# Passenger flows within stations Data description

Version control

|  |  |  |
| --- | --- | --- |
| **Version** | **Date** | **Changes** |
| v1.0 | 09 Sept 16 | Document created |
| v1.1 | 22 May 17 | Update to ‘Data currency’ |

This document provides descriptions for two related datasets pertaining to the movement of passengers within London Underground (LU) stations.

Description of datasets

|  | Station Passenger Link Flows | Station Nodes Description |
| --- | --- | --- |
| Description of dataset | This dataset describes movements between individual nodes within each LU station, as defined by the *Station Nodes Description* dataset. Data is provided for every 15 minute time period between 0500 and 0200 (following day). | This dataset describes the nodes referred to in the*Station Passenger Link Flows* dataset.  Nodes are categorised as:   * **Entrance** – a node providing entry to the station * **Exit** – a node providing exit from the station * **Platform** – a node from which train services operate. |
| Origin of dataset | The data set is created by TfL and forms part of the annual Rolling Origin and Destination Survey (RODS).  RODS is an ongoing programme to capture information about journeys on the LU network. Data is reconciled to the annual passenger counts as well as summary statistics from the Underground Users Survey. The RODS data is also reconciled to Oyster Origin and Destination flows for stations that have sufficient information. | |
| Data currency | The data set reflects surveys and other supporting data collected and processed on an annual basis. | |
| Data coverage and geographic description | The data includes passenger flows within every station on the LU network. | The data describes the nodes referred to in the*Station Passenger Link Flows* dataset.  Each node is defined by a unique identifier.  Nodes are one of:   * Entrance * Exit * Platform   + - by line     - by line direction     - by platform type     - by platform direction     - by destination (where multiple destinations for a direction exist) |
| Data lifecycle | The data is updated annually and follows a process of survey and data collection completed late in the calendar year, a period of analysis and collation and followed by a publication early in the following calendar year. | |
| Data quality | The data reflects November counts and represents the number of people travelling on a typical (or average) weekday. Therefore, year-on-year RODS fluctuations do not necessarily reflect whole-year annual demand changes. The data is adjusted to remove any abnormal circumstances that may affect demand such as industrial action or long-term closures. | |
| Data ontology | Entrances align to access points to the LU network (i.e. a ticket hall) rather than physical entrances from street level.  Exits are grouped as one entity regardless of the number of physical ticket halls or physical exits to street level. | |
| Data ownership | The data is owned by Transport for London | |
| Data model | The data model for each dataset is described in the section below. | |

Data models

Station Passenger Link Flows data model

|  |  |  |
| --- | --- | --- |
| Data Field | Data type | Data Description |
| Start\_Node | Integer | The start node of the passenger flow.  Reference to Station Nodes Description file. |
| End\_Node | Integer | The end node of the passenger flow.  Reference to Station Nodes Description file. |
| Station | Text | Name of LU station for which passenger flow is described. |
| NLC | Integer | National Location Code – unique number allocated to every railway station in Great Britain. |
| NAPTAN | Alphanumeric | National Public Transport Access Node reference – UK standard for describing points of access to public transport.  NAPTAN is provided in stop area level format, i.e. 940GZZLU(xxx). |
| 0500-0515 | Integer | Time period in 15 minute increments from 0500 to 0200 (following day).  Field describes total number of passengers moving between the associated Start\_Node and End\_Node for the given station. |
| 0515-0530…n | Integer | Time period in 15 minute increments from 0500 to 0200 (following day).  Field describes total number of passengers moving between the associated Start\_Node and End\_Node for the given station. |

