



Department
for Transport

Bus Services Act 2017: Consultation on Bus Open Data

Moving Britain Ahead



June 2018

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Foreword

- 1 Bus services are key to communities, connecting people with places – the offices they work in, the schools where they learn, and the shops where they spend their money. Today in 2018, over sixty percent of public transport journeys are on buses, yet the information available to passengers when planning their trip, waiting at bus stops, or travelling to their destination varies considerably across the country.
- 2 I believe that transport should work for everyone, however, ensuring that passengers have the information they need is key to making this a reality. As such, today I am launching two public consultations with a single aim – to provide passengers with the information they need when travelling by bus.
- 3 For some of us the information we need is already at our fingertips, enabling us to plan journeys, to know how much they will cost, and even to track whether the bus is running on time. But this is not a consistent passenger experience replicated across the entirety of the country. In this Bus Open Data consultation document we describe the steps we plan to take to achieve our vision of a transport system where every passenger in England has the times, fares and real-time information necessary to reach their destination.
- 4 Research conducted by Transport Focus, the independent passenger watchdog, has found a strong desire amongst bus passengers for more centralised sources of information about bus times, routes and fares. The latest Bus Passenger Survey (2017) results highlight information about routes as a priority for improvement and information on board being a key differentiator of a good journey from a great journey. In the 2016 Bus Passenger Survey, analysis illustrated that passenger satisfaction with information on the bus rises from 60% to 79% when there are next stop displays on buses.
- 5 Since 2000 Traveline has provided an impartial and comprehensive journey planning service, delivered through regional partnerships between local authorities and transport operators. However, the data on which its services are based continues to be collated predominantly from paper-based registration documents, making it vulnerable to inaccuracies. Whilst a national data set for route and timetable information exists, this is not the case for fares or real time information; and whilst mobile applications are now widely available, they are predominantly focused on services of a particular operator or authority.
- 6 The development of a comprehensive open data set for the bus industry which includes accurate information about routes, fares and timings will allow application developers to innovate and develop products that passengers need and use. The benefits for passengers are evident in London where public transport users can easily plan journeys, secure best value tickets and travel with certainty due to regular updates about their bus service.
- 7 I want to replicate this passenger experience across England, providing better and open data to improve passengers' journeys, to remove uncertainty when planning

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trips and waiting at stops, and to attract more people to services with a view to growing the overall bus market.

- 8 In this consultation, beginning today, I am seeking your views on our proposals for using the Open Data powers in the Bus Services Act 2017 to require the provision of information about bus routes, timetables, fares, tickets and the operation of services, to open up this data and enhance the passenger experience through the provision of better information. This is your opportunity to inform the further development of the Bus Open Data policy and the Regulations, to ensure that they deliver information which empowers passengers to make the journeys they want to.

Executive summary

Introduction

- 1 This document sets out the options and our proposed approach to requiring the provision of bus open data for buses operating in England (outside London) that will make it easier for bus passengers to access timetables, routes, fares, tickets, real time information and the actual location of bus services.
- 2 We are seeking your views on how best to deliver this step change in data availability whilst preserving the provenance and integrity of the data and also ensuring the highest quality and its timeliness of provision. The Department wishes to ensure that these requirements will be sufficiently ambitious and forward thinking delivering the right outcomes for passengers, whilst being achievable given processes, systems and standards already in place and or available in the market.
- 3 Collectively, bus operators, local transport authorities and data aggregators already deliver a significant amount of route, timetable and real-time information. A free national open dataset on routes and timetables is available through the Traveline National Data Set (TNDS). Real-time data is also available via Traveline and the NextBuses Application Programming Interface for some local authorities and bus operators, but not all.
- 4 Responsibility for providing data, even the established routes and timetables, is often far from clear and relies to a large part on organisational good will. For fares and ticketing data, the lack of an agreed data standard is a barrier to publishing as well as operators reporting lack of access to software to create such data. For real time information, many operators have Automatic Vehicle Location (AVL) equipment on board buses, but this does not always equate to meaningful real time information.
- 5 Our aim is for routes and timetables, fares and tickets, and real time information to be published as close to source as possible with a clear set of obligations placed primarily on operators and local transport authorities. The route to publishing data should be simplified, the provenance and integrity of the data should be preserved and the data should be able to be used by the technology sector to create end products and services that benefit passengers.
- 6 The Department for Transport (DfT) sees its role as one of placing requirements on operators to open up data, developing standards to facilitate data publishing, creating a central repository or index to reference data and supporting operators to digitally upskill. We want all operators to be able to publish the required data digitally; and we want passengers to be able to effectively plan their journeys, identify and purchase best value tickets and travel knowing their bus arrival and journey times, taking the uncertainty out of bus travel.

How to respond

The consultation period began on 05 July 2018 and will run until 16 September 2018. Please ensure that your response reaches us before the closing date. If you would like further copies of this consultation document, it can be found at <https://www.gov.uk/dft#consultations> or you can contact caitriona.moore@dft.gov.uk if you need alternative formats (Braille, audio CD, etc).

Please send consultation responses to:

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When responding, please state whether you are responding as an individual or representing the views of an organisation. If responding on behalf of a larger organisation, please make it clear who the organisation represents and, where applicable, how the views of members were assembled.

There will be consultation events on the following dates:

10 July - Leeds
12 July - Milton Keynes
17 July - Birmingham
19 July - Bristol

If you would be interested in attending these events, please contact amy.evans@odileeds.org.

Freedom of Information

Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the Freedom of Information Act 2000 (FOIA) or the Environmental Information Regulations 2004.

If you want information that you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence.

In view of this it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information, we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department.

The Department will process your personal data in accordance with the Data Protection Act (DPA) and in the majority of circumstances this will mean that your personal data will not be disclosed to third parties.

1. Provision of information about English Bus Services

What we want to achieve

- 1.1 The Bus Services Act which received Royal Assent during April 2017, provided powers for the Secretary of State to legislate to require the provision of information about bus routes, stopping places, timetables, fares, tickets and the operation of services. Our overall ambition is to improve the information available to bus passengers, making it easier for them to make informed travel decisions based on complete, accurate and timely data.
- 1.2 We will do this by placing information obligations on operators and local transport authorities. The information to be provided by bus operators may include routes and timetables as well as fares and tickets. Both local authorities and bus operators will be required to provide real time information (live and disruption data). Local transport authorities obligations will also cover the maintenance of the National Public Transport Access Node (NaPTAN) database, a database that covers all of the points of access to public transport across England (the obligation would apply to bus stop data only).
- 1.3 Alongside creating these obligations, we intend to develop standards to facilitate data publishing; create a central repository or index to reference data; and support operators to digitally upskill. Once the data is open, the technology sector will be able to create end user applications and digital products or services. Bus operators will also, if they wish, be able to provide websites and apps as well as on-board signage and displays and local transport authorities will be able to provide real time signage and displays at bus stations and stops if budgets permit.
- 1.4 This document sets out the options and our proposed approach to the provision of bus open data so that it is easier for passengers to use. The Department wishes to ensure that the new legislative requirements will be sufficiently ambitious and forward thinking, whilst being achievable given processes, systems and standards already in place and or available in the market.

Current situation

- 1.5 Collectively, bus operators and local transport authorities already deliver a significant amount of route, timetable and real-time information, by collaborating to meet passengers' information requirements.
- 1.6 A free national open dataset, the Traveline National Dataset, on routes and timetables is currently available, enabled by Traveline Information Ltd - a wholly

owned, not-for-profit, subsidiary of the Confederation of Passenger Transport (CPT), the main trade association for the bus and coach industry.

