



# Transport for NSW

## API Gateway

GTFS Release Notes

# CONTENTS

<b>1. OVERVIEW</b>	<b>5</b>
<b>2. GENERAL INFORMATION</b>	<b>5</b>
2.1 GTF Specification Compliance	5
2.2 Publication Schedule	5
2.3 GTFS currency versus TransportNSW.info	5
2.4 Data Scope	6
2.5 Identifiers	6
2.6 Value Quoting	7
2.7 Feed Size	7
2.8 Transit Paths / Shapes	7
2.9 GTF Data Validation	7
<b>3. GTFS RELEASES – ARCHIVE FILE CONTENT</b>	<b>7</b>
<b>4. GTFS FILE: AGENCY.TXT</b>	<b>8</b>
4.1 Field Definition	8
4.2 Field notes - agency_url	8
4.3 Field notes - agency_timezone	8
4.4 Field notes - agency_phone	8
<b>5. GTFS FILE: CALENDAR.TXT</b>	<b>9</b>
5.1 Field Definition	9
5.2 Calendar & Calendar_dates	9
5.3 Start & End Dates	10
<b>6. GTFS FILE: CALENDAR_DATES.TXT</b>	<b>10</b>
6.1 Field Definition	10
<b>7. GTFS FILE: ROUTES.TXT</b>	<b>11</b>
7.1 Field Definition	11
7.2 Field notes - route_short_name	12
7.3 Field notes - route_long_name	12
7.4 Field notes - route_desc	12
7.5 Field notes - route_type	13
7.6 Field notes - route_color	14

7.7	Field notes - route_text_color	14
<b>8.</b>	<b>GTFS FILE: TRIPS.TXT</b>	<b>15</b>
8.1	Field Definition	15
8.2	Field notes -trip_headsign	16
8.3	Field notes - block_id	17
8.4	Field notes – wheelchair_accessible	17
8.5	Field notes – trip_note	17
<b>9.</b>	<b>GTFS FILE: STOPS.TXT</b>	<b>18</b>
9.1	Field notes - stop_id	18
9.2	Field notes – stop_code	18
9.3	Field notes - location_type	18
9.4	Field notes - parent_station	18
9.5	Field notes – wheelchair_boarding	18
9.6	Field notes – platform_code	19
<b>10.</b>	<b>GTFS FILE: STOP_TIMES.TXT</b>	<b>19</b>
10.1	Field Definition	19
10.2	Field notes – arrival_time	20
10.3	Field notes – departure_time	21
10.4	Field notes – stop_headsign	21
10.5	Field notes – stop_note	22
<b>11.</b>	<b>GTFS FILE: SHAPES.TXT</b>	<b>23</b>
11.1	Field Definition	23
11.2	Spatial differences due to geographic data	24
11.3	Path accuracy	24
<b>12.</b>	<b>GTFS FILE: NOTES.TXT</b>	<b>25</b>

<b>AUTHOR:</b>	TfNSW Data Services Team (DCIS)
<b>DATE:</b>	6 November 2018
<b>VERSION:</b>	4.2
<b>DIVISION:</b>	CSD

## Revision History

Version	Author	Issue Date	Changes
3.3	TfNSW API Gateway	29 Jun 2015	Public release
4.1	TfNSW Data Services Team (DCIS)	17-20 April 2018	Amended routes.txt > route_type for extended route types. Amend Temporary Bus code
4.2	TfNSW Data Services Team (DCIS)	6 Nov 2018	Updated to reflect the new notes.txt file in the bundle; trips.txt – new fields for trip_note, bikes_allowed, route_direction stop_times.txt – new field timepoint

## 1. OVERVIEW

The TfNSW Transport Data Exchange program provides public transport data in the GTFS (General Transit Feed Specification) format to all program subscribers.

While GTFS is well documented, it provides several optional fields and some flexibility in how to populate some fields. This document provides some general information regarding how the NSW transport data is represented in GTFS.

