



London Buses Standard Network Data for 3rd Parties



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0. DOCUMENT CONTROL

0.1 Author(s)

Technical Services Group, London Buses

0.2 Document Summary

This document describes the London Buses standard network data that will be made available to the general public. It describes the data and also some important concepts and idiosyncrasies to help ensure proper interpretation of the data.

0.3 Document History

Version	Date	Changes since previous issue
01	23 rd June 2010	First draft
02	29 th June 2010	Internal Review
03	30 th June 2010	Issued
04	11 th October 2011	Updated to include new Bus Stop Code and NaPTAN ATCO codes

0.4 Reference Documents

[1] NPTG and NaPTAN Schema Guide. v2.4

URL: <http://www.dft.gov.uk/naptan/> - checked on 11th October 2011

0.5 Distribution

0.6 Document Quality Assurance

Step	Step Description	Undertaken by	Date	Remarks
01	Quality Review			
02	Project Manager Review			
03	Executive Review			
	User Review Group (Optional)			
	QA Team Review (Optional)			



1. INTRODUCTION

This document describes the static data released by London Buses as part of the TfL Developers Area. This document aims to explain the data sets.

This document is organised as follows. Section 2 provides a data dictionary of the various data sets. Section 3 discusses bus stops. Importantly it describes “virtual bus stops” which in most cases should be filtered out when presenting data to passengers. Section 4 provides some supplementary information on the validity of the file.

The terminology used is that used within London Buses. This terminology may differ from international and national standards such as Transmodel and TransXChange.

2. DATA DICTIONARY

This section describes the contents of the two comma separated value, CSV, text files provided. Data is provided in this format rather than other formats such as XML due to its ease of use. For example, CSV files can easily be loaded into Excel. The data type is provided to allow people to construct databases to store this data.

2.1 Bus Stop data

The bus stop data is stored in a CSV file called “bus_stops_yyyymmdd.txt”. The columns in the file are described in Table 1.

Name	Type	Description
stop_code_LBSL	Char	*** KEY FIELD *** This is the alphanumeric identifier of a bus stop used by LBSL.
bus_stop_code	Number	This is the bus stop code used by the public to identify the bus stop. It is used to identify the bus stop in the Countdown II applications on mobile phone and web. This field relates to the NaPTAN NaptanCode without the area code. The area code for London is “1”. As an example, the bus stop code for Southwark Station heading northbound is: 77293. The NaPTAN NaptanCode for this stop is therefore 177293. See section 3.5.3.1 of reference [1]. See also Appendix 1.
naptan_atco	Char	This is the unique national identifier of the bus stop – i.e. the NaPTAN AtcoCode as defined in the DfT NaPTAN data model. See section 3.5.2 of reference [1].
stop_name	Char	This is the name of the bus stop that appears on the flag.
location_easting	Number	This is the location of the bus stop in the x-direction



		expressed in Ordnance Survey Eastings. OS Eastings are the number of metres east of the Isles of Scilly.
location_northing	Number	This is the location of the bus stop in the y-direction expressed in Ordnance Survey Northings. OS Northings are the number of metres north of the Isles of Scilly.
heading	Number	Direction the bus is travelling in when it arrives at the bus-stop. This is expressed from 0° to 359°.
stop_area	Char	This is the LBSL transit node. Bus stops in the same vicinity are grouped into the same transit node.
virtual_bus_stop	Number	Flag to indicate whether there is a physical bus stop flag at the location or whether the bus stop is a “virtual bus stop”: 0 = real bus stop 1 = virtual bus stop From a passenger perspective Virtual bus stops do not exist and should be filtered out. They are only used to model items within the TfL bus network

Table 1 – data dictionary for the bus stop data file

The Key field is:

- stop_code_LBSL

2.2 Stop sequence data

A stop sequence represents the sequence of bus stops that are visited by a bus on a route. Stop-sequences in a given direction are grouped together by a “run”.

The data is stored in a CSV file called “stop_sequences_yyyymmdd.txt”. The columns in the file are described in Table 2.

Name	Type	Description
route	Char	This is the route number that is displayed on the front of the bus and on any publicity advertising the route.
run	Number	The Run number, is a single digit that identifies the direction of the service on the route. All odd Run numbers identify services in one direction, and even in the other. Most routes have run 1: meaning out, and run 2: meaning return or back. Routes that have split destinations may have run numbers 3 and 4 to serve individual destinations.
sequence	Number	Indicates the position of a bus stop within a sequence.
stop_code_LBSL	Char	This is the alphanumeric identifier of a bus stop used by LBSL.
bus_stop_code		This is the bus stop code used by the public to identify the bus stop. It is used to identify the bus stop in the Countdown II applications on mobile phone and web. This field relates to the NaPTAN NaptanCode without



		the area code. The area code for London is “1”. As an example, the bus stop code for Southwark Station heading northbound is: 77293. The NaPTAN NaptanCode for this stop is therefore 177293. See section 3.5.3.1 of reference [1]. See also Appendix 1.
naptan_atco		This is the unique national identifier of the bus stop – i.e. the NaPTAN AtcoCode as defined in the DfT NaPTAN data model. See section 3.5.2 of reference [1].
stop_name	Char	This is the name of the bus stop that appears on the flag.
location_easting	Number	This is the location of the bus stop in the x-direction expressed in Ordnance Survey Eastings. OS Eastings are the number of metres East of the Isles of Scilly.
location_northing	Number	This is the location of the bus stop in the y-direction expressed in Ordnance Survey Northings. OS Northings are the number of metres North of the Isles of Scilly.
heading	Number	Direction the bus is travelling in when it arrives at the bus-stop. This is expressed from 0° to 359°.
virtual_bus_stop	Number	Flag to indicate whether there is a physical bus stop flag at the location or whether the bus stop is a “virtual bus stop”: 0 = real bus stop 1 = virtual bus stop From a passenger perspective Virtual bus stops do not exist and should be filtered out they are only used to model items within the TfL bus network

Table 2 – data dictionary for the stop sequence data file

The key field is the combination of:

- route
- run
- sequence

3. VIRTUAL BUS STOPS

We have consciously left the “virtual bus stops” in the stop sequence data as they do allow a better indication of what roads are served by the bus route. This is particularly useful in hail-and-ride sections where there are no fixed bus stops.

The important thing to note is there is NO physical bus stop at these “virtual bus stops”. Therefore it is necessary to remove these bus stops in all customer facing applications – otherwise passengers may be directed to a bus stop which does not physically exist. LBSL would expect users of our data to remove virtual bus stops when displaying bus stop locations to passengers.



4. OTHER ASPECTS

Other aspects that developers and other users of the data should note are:

- **Network is constantly changing:** The London Buses network changes frequently. Bus stops are moved, stop-sequences are changes, routes are added or withdrawn. Developers should therefore refresh the data frequently. London Buses suggests that if this data is presented to end users then the date of the data is also provided. The date is presented in the file name – i.e. the `yyyymmdd` part. For example “`bus_stops_20100623`” would be bus stop data on the 23rd June 2010.
- **Data format might change:** London Buses do not guarantee to keep the format of the CSV files constant. However if the format does change London Buses will update the documentation.

5. APPENDIX 1: BUS STOP CODE PLATE

As described above each bus stop has a unique bus stop code. By the end of October 2011 a plate will have been placed above the timetable at every stop displaying the code for that stop. This is shown in Figure 1. In this example the number ‘11234’ is the bus stop code. The number 87287 is the phone number to send the request to.



Figure 1 – bus stop code plate