- 1.7 For fares and tickets information, currently there is no requirement for operators to publish fare information, a lack of an agreed national data standard for the release of fares and tickets information and commercial reticence for some operators to publish this data. Therefore there is no national dataset on fares and tickets, although individual bus operators or local transport authorities may publish this information on their websites. ¹
- 1.8 For location data, DfT offers a financial incentive for operators who have Automatic Vehicle Location (AVL) equipment on board their buses through the Bus Service Operators Grant. But this does not necessarily equate to comprehensive real-time information (RTI), as a back office system is needed to process the Global Positioning System (GPS) data and release it in a format that passengers can understand. Some local authorities (up to 40) have invested in back office systems to provide real time information but not all. Traveline Information Ltd also provides real-time information and schedule data through its NextBus system, but this aggregation service is only available for local authorities generating real time information.
- 1.9 Information about bus stops or stopping places is currently published as a national dataset, called the National Public Transport Access Node (NaPTAN) dataset at <https://data.gov.uk/> for use by local authorities, bus operators and data users. It is currently maintained on a voluntary basis by local authorities and consequently there is some variability across England as regards the maintenance of NaPTAN data.
- 1.10 Punctuality data is currently gathered by bus operators but is not currently open. The Bus Services Act contains provisions to require bus operators to open up data on punctuality and performance of their bus services. Currently DfT encourages operators to share this information with local transport authorities under data sharing agreements so that it can be used to identify local issues which they can then work together to address.
- 1.11 Collaboration between local transport authorities and operators is evident in some areas but not all, with some areas providing bureau services to operators in their area offering access to both software and skills that they may not otherwise be able to access. The Traveline National Dataset for example is mainly reliant on information operators are statutorily required to provide through predominantly paper-based bus registration applications. The level of information provided for registration is often not detailed enough for journey planning purposes and so is both augmented and assured by local transport authorities on a voluntary basis before being fed into the Traveline National Dataset.
- 1.12 In a digital era, this approach to open data and the lack of accessible, accurate and timely data is out of step with other sectors. This approach means that at present, data is often patchy and inconsistent. Even when it is available, no single organisation is responsible for providing a comprehensive view of bus services, with roles and responsibilities split between bus operators, local authorities and data aggregators. It often relies to a large part on organisational good will which can create variability in the type and standard of data available across England.

¹ Google have developed the GTFS format - the General Transit Feed Specification - a common format for exchanging public transportation schedules and can handle fares data

1.13 It is our ambition to:

- develop a bus open data system that creates clear roles and responsibilities for the provision of data for bus operators, local transport authorities and data aggregators;
- create a consistent set of standards for the provision of accurate bus open data with operators supported to meet requirements and incentivised to ultimately choose digital rather than analogue processes;
- make it easier for bus passengers to make informed travel decisions based on complete, accurate and timely data regardless of where in England they are or which bus operator they use.

Consultation proposals

1.14 In putting forward the options and approaches set out in this consultation document we have adopted the following key principles:

- Establishing clearer responsibility for data ownership and publishing
- Delivering greater efficiencies to the industry where possible
- Adopting digital by default methods where appropriate
- Driving outcomes that ensure the data is used to benefit passengers

1.15 We propose to make Regulations requiring the provision of open data by all operators of local bus services across England outside London. To be compliant, an operator will need to provide routes and timetables, fares and tickets as well as real time information.

1.16 The Regulations should be implemented by all operators of local bus services, regardless of size, and the primary legislation does not include any exemption making powers. However it is important that the requirements can be implemented in a proportionate and fair manner, balancing passenger benefits with the need to maintain services and minimise negative impacts for smaller operators. Therefore a phased implementation approach is proposed.

- Route and timetable information by end of 2019.
- Basic fare and ticket information by end of 2020.
- Real time information by end of 2020.
- Complex fare and ticket information by end of 2022.

1.17 The Department for Transport will require that information is provided using existing recognised standards, where appropriate. Route and timetable information will be required to be provided using the TransXchange format and real time information will be required in the Siri SM format.

1.18 Where an agreed data standard is not available, the Department for Transport will create and provide new standards. So for fare and ticket information, the Department for Transport has commissioned the development of a UK NeTEx profile which will be the format that fares and ticket information will be required to be provided in.

- 1.19 The requirements will be placed primarily upon operators to provide the data - so for route and timetable data and fares and ticket data, operators will be responsible for provision. However for real time information, we propose that whilst operators should be responsible for generating and providing automatic vehicle location data, the requirement to transform this into meaningful real time information for passengers and provide this to the Bus Open Data portal will sit with the local transport authorities.
- 1.20 The Department for Transport will build a Bus Open Data portal to enable operators and local transport authorities to easily provide their data and for data users, such as app developers, to find and use data to provide applications, products and services for passengers. In addition to these requirements, it is our intention that guidance will provide greater detail on how operators can meet them through the solutions they choose, and how they can ensure more generally that information meets the needs of passengers.
- 1.21 The consultation is based on the information being provided through a distributed model. The consultation seeks views on this approach before looking at each data requirement in turn: route and timetable; fares and tickets and real time information before seeking views on the broader bus open data ecosystem for example tools and training as well as compliance and enforcement.
- 1.22 We are seeking your views on how best to deliver a step change in data availability, ensuring the highest quality, timeliness and integrity of data and transforming the way bus passengers travel. Responses to the consultation will help to inform how the new approach will work in practice and shape and determine the details of the secondary legislation needed to support the agreed processes and procedures.

2. Distributed Data Model

Introduction

- 2.1 The Bus Services Act provides powers for DfT to require the provision of information about buses, including routes and timetables, fares and tickets and real time information. This information may be required to be provided to a specified person, namely the Secretary of State, an English local transport authority or another relevant person. The provisions also cover timing and manner/form including if the information is to be provided electronically.
- 2.2 During late 2017, the Department for Transport commissioned a project to consider options for an open data platform for the bus industry. The options ranged from a fully centralised model, to ensure ease of access to the data by ensuring all of the data is in one place, to a fully distributed model where the information is made available on individual operators or local transport authorities' websites.
- 2.3 The fully centralised model has been applied successfully in the rail industry, where the DARWIN² system makes it easier to ensure everyone is complying with rules around ensuring data is provided in a timely manner, in the right format and to the right standard. However delivery of a centralised model is resource intensive, unlikely to suit the needs of smaller operators and fundamentally challenging for such a large and fragmented industry with numerous operators in comparison to the rail industry.
- 2.4 A distributed model on the other hand enables the publication of data at source helping to protect the provenance and integrity of the data. A distributed model offers a degree of flexibility which is vital for an industry so large and fragmented with numerous operators and varying levels of digital maturity. The more flexible approach of a distributed model also means that it places less of an implementation burden on smaller operators. However depending on how a distributed model is implemented, quality assurance and compliance/enforcement activities may be harder to deliver due to the lack of central ownership of these processes.

Preferred option for a Bus Open Data platform

- 2.5 Following a period of extensive engagement with the bus operator, local authority and data aggregator community, DfT has concluded it should support the bus industry to move towards a distributed model (but not a fully distributed model), where data is published as close to the source as possible, thus simplifying the data supply chain and preserving the provenance and integrity of the data.
- 2.6 The key drivers for deciding upon a distributed publishing model include that the bus industry is host to a large number of operators in comparison to the rail

² DARWIN is the open data platform hosted by Rail Delivery Group to enable the rail industry to open up its operations data.
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industries more limited groups of train operating companies (TOCs) and therefore central co-ordination would be challenging and not necessarily the best use of public resources.

