## Title

Train Service Passenger Counts

## File names

Train\_Service\_Passenger\_Counts

## Abstract

The estimated number of passengers per station on Metro Train and/or Regional Train services that boarded and alighted a trip.

## Purpose

Allows users to analyse trends and flows of passenger movements. The dataset provides the number of patrons that boarded and alighted a particular train service per business date. Estimated passenger counts includes all persons aged 5 and over, excluding drivers and station staff.

Data users should interpret the data cautiously, as the model provides estimates only, and its algorithms rely on a series of assumptions that are listed in the Data Quality section below. In particular, greatest caution is needed in relying on estimated train loadings at busier stations where there are greater transfers between train services, such as at the City Loop station and other transfer hubs. Methodologies for the estimation of patronage are subject to continuing improvements as new technology and techniques are available, and this data may be refined and updated over time.

## Tags

Public Transport, patronage, train, flow, movement, flow, spatial, trip, trips, passenger, count, board, boarding, alight, alighting, transit, train service

## Frequency

Annually – Financial Year

## Data fields

|  |  |  |  |
| --- | --- | --- | --- |
| **Field name** | **Data type** | **Definition** | **Domain** |
| Business\_Date | Date | The business date the service operates on, where one business date includes services that operate between 3 am to 2:59 am the following day and in the format of %Y-%m-%d, e.g. 2022-09-12. |  |
| Day\_of\_Week | Text | The calendar day of the week, e.g. Monday. For cases where the Day Type is Public Holiday, the Day of Week will be masked (will show Public Holiday) to avoid identification of the business date. | Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday, Public Holiday |
| Day\_Type | Text | The descriptive day of the week which groups together different attributes of days | Normal Weekday, Saturday, Sunday, Public Holiday, School Holiday |
| Mode | Text | The train operator, either Metro or V/Line. | Metro, VLine |
| Train\_Number | Int | The unique number for each train service that operates on any particular business date. |  |
| Line\_Name | Text | The train line for each service, e.g. Pakenham. |  |
| Group | Text | The location group for each service, e.g. Northern. |  |
| Direction | Text | The direction of travel for each service, where ‘up’ denotes travel towards Flinders Street Station and ‘down’ denotes travel away from Flinders Street Station. | U (Up), D (Down) |
| Origin\_Station | Text | The train station the service originates at, e.g. Pakenham. |  |
| Destination\_Station | Text | The destination station of service, e.g. Flinders Street. |  |
| Station\_Name | Text | The station the service is stopped at, e.g. Caulfield. |  |
| Station\_Latitude | Double | The latitude co-ordinate of the station. |  |
| Station\_Longitude | Double | The longitude co-ordinate of the station |  |
| Station\_Chainage | Int | The station distance as recorded from Southern Cross Station. |  |
| Stop\_Sequence\_Number | Int | The stop sequence of the station, according to the service. |  |
| Arrival\_Time\_Scheduled | Time | The scheduled arrival time of the service at the station, in time format HH:mm:ss. |  |
| Departure\_Time\_Scheduled | Time | The scheduled departure time of the service at the station, in time format HH:mm:ss. |  |
| Passenger\_Boardings | Int | The number of patrons that boarded the service at the specified station, rounded to the nearest 10 patrons. | (0-4) 0, (6-14) 10, (16-24) 20 etc. For rounding off a 5, the IEC 60559 Standard is used. |
| Passenger\_Alightings | Int | The number of patrons that disembarked the service at the specified station, rounded to the nearest 10 patrons. | (0-4) 0, (6-14) 10, (16-24) 20 etc. For rounding off a 5, the IEC 60559 Standard is used. |
| Passenger\_Arrival\_Load | Int | The number of patrons on board the service when the service arrived at the station, rounded to the nearest 10 patrons. | (0-4) 0, (6-14) 10, (16-24) 20 etc. For rounding off a 5, the IEC 60559 Standard is used. |
| Passenger\_Departure\_Load | Int | The number of patrons on board the service when the service departed the station, rounded to the nearest 10 patrons. | (0-4) 0, (6-14) 10, (16-24) 20 etc. For rounding off a 5, the IEC 60559 Standard is used. |

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## Data quality

1) Passenger counts is derived from a model which includes source data of manual survey counts, myki ticketing data, myki barrier data and manual conductor counts. The purpose of the patronage survey is to determine the transaction rate, which is the percentage of passengers who ‘touch-on’ when they travel. Ticketing transactions are boosted according to the transaction rate to provide an estimate of total patronage.

2) As of January 2021, metropolitan train patronage uses barrier count data, where available, in place of survey observations to determine the transaction rate.

3) Metropolitan train patronage totals are derived from a count of station entries, plus a 5% ‘transfer uplift’ to account for trips following a transfer within a station. Those reported figures will not reconcile with the totals shown here due to the differing methods and application of rounding.

4) Patronage data for regional train is provided by V/Line and is based on conductor or driver counts for each regional train and coach service.

5) Business Date is used instead of the actual date for all fields. The Day of Week and Day Type will follow the Business Date and not the calendar day.

6) Due to the granular nature of the data, the fields of ‘Passenger Boardings’, ‘Passenger Alightings’, ‘Passenger Arrival Load’, and ‘Passenger Departure Load’ have been aggregated into Bin sizes to protect passenger privacy.

7) For Direction, ‘U’ (up) denotes services travelling towards Flinders Street Station and ‘D’ (Down) denotes services travelling away from Flinders Street Station.

8) Line and Group is not differentiated for V/Line services and will have identical cells for V/Line services.

9) For time intervals, 0 is defined as 00:00 (minutes:seconds) to 29:59 and 30 is defined as 30:00 to 59:59

10) Non-timetabled services that ran within the paper ticket section of the train system are not included. This affects passenger counts for V/Line services at non-Myki stations.

11) Services lacking a patronage data source are recorded as having zero counts. It should be noted that in actuality, the passenger counts are unknown and are unlikely to be zero.

12) It is difficult to infer and validate the correct service a patron transferred to in locations where there are multiple transfer options, so the data’s accuracy around these services is reduced.

13) The model is not capacity-constrained, leading to some few services with unrealistically high service load. Such services should be assumed to be very crowded, but these reported loads should not be treated as fact.

14) Where atypical events occurred (e.g. disruptions), the accuracy of the data is significantly reduced.

15) Some trips between Southern Cross and Flinders Street contain ‘dummy’ in their train number field. Due to model limitations, the exact service caught by these passengers is not known, although there is reasonable confidence that these passengers travelled between Southern Cross and Flinders Street at approximately the time shown.