Station Nodes Description data model

| Data Field | Data type | Data Description |
| --- | --- | --- |
| Node | Integer | Unique reference for each node described within dataset. |
| Station | Text | Name of LU station for which node is within. |
| Node\_Type | Text | Type of node. One of either:   * Entrance – a node representing location from which access to train services can be made. This does not represent the physical entrance from street level to station. A station may have multiple entrances if, for example, multiple ticket halls or access points exist in distinct physical locations. * Exit – a node describing location providing exit from station. Exits are grouped as one entity such that each station has only one Exit node, regardless of the number of physical ticket halls / exit locations. * Platform – a node representing location from which LU train services and, where applicable non-LU train services operate. |
| Line\_Direction | Text | Direction of travel of a line. Line direction is binary, in that for each line (in its entirety) there are only two possible, opposing directions\*. One of either:   * EB – eastbound * NB – northbound * SB – southbound * WB – westbound * IR – inner rail (anti-clockwise on Circle Line) * OR – outer rail (clockwise on Circle Line) * Unknown – Only applicable to a subsection of non-LU lines accessible from LU stations, where survey data captured movement towards the service but not on the specific platform. Therefore distinct direction of passenger travel from the non-LU service remains unknown.   \*NB: the circular section of the Circle line has *Line\_Direction* options IR/OR, as defined above, whereas the 2009 Circle line extension section to Hammersmith Underground Station has *Line\_Direction* options EB/WB. |
| Platform\_ Direction | Text | Cardinal point-based direction of travel from a platform, representing the direction physically observed/described when on the platform/in the station. One of either:   * EB – eastbound * NB – northbound * SB – southbound * WB – westbound * Unknown – Only applicable to a subsection of non-LU lines accessible from LU stations, where survey data captured movement towards the service but not on the specific platform. Therefore distinct direction of passenger travel from the non-LU service remains unknown.   NB: *Line\_Direction* does not always align with *Platform\_Direction*. For example, whilst part of the Circle line’s *Line\_Direction* is represented as IR or OR, the *Platform\_Direction* observed on actual platforms is largely EB or WB. |
| Line | Text | For LU Platforms, one of either:   * Bakerloo * Central * Circle * District * Hammersmith & City * Jubilee * Metropolitan * Northern * Piccadilly * Victoria * Waterloo & City   For non-LU Platforms, one of either:   * DLR (Docklands Light Railway) * LO (London Overground) * NR (National Rail) * TFLR (TfL Rail) |
| Platform\_Type | Text | For all Platform node types, one of either:   * DLR Only – only DLR services use the platform * LO Only – only LO services use the platform * LU & LO – both LU and LO services use the platform (*e.g. Bakerloo line north of Willesden Junction; District line at Richmond; District line at Gunnersbury*) * LU & NR – both LU and NR services use the platform (*e.g. Amersham branch Metropolitan line north of Rickmansworth; Metropolitan line at Harrow-on-the-Hill*) * LU 1 Line – only one LU line uses the platform * LU Mult Lines – multiple LU lines use the platform (*e.g. District and Circle line beteen Tower Hill and Edgware Road; Hammersmith & City and district lines between Barking and Aldgate East; etc*) * NR Only – only NR services use the platform * TFLR Only – only TFLR services use the platform   Where there is more than one line from a platform, passenger flow towards the individual lines towards that platform represents passenger flow towards the same physical location. Services representing the same physical location can be inferred by a common *Platform\_Type* of multiple lines, and a *Platform\_Direction* at a given station. |
| Destination | Text | Destination of service from an LU Platform, where multiple destinations for a direction exist. Destination provides an indication of which branch a service is taking, rather than service termination location. |
| Station\_Entrance\_Exit | Text | Distinguishes between nodes where more than one Entrance node type exist at a station.  Also distinguishes between entrances and exits where stations with a common name have more than one physical station building. |
| NLC | Integer | National Location Code – unique number allocated to every railway station in Great Britain. |
| NAPTAN | Alpha-numeric | National Public Transport Access Node reference – UK standard for describing points of access to public transport.  NAPTAN is provided in stop area level format, i.e. 940GZZLU(xxx).  NB: Hammersmith, Edgware Road and Paddington Underground Stations have two possible NAPTAN values, depending on the physical station/service being described |
| Deprecated | Boolean | Node has been deprecated from use (TRUE) or is current/used (FALSE). |
| Year\_of\_addition | Date | Year of addition where a new node has been added in subsequent releases of annual dataset. |