- 2.7 Other drivers include that whilst some parts of the bus industry are lacking in digital maturity, particularly smaller-medium sized operators, this is an industry that is both willing and able to collaborate with DfT to achieve the right outcomes for passengers and the industry. Therefore a more flexible approach is believed to be more appropriate for the bus sector.
- 2.8 At the heart of the distributed model, operators or their agents (however statutory responsible will remain with the operator) will be responsible for publishing their own data, placing responsibility for the provenance and integrity of data with the operators themselves. The model brings the potential to allow any data users to access it without the need for an intermediary. This model should encourage direct publishing functionality from established transport data management systems, minimising effort for operators and removing unnecessary layers in the data publishing cycle.
- 2.9 During a transitional period, local transport authorities may choose to offer regional data publishing bureaus for example in areas where franchising is opted for, where a bureau approach exists already, for example Norfolk County Council, or in new areas where smaller operators will require additional support and access to publishing tools. The decision to offer a bureau type service will be a decision for local transport authorities and operators will not be obliged to use any bureau type service.
- 2.10 Data aggregators may also, where applicable, play a role during a transitional period, either providing tools and training or providing services to bus operators to enable publishing of data at source to a central Bus Open Data portal. Data aggregators may include existing not for profit organisations and/or private sector entities as well as new entrants to the market if there is sufficient demand.
- 2.11 Over time, as the quality of the data sources improve and operators adapt to new processes, invest in new systems (where required) and create new digital capabilities, data aggregators and/or intermediaries will be able to move away from traditional data aggregation³ and re-distribution services⁴. Instead data aggregators will focus on value added propositions for example creating end user and/or multimodal service applications that help passengers realise benefits from open data.

³ Data aggregation is a process in which, for the purposes of this document, transport data is collated and presented in a summary form such as a national dataset.

⁴ Data re distribution is the process of moving data from one database or site to another for the purposes of meeting business, market or industry needs.

Conceptual data flow – To-Be, Distributed model

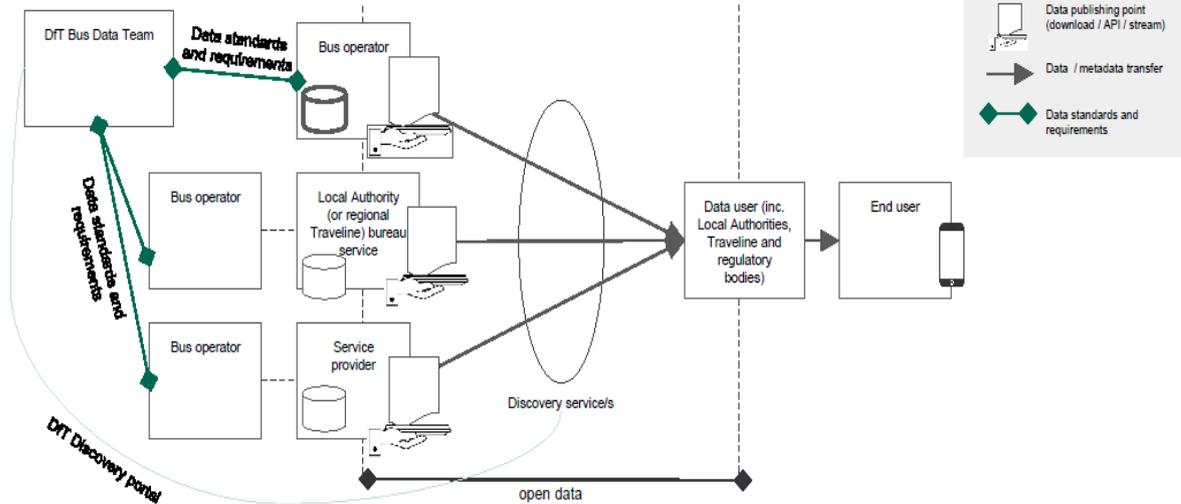


Figure 1: Bus Open Data - Future (To Be) Distributed Model

- 2.12 An often cited example of a distributed publishing model that has been successfully implemented, is the OpenActiv platform implemented across the leisure industry and hosting open data for providers of leisure and sporting facilities. Similarly to the bus industry, the leisure industry is quite fragmented with a considerably large number of providers, one preferred pre-existing aggregator and a limited number of software applications being used by the industry. Consequently, once Government had decided to regulate for provision of this data, a distributed model with central co-ordination by Government (Sport England and DCMS) was opted for.
- 2.13 Transport for London (TfL) has also opted for a distributed model to open up its data sources for the transport network across London. Whilst initially a fully distributed model with no central source to reference data was slow to take off, the later addition of the London Datastore portal has ensured that TfL's open data programme is an often cited success story with over 11000 data users⁵ of the data and 600 applications created.
- 2.14 To enable a distributed model, the Department for Transport will build a Bus Open Data portal to make each of the individual operators' information sources discoverable via indexed links to dynamic URLs and/or data feeds, which will be opted for over static data files as this meets the requirement to ensure data is up to date and accurate. The provision of a portal ensures that application developers can find all required information in one central place, using consistent formats and standards with transparency about the status and quality of data publishing.
- 2.15 For data publishers, including bus operators, local authorities and data aggregators, DfT can offer initiatives and provide solutions or tools to complement the distributed publishing model, such as digital publishing tools for operators. Such software and tools could be hosted or referenced on the Bus Open Data portal. Other support for publishers hosted on the portal could include process maps, how to guides and a publisher forum where data publishers can ask questions, resolve issues and share knowledge.

⁵ A data user is someone who uses the data that has been opened up for the purposes of creating an application, product or service for end users or passengers.

	Publishing model choice	Similarities	Differences
Open Active	Distributed, with central coordination (Open Active, sponsored by Sport England).	<ul style="list-style-type: none"> Fragmented data sources and publisher space . Small number of established software applications used in the sector. Government wants to support development (Sport England, DMCS) Pre-existing aggregator (Imin). 	<ul style="list-style-type: none"> Industry sector.
Open Darwin	Centralised, strictly controlled by RDG.	<ul style="list-style-type: none"> UK transport sector . Data model (timetables, RTI...). Data literacy and skills challenge. 	<ul style="list-style-type: none"> Much smaller set of operators. Pre-existing coordinating body. Established data sharing infrastructure. Easier to coordinate Weaker threat from innovation.
Open Banking	Federated, controlled through the Open Banking consortium, overseen by the Competition and Markets Authority (CMA).	<ul style="list-style-type: none"> Data sharing drive triggered by law / regulation. Substantial difference in size between the larger and the smaller operators. Publishing data on products, previously viewed as commercially sensitive. 	<ul style="list-style-type: none"> Industry sector. Extra complication due to security and personal data management. More profitable industry.

Figure 2: Open Data Exemplars and Bus Open Data Comparison Table ⁶

- 2.16 An example of this may include a free to access cloud based software package that small to medium sized operators, who possibly cannot afford to invest in a transport data management system, can access from their own or a public computer. This would allow operators to create the required ⁷TransXchange and/or NeTEx⁸ files.
- 2.17 The Bus Open Data portal could offer data users' metadata describing them (e.g. URL, modality of access, detailed licensing). This will help data users more easily locate the data they require. The Government Digital Service recently ran a discovery project to understand user needs for Data.Gov.UK, the UK Governments website for sharing open data. The results illustrated that quite often individuals searching the site for open data are not proficient data publishers and so a user friendly and easy to navigate front end is key for this group. Developer and open data user forums could also be hosted on the portal, again linking users to one another and allowing opportunities to ask questions, resolve issues and share knowledge.
- 2.18 As well as bespoke front ends for different user groups and support tools for users, other functionality that may be included as part of the Bus Open Data portal includes automated validation checks to assess quality of the data published. Dashboard functions may also be provided to offer at-a-glance updates on publishing status and quality.
- 2.19 It is proposed that we will start development of the Bus Open Data portal during Summer 2018 with a test site ready for piloting during Spring 2019 and full roll out to a live service during Autumn/Winter 2019 coincide with the proposed commencement date for the provision of routes and timetables data.

