging facilities and is it currently operational (working)?
- Does the vehicle have audio/visual facilities for announcing location and next stop? and is it currently operational (working)?
- What payment methods are available on the vehicle
- What is the emission standard of the vehicle, what is the carbon saving compared to driving between two stops?

Bus stop location and facilities data

Information about bus stops, the facilities available at bus stops and in particular features which enable access for a wide range of passengers, is held regionally, by local transport authorities. In England, there is a legal requirement for local transport authorities to provide this information to the Department for Transport, who hold the UK wide database of public transport access points. This database holds details about all of the places where you can get on or off public transport. In Scotland, this information is currently submitted voluntarily. We believe that the best option for

Scotland is to make submission of this information mandatory, as it is in England, and to provide it in the same format and to the same database that is used in the wider UK, rather than running a parallel database which only contains information for Scotland. This would require local transport authorities to provide the following information as is currently done on a voluntary basis.

- The location of the stop;
- The stop code or the nodes code taken from the National Public Transport Access Nodes database;
- The area code, from an established list of area codes for NaPTAN;
- The Ordnance Survey grid reference;
- Any relevant landmarks;
- A topographic reference taken from the National Public Transport Gazetteer;
- Details of stop accessibility features.

S4 Training, Compliance and Enforcement

Our aim for BOD is that the data is provided to the public in a consistently high standard. We recognise that these new Regulations will require many operators, local authorities, regional transport partnerships, and other actors in the travel data space, to adapt to new processes, train staff, and potentially invest in new software.

As such, Transport Scotland intend to work collaboratively with the industry to ensure that new Regulations can be complied with. We will support industry in understanding the new requirements, any new processes they introduce and any new roles and responsibilities.

While it will be possible for a third-party data aggregator to offer data publishing or support data activities, this would not alter the statutory responsibilities of individual parties.

There will be compliance requirements, for example about the amount, regularity or accuracy of the data provided. This could include monitoring of statistics, issues and quality of data published. An overall compliance score could also be made available to track trends if this would be useful.

S5 Timescales

We do not intend to bring all of the new requirements in as a single exercise, which would effectively require every bus operator and transport authority to be ready to provide the information from a single date. Instead, we intend to phase the new requirements over an agreed period. However, we are also aware that having the assurance of a specific date helps organisations in planning for a transition, as long as that date is firm and clearly known. We are therefore seeking your views on the proposed sequence of bringing forward the new Regulations, in order to formalise and communicate the dates by which each element will be required. This will inform the overall timetable, which will be subject to Parliamentary procedure

Timetable data

We expect the requirement to submit timetable data in the necessary standard will be the most achievable requirement before real time and fares information. This is because the data is less complex, and many operators are already using a single standard. This could be required as early as 12 months after the Regulations comes into force.

Fares & ticket data

We expect to introduce the requirement to publish fares and ticket data at a later point than route and timetable data to allow all companies to update their systems and to allow operators to upskill and prepare their business for the new processes. We believe that simple fares information should come after timetable information, followed later by complex fares information, with complex information becoming mandatory not more than 24 months after the Regulations come into force.

Real time data

Real time data is not currently mandated and therefore not all operators currently have real time facilities. Additionally in more rural areas there may be geographic limitations which restrict the systems that can be used. We propose that the requirement to submit this data could be aligned to the dates for complex fares data.

Bus stop data

Scottish Bus Open Data
Transport Scotland

We propose that local authorities will be required to undertake this duty from 6 months after the Regulations come into force. This is because many local authorities already have business processes in place for managing this data, but may need to review or adapt these processes in order to maintain high quality bus stop data.

Summary of proposed timescales

- April 2026, the BOD Regulations come into force, marking the start of mandatory open data duties,
- October 2026, or six months after coming into force, Local Authority requirement to keep NaPTAN up to date commences
- April 2027, or 12 months after coming into force, Bus operator requirement to submit timetable data in the required standard
- October 2027, or approximately 18 months after coming into force. Bus operator requirement to submit simple fares information
- April 2028, or 24 months after coming into force. Bus operator requirement to submit complex fares information and punctuality data in required standard and real time data in required standard

S6 Data standards

Types of data format which could be used as standard

There are a variety of different data standards that exist which are used to provide different types of travel data or to provide data in a particular way to a data processor for data consumers. Data formats are established standards for data exchange which individual organisations can follow to provide their data to another person. Some data formats are more commonly known by their acronym, for example the National Public Transport Access Nodes standard, a UK Government standard for bus stops, railway stations ferry ports, is commonly known as simply 'NaPTAN' Data.

Within bus service information, the most common standards in operation are TransXChange ("TXC") for timetables, Network Timetable Exchange format ("NeTEx") for fares, Service Interface for Real Time Information (SIRI) for real time data, and NaPTAN for bus stop information. There is no single data format, which currently exists that can provide timetable information, fares information, real time data and bus stop information. A detailed breakdown of the different standards available has been provided in a separate Appendix.

There are seven alternate data formats that can be used to provide information about the times of services and stopping places in addition to TransXChange. These are, ATCO CIF, JESS HASTUS, NeTEx, and SIRI. There is a single standard for bus stop location and facilities data, the NaPTAN data format. Fares information can be provided in NeTEx and GTFS standard, while real time location and real timetable information can be supplied via SIRI or GTFS. Real time onboard information about accessibility or capacity can use the SIRI standard.