This GTFS file contains data for:

- All Sydney Trains and NSW Trains services
- All ferry services in Greater Sydney and regional NSW
- All bus services in Greater Sydney and regional NSW
- All light rail services in the greater Sydney region

## 2. GENERAL INFORMATION

### 2.1 GTF Specification Compliance

With the exception of a documented Google Transit extension field, the data is compliant with the GTF specification,

(<https://developers.google.com/transit/gtfs/reference>) as specified at 2 February 2015.

### 2.2 Publication Schedule

The data is scheduled to be published on a weekly basis by 5pm each Friday. However there may be instances where publication is delayed due to scheduled maintenance or unforeseen circumstances.

### 2.3 GTFS currency versus TransportNSW.info

As Transport regularly receives timetable amendments, [www.transportnsw.info](http://www.transportnsw.info) may present slightly different data compared with the current published GTFS Feed. As there are frequent amendments, it is recommended that participants regularly update their data with the newest available GTFS Feed.

## 2.4 Data Scope

### 2.4.1 Geographic coverage

The data is a representation of the public transport data currently utilised within TransportNSW.info and will cover the same geographic region.



### 2.4.2 Validity Period (Date ranges)

Data will be exported with up to 90 days of forward data (from the date of export).

Some operators may have a lesser validity period as service information is not available at the time of export. As this information becomes available to TransportNSW.info it will also be published within the Transport Data Exchange exports.

## 2.5 Identifiers

Many of the identifiers used within the feed will include characters like plus (+), underscore (\_), hyphen (-) or full stop (.). Care may need to be taken to consider this when using the data or developing applications. Identifiers may not be consistent across datasets – ie the same journey may be represented under a different trip\_id in a different dataset.

## 2.6 Value Quoting

All values within the files are enclosed in double-quotes (e.g. "X").

## 2.7 Feed Size

The feed size will vary depending on the volume of data held by Transport at the time of export. TransportNSW.info typically utilises more data during special events, timetable changes or holidays periods - hence the data volume will typically increase around these events. This may alter the feed size considerably – compressed sizes typically range from 110Mb – 240Mb. Sizes may increase beyond these typical ranges and it is suggested to consider or plan for this scenario when utilising the data.

## 2.8 Transit Paths / Shapes

Included within the feed (shapes.txt) are the inter-stop paths that the vehicle is expected to follow – this is The Shapes.txt section of this document should be reviewed for considerations when utilising this information.

## 2.9 GTF Data Validation

The data contained within the feed has been validated using the freely available FeedValidator tool from the googletransitdatafeed project. At time of writing, FeedValidator 1.2.16 does not consider the several optional fields to be part of the primary specification, hence it is recommended to utilise the GoogleTransit extension module as part of any validation utilising FeedValidator.

## 3. GTFS RELEASES – ARCHIVE FILE CONTENT

The GTFS data is provided via 8 of the specified files: agency.txt, calendar.txt, calendar\_dates.txt, routes.txt, trips.txt, stops.txt, stop\_times.txt & shapes.txt. Please see below for notes on individual files and fields.

## 4. GTFS FILE: AGENCY.TXT

Defines one or more transit agencies (Operators) that provide the data in this feed

### 4.1 Field Definition

Field	Included	TfNSW Definition
agency_id	Yes	The Contract ID, allocated by TfNSW. For Example: "2447"
agency_name	Yes	The Operator's 'Customer Facing Name'. Note that this is not necessarily the same as the legal entity name. For example: "Transdev NSW"
agency_url	Yes	For all: " <a href="http://transportnsw.info">http://transportnsw.info</a> "
agency_timezone	Yes	For all: "Australia/Sydney"
agency_lang	Yes	For all: "EN"
agency_phone	Yes	For all: "131500"
agency_fare_url	No	N/A

### 4.2 Field notes - agency\_url

This is always populated as <http://transportnsw.info> rather than individual transport operator sites.

### 4.3 Field notes - agency\_timezone

This is currently populated at 'Australia/Sydney' for all operators included within the feed.

### 4.4 Field notes - agency\_phone

This is always populated as 131500 rather than individual transport operator phone numbers



## 5. GTFS FILE: CALENDAR.TXT

Dates for service IDs using a weekly schedule. Specify when service starts and ends, as well as days of the week where service is available.