⁶ RDG refers to the Rail Delivery Group

⁷ TransXChange is the UK nationwide standard for exchanging bus schedules and related data, used primarily for bus service registration and creation of journey planning information

⁸ NeTEx is Europe wide multimodal data standard created for the purposes of sharing and exchanging public transport schedules including route, fares and real time information.

The route map

The Government aims for bus open data legislation to be in place by the end of 2020. The current timeline is set out below.



20 Bus Open Data

Figure 3: Implementation timetable for Bus Open Data

Consultation Questions

BOD01: Do you support a distributed data publishing model? Please explain your response?

BOD02: What benefits do you perceive a distributed data publishing model could bring for passengers?

BOD03: What impact would the implementation of a distributed data publishing model have upon:

- Larger bus operators
- Small to medium sized operators
- Local transport authorities
- Data aggregators
- Passengers

BOD04: A distributed data publishing model brings with it a requirement for bus operators to host their own data files. What impact would this have upon you/your business?

BOD05: What features or functionality would help a) data users and b) data publishers to use the Bus Open Data portal?

3. Route and timetable information

Introduction

- 3.1 Currently, an 'open' national dataset of route and timetable information already exists in the form of the Traveline National Dataset (TNDS) that is provided by Traveline Information Limited (TIL), a wholly not-for-profit subsidiary of the Confederation of Passenger Transport (the main trade association for the bus and coach industry). The TNDS is produced through a circuitous route.
- 3.2 An operator wishing to run a local bus service in England must register it with the Traffic Commissioner in advance, including providing them with basic route and timetable information. A copy of the application for registration must be sent by the operator to the relevant local authorities for their information at least 28 days in advance of sending the registration application to the Office for the Traffic Commissioner. The same requirements also apply when an operator wishes to vary or cancel a service.⁹
- 3.3 The local authorities then use this basic information to create an enhanced dataset which includes all timings points and additional data such as connections and public holidays. This is then shared with the Traveline (regions) to populate their regional journey planning websites and create a national dataset (central TIL). It should be noted that the local authority work is voluntary. Use of the TNDS is subject to agreeing to the open government licence (OGL) aimed at preserving the provenance and integrity of the data.
- 3.4 The Bus Services Act includes provisions for regulations to require bus operators to provide information about their routes and timetables. We have considered how best to achieve open data for routes and timetables with options ranging from using the Electronic Bus Service Registration system to building an entirely new system for the provision of data.

Preferred option for the provision of route and timetable data

- 3.5 Our overall ambition is that all operators of local bus services across England (outside of London) provide all route and timetable data, including all stops and details of whether the service operates throughout the year (e.g. during school holidays).
- 3.6 We have therefore concluded that the best approach is to decouple bus open data and bus service registration. This is because there is low uptake of the current Electronic Bus Service Registration system, with only 27% of registrations taking place electronically. Greater uptake of Electronic Bus Service Registration has the potential to be more efficient for both the Government and operators, as well as

⁹ Public Service Vehicles (Registration of Local Services) (Amendment) Regulations 2018, S.I. No. 439
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creating a robust data stream. However, re-aligning incentives to drive greater use of Electronic Bus Service Registration is a significant task in its own right and would have the potential to delay the introduction of a comprehensive bus open dataset.

- 3.7 We have therefore decided that bus service registration could continue as it is now and would be separate from the requirement to publish data. We will consider the scope for greater uptake of Electronic Bus Service Registration once we have made progress on open data and will seek to ensure that there are synergies between the two systems wherever possible.
- 3.8 In the short term, as registration and open data have two different objectives, we propose that the two systems are developed separately. Routes and timetables data can be opened up through a distributed model, with bus operators creating a TransXchange file (an industry standard format used to exchange data) for the purposes of journey planning using software which either belongs to the operator, or has been provided by local transport authorities or by data aggregators.
- 3.9 The bus operator would be responsible for making the TransXchange file for each service available by providing URLs to the required files on the Bus Open Data portal. It should be noted that this information would not be used by the Traffic Commissioner for the purposes of compliance and enforcement. The types of information that would need to be provided via the TransXchange file include:
- Routes, maps and timetables
 - Where the service starts and terminates
 - A list of all the intermediate stops
 - Information to ensure appropriate identification of all stops (NaPTAN)
 - Timing points for all stops
 - What days and times the service runs
 - The frequency the service runs
 - A route map showing the roads to be used
- 3.10 Data would be published using the current TransXchange data standard, which is owned by DfT. The Department would clarify the final version of the schema to be used by operators and which data fields are mandatory. Data requirements will be phased in, in stages, by the end of 2019, to coincide with the development of the Bus Open Data portal which is scheduled to go live during Autumn/Winter 2019.
- 3.11 It is worth noting however that TransXchange only has the capability to record route and timetable data. The Department for Transport is currently developing a UK profile for NeTEx (more information is provided on NeTEx in section 4), a data standard that can read fares and tickets data, real time information as well as routes and timetables information. The immediate driver for this is the need for an agreed data standard for the publishing of fares and tickets data. It is however our long term ambition to transition to the NeTEx standard for routes and timetables data which could be achieved in future years by amending legislation.

Consultation Questions

BOD06: For operators, do you currently provide route and timetable data digitally? If you do, how do you do this?

BOD07: If the answer to the above question is no, what are the barriers that prevent you from providing route and timetable data digitally?

BOD08: For smaller and medium sized operators, what impact would the proposed requirements to create provide route and timetable (using the TransXchange format) have upon your business?

BOD09: What tools or support would assist your business to meet the requirements?

BOD10: What data do you think would need to be mandatory in the TransXchange file schema for it to be useful to passengers for the purposes of journey planning?

4. Fares and ticketing

Introduction

- 4.1 Often the fare to be paid on a bus is only known by the passenger at the point of boarding the bus. Having no or limited access to information about fares in advance before making a journey is one of the issues which deters people from using buses.
- 4.2 Cited from the report, 'Using the bus: what young people think' published by Transport Focus in 2018¹⁰, one passenger explained how lack of fare information creates uncertainty which can act as a deterrent to using the bus:
“You don’t really know how much it will cost until you get on the bus, there is nothing to tell you how much it will be.” Essex, 14-16 years
- 4.3 Transport Focus’ report on bus passenger views on value for money (October 2013) found a strong desire for more centralised sources of fares information and that passengers identified lack of fares information at the bus stop as a key expectation not being met. Readily available fares data would improve the passenger experience by helping passengers plan their journeys and find the best price by allowing fares data to be included in websites and mobile apps.
- 4.4 Publicly available fares information is limited and often difficult to locate. Outside London, fares and ticketing is very complex with operators having a variety of fares/tickets available. Currently in the UK there is no agreed standard for publishing fares and tickets information.
- 4.5 In addition, there is no requirement in the registration process to provide information about fares. However there is a requirement¹¹ for every vehicle, when it is being used in service, to display or have available on request a fare table containing sufficient information to enable any passenger to ascertain the fare for their journey.
- 4.6 Some operators have previously been reluctant to release data voluntarily about fares, citing issues of commercial confidentiality. However today’s consumers expect to be able to make informed choices based on easily available data mainly through websites or apps on smartphones.
- 4.7 Some operators and local transport authorities have recognised this and bus fare information can be found on some individual operators’ and authorities websites. Similarly a number of operators and local transport authorities already have journey planning and real-time apps available with fares data on their websites. Traveline Information Limited is developing a pilot for fares data on its national website by getting the data through voluntary bilateral agreements with operators.