While the intention is to prescribe the required standard in legislation, Transport Scotland also intends to keep the development of new and existing standards under review, and this may mean updating legislation to specify a different standard in the future, if that best serves the needs of passengers and operators.

Routes, stopping places, and timetables data

Route and timetable data for bus services in Scotland is already published openly through the Traveline National Data Set. However, that dataset is based on the requirements of bus registration and is not always detailed enough to use in journey planners. For example, bus operators are required to provide a proposed timetable

indicating proposed times at principal points on the route to register a service, while journey planning requires every bus stop on the route to be included.

We propose to require operators to provide in a digital format a timetable with information provided at bus stop level, and route data provided as a list of points, which allow the route to be drawn with sufficient detail to follow the associated road geometry (as opposed to presuming a route between bus stops).

Data submitted to Traveline Scotland is currently provided in a variety of formats (although most commonly TransXChange 2.1). As data is received in a number of formats it requires further processing by the Traveline Scotland open data hub system to enable them to provide the data in a consistent format. Additionally, legacy formats are still in use which do not include as many data fields as modern formats. This limits the quality of the data that can be provided, for example legacy formats often do not include accessibility information. In order to align with standards in England and Wales, it is likely that we would require the data in the TransXChange format. We propose that operators would fulfil their statutory requirement to provide open data by submitting their timetable data to the open data hub (Traveline Scotland) in the TransXChange format.

Fares and ticket data

As sharing fares information is not currently mandatory in Scotland, only certain operators currently share this information. The Traveline Scotland open data hub system also converts a small number of proprietary data formats from Electronic Ticket Machines to an in-house standard for use in the passenger information system. This is not an automated process, and while the fares data that is currently supplied is of good quality, it is not in a consistent format which creates inefficiency in data transformation. The Traveline Scotland open data hub is currently adopting NeTEx for fares data in Scotland and we expect from discussions with industry that operators will begin to voluntarily provide fares data in this standard, however will look to bring in a standard to ensure consistency.

With the introduction of the Bus Open Data Regulations, operators will soon have a statutory responsibility to make fares information available in an open format, in the open data hub. Third parties may assist operators with complying with this duty, but compliance will be the responsibility of operators.

We propose to require data to be submitted in the NeTEx standard. This would align with the DfT's approach, providing cross-border consistency. We also propose that fares information be phased in over time, with simple ticket information brought in first, followed by complex ticket information, in order to give bus operators a reasonable period to put the necessary systems in place.

Real time data

Real time information is needed for passengers to be updated on the live status of a bus service. This increases confidence of using public transport. Real time information is proposed to include information on vehicle locations, bus stop arrival and departure times, live timetables, and on-bus information including capacity and wheelchair space utilisation.

SIRI is the most common data standard currently used for Real Time Passenger Information systems in the UK. There are various types of SIRI data which deliver different real time information.

A mixture of Regional Transport Partnerships, local authorities and operators currently coordinate the real time information for bus operators in their areas and feed this to the Traveline Scotland open data hub. While coverage is increasing, real time information is not currently available for every bus service in Scotland. Additionally, quality issues can also arise when scheduled data used in the Traveline Scotland journey planner is different to the schedule data being reported by real-time systems. This can occur when changes to bus services take place at short notice.

There are two options for real time data to be provided in, based on current processes for those operators providing real time data. These are:

SIRI: SIRI data (specifically SIRI-SM, SIRI-VM, SIRI-ET and SIRI-SX) could be used to provide real-time arrivals, departures and timetables, vehicle positions, accessibility of the bus and emissions data and real time service alerts.

GTFS: Alternatively, GTFS Realtime could be used which contains trip updates, vehicle positions, and service alerts.

Having reviewed the two options, we understand that SIRI collects higher resolution data than GTFS, and allows for data to be converted into GTFS for use data consumers. We believe that real time data should be provided in the SIRI data standard to collect more raw data, and to align with English and Welsh standards.

Bus stop location and facilities data

Effective journey planning requires detailed information on the location and accessibility of bus stops. There is currently a single standard for this information, used by local authorities or a body appointed to undertake this function for them. This is known as the NaPTAN data format required for submitting information into the NaPTAN database (currently NaPTAN 2.5).

NaPTAN is the UK National Public Transport Access Nodes dataset. It describes the precise location of stops, stations and ports for all public transport modes. NaPTAN is the foundation of most scheduling and journey planning systems. NaPTAN works alongside a second dataset, the National Public Transport Gazetteer (NPTG) which is a topographic database of all cities, towns and settlements in the UK, providing a frame of reference for the NaPTAN database

Local authorities input and maintain this stop data for bus stops and stations. The DfT maintains other stop types centrally (Metro, ferry ports, rail stations etc). In Scotland, Local Authorities maintain this data, however some authorities have arrangements with other bodies, for example, SPT manages this data for the authorities within its boundaries. Traveline Scotland directly manages the NaPTAN for Western Isles and the Shetland Islands.

Because there is no statutory requirement to keep NaPTAN data up to date, it relies on the resourcing and prioritisation of the work at authority level, and therefore, quality across Scotland is variable.

It appears sensible to use the NaPTAN standard for bus stop data in Scotland. We therefore propose requiret on local authorities to maintain the data relevant to bus services in a format which supports the NaPTAN and NPTG datasets. In England, where this information is already mandatory, the data must be submitted in XML format, may not be a zipped file, and must be a file size of less than 128MB, however there are no restrictions on naming conventions

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