¹⁰ Using the Bus: What Young People Think, Transport Focus 2018

¹¹ Regulation 13(2)(a) of the Public Service Vehicles (Registration of Local Services) Regulations 1986

Preferred option for the provision of fares and tickets data

- 4.8 The Bus Services Act (2017) allows regulations to be made requiring that bus operators must make available fares and ticketing information to a specified person or entity, who will then in turn ensure this data is open to third parties wishing to use the data. Given the current context, asking operators to release this data is unlikely to achieve 100% availability and the data is unlikely to be in a standardised format.
- 4.9 Fares can range from very simple, as for example in London where there is a simple flat fare for anyone on the whole bus network or very complex as is the case for most areas in the deregulated market. Complex fares, for example are ones that depend on the route taken, time of travel, length of travel, the type and number of users, time of purchase, method of purchase, amount of other travel made in a given period and payment method.
- 4.10 Currently there is no set standard in the UK that is used to describe these very complex fares. NeTEx (Network Timetable Exchange) is a European Standard for exchanging multimodal public transport data and is capable of representing fares for all modes of transport. In order to deliver the overall ambition of having all fares information published by 2020 the Department will fund and develop a UK profile for NeTEx.
- 4.11 We envisage a two part implementation stage: The initial provision of limited fares and ticket data, with all fares and ticket data (all fare variations and ticket types) indexed by bus operators using a single standard and discoverable in the Bus Open Data portal by the end of 2022. For phase one, by the end of 2020, DfT would require bus operators to provide fares information on a limited number of fare and ticket types, for example adult single/return, child single/return, period or season tickets, single or multi-operator tickets and zonal fares. This would benefit passengers by providing information on the most common fare types until we put standards in place that will allow operators to provide all of their fare information.
- 4.12 All operators would need to make all fares and ticket data, including complex tickets such as village fares, available via the Bus Open Data portal by the end of 2022. The full data set might also include elements such as age and time restrictions. It is intended that the full UK NeTEx profile will be developed by mid 2019 and so allowing 18 months for initial implementation ensures operators have ample time to upskill staff, upgrade systems and adopt the newly agreed standard for the publishing of fares and tickets information.

Consultation Questions

BOD11: What types of fares and ticket information would be the most beneficial for passengers? e.g. singles and returns or multi operator etc.

BOD12: Do you provide fare information currently? If yes, what fare information do you provide and how (format)?

BOD13: If you answered no to the above question, what currently prevents you from providing fare and ticket information for passengers?

BOD14: What impact would the need to provide fares data from 2020, have upon your business?

BOD15: What implementation approach would assist you to meet the requirements?

5. Real time information

Introduction

- 5.1 Section 18 of the Bus Services Act seeks, through regulation, to deliver a single central 'gateway' for journey planning data. This includes an obligation on bus operators to make available Real Time Information about their buses to the Bus Open Data portal in a standard format. This represents a longer term ambition to see 100% availability of real time information for all local buses in England for the benefit of all passengers
- 5.2 Real-time information, broadly defined, means any information available about the current status of buses, including latest known locations and predicted arrival times at bus stops. Most real time information relies on automatic vehicle location (AVL) and Global Positioning Systems (GPS) in order to provide the physical location, which is then contextualised within a back office system using additional data sources (e.g. routes and timetables) to estimate arrival times at stops for passengers.
- 5.3 Passengers access real time arrival (and in some instances departure) information through dynamic signs at bus stops and stations, or through the internet at home or on smartphones. As smartphones have become more prevalent, they have made access to third-party applications increasingly desirable for passengers.

Preferred option for the provision of real time information

- 5.4 Real time information (live and disruption data) provides passengers with live status updates of planned and unplanned disruptions or diversions to a route. This type of information allows passengers to quickly assess if they need to take another route to their destination.
- 5.5 There is currently no statutory requirement to equip a bus with Automatic Vehicle Location (AVL) equipment or to have the necessary back office systems to make real-time data available to passengers. The Department does however provide a financial incentive through the Bus Service Operators Grant (BSOG) for operators who have equipped their buses with Automatic Vehicle Location (AVL) equipment. This incentive has been deemed effective, with recent figures illustrating that 97% of buses in England have AVL equipment on board now.
- 5.6 However this does not necessarily equate to comprehensive real-time information (RTI), as a back office system is needed to process the Global Positioning System (GPS) data and release it in a format that can be read and easily understood by passengers. As BSOG may in the future be reviewed, in particular how it is used to incentivise industry behaviour and achieve policy outcomes, it is possible that the

financial incentive, in future, could be given to only those operators who have both AVL equipment and are also making the data openly available to third parties.

- 5.7 As local transport authorities have been keen to provide real time information for bus passengers, in many areas, local transport authorities set up real time information systems to process the GPS information and often release it in the Siri Stop Monitoring (SM) format to ensure that passengers are able to understand and benefit from this data. Currently approximately forty local transport authorities offer such a service - an often cited barrier to provision are the setup and maintenance costs for the required back office systems however next generation ticket machines are providing new methods for the creation of real time information and helping to bring down costs.
- 5.8 The Standard Interface for Real-time Information (SIRI) is a European technical standard for exchanging information about the planned, current or projected performance of real-time public transport operations between different computer systems. This is the current technical standard used in the UK to provide real-time departure information from stopping places.
- 5.9 SIRI is available in a number of formats and can also be used to provide status messages about the operation of services, particularly useful to passengers when there are disruptions to a service. Many systems however provide data in Siri-SM format which delivers the next departures from the requested bus stop.
- 5.10 The outputs of RTI systems are currently fed into regional systems and many are also made available to TraveLine nationally and application developers, through the Next Bus App and the Next Bus API respectively. This means that there are a significant number of operators who currently rely on local authority owned, operated and funded systems (approximately 40 local authorities or more).
- 5.11 Those operators in possession of the required back office system, who generate their own real time information, will need to ensure that it is made available in a timely manner to the Bus Open Data portal, for example through an Application Programming Interface (API)¹² or live data feed¹³. In the short term there should be only limited impacts for bus operators— mainly where an operator does not currently provide real time information to the Siri SM data standard, as there will be a need to ensure data is provided to the agreed standard.
- 5.12 All bus operators will be required to open up their location data for local transport authorities who will be required to transform the location data into meaningful real time information that can be used and understood by bus passengers in the relevant local authority area.
- 5.13 We propose that the local authorities provide either an application programming interface or live data feed for their real time information to the Bus Open Data portal. In the short to medium term there should be very little impact on local authorities already providing real time information as the vast majority of real time information systems owned and managed by local transport authorities already generate the Siri SM format. However those local transport authorities not yet providing real time

¹² An Application Programming Interface or API is a software intermediary that allows two applications or systems to talk to one another and share data.

¹³ Data User: A data user is a person or organisation that takes open data and uses it to create applications, products or services for consumption by end users or passengers.

information for bus passengers in their area will be impacted by the need to implement the required systems to provide such data.

- 5.14 Local authorities subcontracting the provision of real time information and/or purchasing required back office systems for the provision of real time information, may also need to specify in terms and conditions, as part of the procurement/contracting process, the requirement to open up real time information and publish feeds in the Bus Open Data portal.
- 5.15 Whilst this wouldn't be regulated for, it would be an option for local transport authorities however this would be a matter between the authority and subcontractor. Consequently if the subcontractor failed to supply the data to the Bus Open Data Portal or did not supply it in the correct format, it would be the Local Transport Authority who would be in breach of their statutory duty.
- 5.16 It is proposed that these requirements will be phased in and operators or where applicable local authorities will be required to provide this location data and ensure it is discoverable on the Bus Open Data Portal by the end of 2020.

Consultation Questions

BOD16: What information do you think would be more useful for passengers - the location of the bus (on a map) or how far away the bus is from the bus stop (minutes)?

BOD17: What would be your preferred method for the provision of real time information for bus passengers? Please explain your response.

BOD18: What are the barriers currently preventing local transport authorities or bus operators providing a real time information service to bus passengers?

BOD19: What impact would the need to provide real time information, by 2020, have upon:

- a) Larger bus operators
- b) Small to medium sized operators
- c) Local transport authorities
- d) Data aggregators
- e) Passengers

BOD20: What do you think are the benefits of real time information provision for bus passengers?

6. Information about the operation of the service

Introduction

- 6.1 The Bus Services Act contains provision to require operators to publish information about the operation of service. This includes the provision of historic punctuality data, illustrating to passengers the performance of their local bus services.
- 6.2 It is our ambition to ensure that the Bus Open Data portal is able to reference and index other types of information, for example accessibility data which does currently exist (for stops and stations) on Data.Gov.UK.¹⁴ As part of the consultation, we will be interested to hear your views about whether additional types of data might also be useful to include either as part of the regulations where possible or alternatively as part of guidance encouraging bus operators and local transport authorities to include additional types of data on a voluntary basis.
- 6.3 Transport Focus' research '[How Late is Late – what passengers think about punctuality and timetables](#)'¹⁵ explored passengers' needs for punctuality data. It indicated that some passengers would be interested in seeing headline punctuality and reliability figures and that they were most interested in route specific punctuality data, although they thought the data would be most relevant to regulators.
- 6.4 Whilst the Bus Services Act does enable information on the punctuality of services to be provided, we are instead proposing to legislate for the provision of real time information as this will provide the most benefit to users and prospective users of local bus services. But we are interested to know whether respondents to the consultation believe punctuality data should also be provided and, if so, how this information should be disclosed.
- 6.5 There is already a positive duty on operators to co-operate with the Traffic Commissioners (as set out in the Senior Traffic Commissioner Statutory document number 14 on local bus services)¹⁶ enabling the Traffic Commissioners to obtain punctuality information however currently this information is not published.

Options for provision of information about the operation of services

¹⁴ The UK Governments website hosting Government open data sets, for example NaPTAN data.

¹⁵ 'How Late is Late - what passengers think about punctuality and timetables' Transport Focus

¹⁶ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/485029/14-local-bus-services.pdf

- 6.6 Whilst the Bus Services Act does contain provision to require information on the punctuality of services to be provided, we are instead proposing to legislate for the provision of real time information as this will provide the most benefit to users and prospective users of local bus services.
- 6.7 Real time information may be particularly important in urban areas, where regular services are more readily available and passengers are more interested in knowing when to expect their next bus rather than whether it will arrive on time.
- 6.8 Nevertheless, although punctuality information may not be the correct measure for urban areas it may be appropriate to publish punctuality information for rural areas where services are less frequent but focusing on headway time¹⁷ for urban areas.

Consultation Questions

BOD21: Do you agree that the focus should be on real time information (how far away the bus is) rather than punctuality information (whether the bus arrived on time)? Please explain your reasons.

BOD22: What are your views about the publication of punctuality information? Please explain your response.

BOD23: What other types of information do you think should be included in the Bus Open Data portal? (e.g. vehicle attributes, accessibility). Please explain your response

¹⁷ Headway is a measurement of the distance or time between vehicles in a transit system
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7. Information about bus stops

Introduction

- 7.1 Combining the data provided under the open data provisions into meaningful bus journey planning outputs requires the ability to uniquely and accurately describe and locate all bus stops in a common format. Information about bus stops is currently maintained by local authorities voluntarily in two open data sets.
- 7.2 Primarily information about bus stops is currently published as a national dataset, called the National Public Transport Access Node (NaPTAN) dataset at <https://data.gov.uk/> for use by Local Authorities and/or bus operators. The NaPTAN dataset is a GB system for uniquely identifying all points of access to public transport, including bus stops as well as railway stations, coach stations, ferry terminals, airports and taxi ranks.
- 7.3 The second dataset is 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 outlined above. Both datasets are owned by the Department for Transport, but the maintenance of the datasets is completed by local transport authorities on a voluntary basis.
- 7.4 This information is fundamental to all other information requirements and therefore it is important that it is maintained in an appropriate and timely manner. The Bus Services Act (2017) contains powers to require information about bus stops, changes to bus stops or proposed changes to be supplied directly to either the Secretary of State, a local transport authority or the open data platform.

Preferred option for the maintenance of NaPTAN information

- 7.5 Bus stops and routes can change on a frequent basis, therefore it is essential that this information is updated regularly. Without accurate, up to date bus stop information the value of the data subsequently produced is greatly diminished, resulting in loss of passenger trust in the information supplied. Both datasets are fundamental to all open data requirements.
- 7.6 As bus stops and bus stations are owned and maintained by local authorities, we are proposing to place a statutory requirement to maintain the NaPTAN and NPTG datasets on local authorities, for bus data only. We propose that a requirement should be placed upon local transport authorities to provide a link to both the NaPTAN and NPTG datasets on the Bus Open Data portal.
- 7.7 When local transport authorities present this information directly to end users, the date of the data should also be provided to replicate functionality that would otherwise be provided on the Bus Open Data portal and ensure data users can be confident their data is up to date and accurate.

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Consultation Questions

BOD24: Do you agree that a statutory requirement should be placed upon local transport authorities to maintain the NaPTAN and NPTG datasets? Please explain your reasons.

BOD25: What are the current reasons for local transport authorities not maintaining NaPTAN data?

8. Tools and Training

Introduction

- 8.1 Bus operators currently only have a statutory duty to provide a limited amount of data on the bus services they wish to run – the route shown graphically on a map and the timings of the services at the principle timing points. Principle timing points are bus stops that a vehicle tries to reach at a scheduled time and where a vehicle is not supposed to pass until the scheduled time has arrived.
- 8.2 This data is submitted by the operator to the Traffic Commissioner in order to register (and sometimes alter) a service that it wishes to run. The data submission format can be paper based or electronic. The operator does not have to provide all stop timetable data, fares data or make available real time information; although a small number of operators already do all of the aforementioned.
- 8.3 To meet the requirements set out in this consultation, operators and local authorities providing municipal bus services will need to invest in and/or arrange access to appropriate software to generate the data files and also create digital and data capabilities within their organisations.
- 8.4 The cost of meeting these requirements will vary by operator, depending on current position; whether they already have some software capability and can generate some digital data; and available employees and their skills.

Options for the provision of tools and training

- 8.5 We want all bus operators to be able to develop a sufficient level of digital maturity and capability within their organisations to digitally publish data as required by the draft Bus Open Data regulations. Whilst there won't be a specific requirement in the regulations for the Department for Transport to support the bus industry to comply, we recognise that the sector may need support in overcoming the barriers – actual or perceived – to publishing and using open data and we will consider how we can provide practical support.

Guidance

- 8.6 We will develop guidance to help operators to understand the new legal requirement, including their? role in supporting passengers, the duties of operators, and sources of additional help. It is proposed the guidance will be published at the same time as the Bus Open Data Regulations are being laid in Parliament in February 2019.
- 8.7 , the guidance is not statutory in nature and so its role will be to inform and encourage rather than to require, and its content will reflect this.

Tools

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- 8.8 This could include DfT developing basic data processing and publishing software tools and making them available to anyone in the sector to use. Many modern open data initiatives include the provision of software, e.g. basic publishing applications in Open Active, or sample code and data demonstrating the standards in [Open Banking](#).
- 8.9 Any software produced would follow the Government Digital Service (GDS) [guidelines](#) (including user needs, assisted digital offering and other guidelines) and be open source. It could be run either as a stand-alone application or as a software library or extension to the established software applications.

Training

- 8.10 Simple, accessible training could help address the digital literacy and skills challenges in the sector. It could be provided through e-learning modules or classroom-based activity, which we anticipate would be led by the industry.
- 8.11 The DfT could however foster the development of a developer community – as the Rail Delivery Group has done around rail data – for data users to share knowledge and experience. This can help with solving problems and driving innovations also.

Consultation Questions

BOD26: What topics and content would you like to see included in the guidance? Please explain your answer, providing examples of potential content where appropriate.

BOD27: What tools and training would you require to enable you/your organisation to publish data digitally? Please explain your response.

BOD28: What are the barriers to you/your organisation accessing these tools and training independently?

9. Use and Disclosure of Information

Introduction

- 9.1 It is our aim that data made available as part of the proposals in this consultation will be made freely available and without restrictions on its use. This will ensure that it benefits passengers, by enabling the creation of useful end products, services and applications.

Options for Use and Disclosure of information

- 9.2 The Bus Services Act provides powers to address the use and disclosure of the information which we require to be published. It says that the information gathered from bus operators and local transport authorities will be supplied to the Secretary of State
- 9.3 According to the Bus Services Act, bus operators and local transport authorities who provide and maintain the data are not allowed to place additional restrictions on its use or disclosure beyond any set by the Government for the whole bus open data programme and must include it in the Bus Open Data portal for free. It is also proposed that the Secretary of State as the creator of the Bus Open Data portal will not set charges for data users to access data contained in the portal.
- 9.4 Operators and local transport authorities can choose to employ an agent i.e. a data aggregator that processes and facilitates their data being provided to the Bus Open Data portal. Whilst this wouldn't be regulated for, it would be an option for bus operators however this would be a matter between the bus operator and contracted agent. Consequently if the agent failed to supply the data to the Bus Open Data Portal or did not supply it in the correct format, it would be the bus operator who would be in breach of their statutory duty.
- 9.5 The Government wants to ensure that third parties or data users can access the information described in this consultation to aid them in developing and creating new innovative journey planning applications and tools for passengers consumption. Therefore we intend to make all journey planning information public.
- 9.6 Data users will incorporate it into their own software and services to present passenger travel information in innovative ways. However, to prevent the information being used for other purposes (for example to assess profitability of a route), the Government intends to restrict the information so that it can only be disclosed for the purpose of making information about relevant local bus services available to users of those services.

- 9.7 The free provision of the data from the Bus Open Data portal does not grant data users any right to use the information in a way that suggests any official status (e.g. they cannot brand their app as a Government App or DfT App) or that the data provider endorses the data user or their use of the Information. Data users will be required to acknowledge the source of the data used in their product or application.

Consultation Questions

BOD29: Do you agree that the prescribed information should only be disclosed for the purposes of making information about local bus services available to bus passengers? Please explain your response.

BOD30: Who do you think should be responsible for enforcement if a developer were to misuse an operators data? Please explain your response.

10. Quality Assurance

Introduction

- 10.1 It is our aim that operators, when providing data, provide data that is of high quality including that it is accurate, be provided in a timely manner, be provided in the required format and to the required standard(s).
- 10.2 Currently, primarily for routes and timetable data, bus operators will provide this information in a paper and pencil format with local transport authorities conducting some quality assurance activities and also augmenting the data.
- 10.3 In recommending a distributed publishing model and publication of data as close to source as possible, the Department for Transport is repositioning the responsibility of data assurance with the bus operators and ultimately making bus operators accountable for the task of providing high quality, up to date and accurate bus open data.

Options for ensuring quality assurance of data provided

- 10.4 At the heart of the distributed model, operators will be responsible for publishing their own data, placing responsibility for the provenance and integrity of data with the operators themselves. Therefore operators will be required to consider mechanisms to conduct data assurance activities.
- 10.5 It is proposed, for route and timetable or for fares and tickets, that the operator must put any new data or changes into the required file format and onto the Bus Open Data portal at least two weeks before the change to the route or fare becomes effective.
- 10.6 During a phasing period, local transport authorities may choose to offer regional data publishing bureaus which may include support with data assurance activities however the decision to offer a bureau type service will be a decision for local transport authorities.
- 10.7 Data aggregators may also, where applicable, play a role during a phasing period, supporting operators to provide data which may include data assurance activities required by the operator.
- 10.8 As part of the specification for the Bus Open Data portal, the appointed supplier will be asked to consider how validation checks for data could be built into the functionality of the portal. An issues log could also be included as part of the dashboard functionality with notifications issued to the operator, should data quality issues be identified once the data has been provided.

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Consultation Questions

BOD31: For operators, how do you currently quality assure bus data? Please explain your response.

BOD32: If you do not currently quality assure data, what prevents you from doing so? Please explain your response.

BOD33: In the future, how do you think bus open data should be quality assured? Please explain your response.

11. Compliance and enforcement

Introduction

- 11.1 It is our aim that data required by operators to be made available to enable creation of journey planning applications and ultimately benefit passengers should be made available in a timely manner, be free to access, be provided in the required format, to the required standard(s) and be accurate.
- 11.2 The Department for Transport would like to work collaboratively with operators to support operators during the phasing period and provide a safe space for operators to adapt, meet their requirements and ultimately comply with the regulations. However we do realise that in some circumstances enforcement action may be required.

Options for encouraging compliance and enforcement

- 11.3 As well as requiring and supporting the industry to make data available (using tools and training as outlined in section 8), the Department recognises the need to incentivise the industry to publish good quality data, by sharing publically information that illustrates how bus operators are performing in opening up their data. Publishing information about available data can incentivise operators to publish better data and encourage digital change in the bus industry, while raising awareness regarding the available bus data.
- 11.4 We intend to encourage the publication of accurate data by communicating information about the amount and accuracy of data available via the Bus Open Data Portal. The Bus Open Data portal is a work in progress however options for displaying performance data include creating a dashboard to indicate publishing status, issues and quality of data published. A score to compare operators could also potentially be created and published by DfT.
- 11.5 Other potential mechanisms to encourage compliance include using the Bus Services Operators Grant (BSOG) to incentivise operators to comply with the regulations in full or elements of the regulations, for example provision of real time information. BSOG could be used to incentivise operators to provide accurate, timely and comprehensive information.
- 11.6 Our preferred approach would always be to support the industry to upskill and incentivise the industry to meet its requirements. The Department for Transport will consider as part of the broader Bus Open Data programme exactly what types of support could be made available to assist operators to comply with the regulations. Another option to be considered is whether DVSA inspectors could, as part of their

duties, work with operators to help address issues and support operators during a transitional period.

- 11.7 The Department for Transport does however recognise that in some circumstances, enforcement action may be required to ensure operators meet their requirements. Enforcement will remain with the Traffic Commissioners and failure to comply with these regulations will be dealt with by fines and by the permanent or temporary removal of the operator's licence¹⁸.

Consultation Questions

BOD34: What approaches would you like to see the Department for Transport use to monitor and encourage compliance and ensure all operators are providing required data digitally?

BOD35: What support processes should be in place to assist operators who are struggling to meet the requirements?

¹⁸ Using existing Traffic Commissioner powers under section 155 of the Transport Act 2000
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Glossary of Terms

Application Programming Interface (API): An API is a software intermediary that allows two applications or systems to talk to one another and share data.

Bus Open Data Regulations: The regulations which we intend to make under section 141A of the Transport Act 2000 which is inserted by section 18 of the Bus Services Act (2017) in order to require the provision of information by operators and to provide related exemptions.

Bus: Except where indicated, refers to a bus providing a local bus service.

Data Aggregator: Data aggregation is a process in which, for the purposes of this document, transport data is collated and presented in a summary form such as national dataset.

Data Feed: This refers to a mechanism for data users to receive updated data from data sources. It is commonly used by real time applications.

Data re distribution is the process of moving data from one database or site to another for the purposes of meeting business, market or industry needs.

Data User: A data user is a person or organisation that takes open data and uses it to create applications, products or services for consumption by end users or passengers.

Diversion: A section of route which is not part of the scheduled route registered with the Traffic Commissioner or a local authority.

End User: An end user is a passenger or consumer of open data through applications, products or services offered by data users, usually for the purposes of journey planning (in this document).

Local Service: A local service refers to 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.

Metadata: Metadata is a set of data that describes and gives information about other data and can be used for the purposes of discovery and identification.

NaPTAN: National Public Transport Access Node dataset which is a GB system for uniquely identifying all points of access to public transport, including bus stops as well as railway stations, coach stations, ferry terminals, airports and taxi ranks.

NeTEx: The multimodal data standard that can be used to transmit bus information including routes and timetables, fares and tickets and real time information.

Open Data: Data that is accessible in a machine readable format and can be used by those who need it to create digital applications, products and services.

Operator: An operator is a person or organisation who runs local bus services.

Public Service Vehicle (PSV): This refers to a bus or coach used by members of the public to travel to and from places on a particular route or in a catchment area.

Siri: Standard Interface for Real-time Information (SIRI) is a European technical standard for exchanging information about the planned, current or projected performance of real-time public transport operations between different computer systems

Static File: A static file refers to any content that can be delivered to end users without being generated, modified or processed by a data user e.g. images, PDF documents.

Stop or stopping place: A location at which a service is scheduled to call.

TransXchange is the UK nationwide standard for exchanging bus schedules and related data, used primarily for bus service registration and creation of journey planning information

URL: URL refers to Uniform Resource Locator and is used to specify addresses on the World Wide Web.

What will happen next?

Consultation Response

The responses from the consultation will be analysed by DfT officials to identify key findings and themes. A summary of responses, including the next steps, will be published within three months of the consultation closing on the GOV.UK website. Paper copies and accessible formats will also be available upon request.

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Further background information can be found on GOV.UK

Annex A: Impact assessment

- A.1 We have added further detail and analysis associated with this policy to the original Impact Assessment which set out the impacts of the Bus Services Bill proposal.
- A.2 The updated Impact Assessment has been published on the GOV.UK website at the following address:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/558392/the-bus-services-bill-impact-assessments.pdf

Annex B: Full list of consultation questions

BOD01: Do you support a distributed data publishing model? Please explain your response?

BOD02: What benefits do you perceive a distributed data publishing model could bring for passengers?

BOD03: What impact would the implementation of a distributed data publishing model have upon:

- a) Larger bus operators**
- b) Small to medium sized operators**
- c) Local transport authorities**
- d) Data aggregators**
- e) Passengers**

BOD04: A distributed data publishing model brings with it a requirement for bus operators to host their own data files. What impact would this have upon you/your business?

BOD05: What features or functionality would help a) data users and b) data publishers to use the Bus Open Data portal?

BOD06: For operators, do you currently provide route and timetable data digitally? If you do, how do you do this?

BOD07: If the answer to the above question is no, what are the barriers that prevent you from providing route and timetable data digitally?

BOD08: For smaller and medium sized operators, what impact would the proposed requirements to create provide route and timetable (using the TransXchange format) have upon your business?

BOD09: What tools or support would assist your business to meet the requirements?

BOD10: What data do you think would need to be mandatory in the TransXchange file schema for it to be useful to passengers for the purposes of journey planning?

BOD11: What types of fares and ticket information would be the most beneficial for passengers? e.g. singles and returns or multi operator etc.

BOD12: Do you provide fare information currently? If yes, what fare information do you provide and how (format)?

BOD13: If you answered no to the above question, what currently prevents you from providing fare and ticket information for passengers?

BOD14: What impact would the need to provide fares data from 2020, have upon your business?

BOD15: What implementation approach would assist you to meet the requirements?

BOD16: What information do you think would be more useful for passengers - the location of the bus (on a map) or how far away the bus is from the bus stop (minutes)?

BOD17: What would be your preferred method for the provision of real time information for bus passengers? Please explain your response.

BOD18: What are the barriers currently preventing local transport authorities or bus operators providing a real time information service to bus passengers?

BOD19: What impact would the need to provide real time information, by 2020, have upon:

- a) Larger bus operators
- b) Small to medium sized operators
- c) Local transport authorities
- d) Data aggregators
- e) Passengers

BOD20: What do you think are the benefits of real time information provision for bus passengers?

BOD21: Do you agree that the focus should be on real time information (how far away the bus is) rather than punctuality information (whether the bus arrived on time)? Please explain your reasons.

BOD22: What other types of information do you think should be included in the Bus Open Data portal? (for example vehicle attributes, accessibility). Please explain your response

BOD24: Do you agree that a statutory requirement should be placed upon local transport authorities to maintain the NaPTAN and NPTG datasets? Please explain your reasons.

BOD25: What are the current reasons for local transport authorities not maintaining NaPTAN data?

BOD26: What topics and content would you like to see included in the guidance? Please explain your answer, providing examples of potential content where appropriate.

BOD27: What tools and training would you require to enable you/your organisation to publish data digitally? Please explain your response.

BOD28: What are the barriers to you/your organisation accessing these tools and training independently?

BOD29: Do you agree that the prescribed information should only be disclosed for the purposes of making information about local bus services available to bus passengers? Please explain your response.

BOD30: Who do you think should be responsible for enforcement if a developer were to misuse an operators data? Please explain your response.

BOD31: For operators, how do you currently quality assure bus data? Please explain your response.

BOD32: If you do not currently quality assure data, what prevents you from doing so? Please explain your response.

BOD33: In the future, how do you think bus open data should be quality assured? Please explain your response.

BOD34: What approaches would you like to see the Department for Transport use to monitor and encourage compliance and ensure all operators are providing required data digitally?

BOD35: What support processes should be in place to assist operators who are struggling to meet the requirements?

Annex C: Consultation principles

The consultation is being conducted in line with the Government's key consultation principles which are listed below. Further information is available at

<https://www.gov.uk/government/publications/consultation-principles-guidance>

If you have any comments about the consultation process please contact:

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Email consultation@dft.gsi.gov.uk