### 5.1 Field Definition

Field	Included	TfNSW Definition
service_id	Yes	The service_id contains an ID that uniquely identifies a set of dates when service is available for one or more routes. This identifier will be unique only within a GTFS Fileset, for example for a single Contract. This number has no meaning outside the Fileset.
monday	Yes	<p>Each day field contains a binary value that indicates whether the service is valid for all of that day.</p> <p>A value of 1 indicates that service is available for all of that day in the date range. (The date range is specified using the start_date and end_date fields.)</p> <p>A value of 0 indicates that service is not available on that day in the date range.</p> <p>Note: Exceptions for particular dates, such as public holidays and service differences between school term and non-school term, are represented for the service_id in the calendar_dates.txt file.</p>
tuesday	Yes	
wednesday	Yes	
thursday	Yes	
friday	Yes	
saturday	Yes	
sunday	Yes	
start_date	Yes	
end_date	Yes	The end_date field contains the end date for the service. This date is included in the service interval.

### 5.2 Calendar & Calendar\_dates

The calendar.txt file must be used in conjunction with calendar\_dates.txt to obtain an accurate representation of the days that services operate. Depending on individual data suppliers, some calendars heavily feature date inclusions or exclusions. For example some calendars may have all Monday to Friday fields marked as active with a significant number of these activations overridden by

exclusions in calendar\_dates.txt. Note that any ex/inclusion within calendar\_dates.txt overrides calendar.txt definitions for the specified date.

### 5.3 Start & End Dates

As per Data Scope validity period, the export is based on a 90 day period. Many Start & End dates will reflect this period by being valid for the entire period. However there will be calendars with shorter validity periods that start in the future or end earlier. In general these will relate to change in schedules (e.g. a timetable amendment).

## 6. GTFS FILE: CALENDAR\_DATES.TXT

Defines exceptions for the service IDs defined in the calendar.txt file

### 6.1 Field Definition

Field	Included	TfNSW Definition
service_id	Yes	The internally generated ID that identifies a set of dates when a service exception is available for one or more routes.  This identifier will be unique only within a GTFS Fileset, for example for a single Contract. This number has no meaning outside the Fileset.
date	Yes	The date field specifies a particular date when service availability is different than the norm.  For Example: "20160315"
exception_type	Yes	Indicates whether service is available on the date specified in the date field.  A value of 1 indicates that service has been added for the specified date.  A value of 2 indicates that service has been removed for the specified date.

## 7. GTFS FILE: ROUTES.TXT

Transit routes. A route is a group of trips that are displayed to riders as a single service.

### 7.1 Field Definition

Field	Included	TfNSW Definition
route_id	Yes	The route_id field contains an ID that uniquely identifies a route. The route_id is dataset unique. Constructed as "(CONTRACT ID)_(ROUTE ID)". For example: " <b>2447_10A</b> "
agency_id	Yes	The O/SMBSC Contract ID, allocated by TfNSW. For Example: " <b>2447</b> "
route_short_name	Yes	The short code identifying the Route to the public. Sourced from the Bus Contracts Management System. For example: " <b>10A</b> "
route_long_name	Yes	The long name identifying the Route to the public. Sourced from the Bus Contracts Management System. For example: " <b>Marrickville Metro to City</b> "
route_desc	Yes	Note: TfNSW Variation. Indicates the Bus Network that the Route belongs to. The Bus Network is defined by <b>TfNSW</b> . For example: " <b>Sydney Buses Network</b> ".
route_type	Yes	Note: TfNSW Variation. Indicates the Route Type of the Route. as per the extended GTFS route types following Hierarchical Vehicle Type (HVT) codes from the European TPEG standard. Refer to <a href="https://support.google.com/transitpartners/answer/3520902?hl=en&amp;ef_topic=1095593">https://support.google.com/transitpartners/answer/3520902?hl=en&amp;ef_topic=1095593</a> For example: " <b>700</b> ".
route_url	No	N/A
route_color	Yes	For all: " <b>00B5EF</b> "
route_text_color	Yes	For all: " <b>FFFFFF</b> "
Exact_times	Yes	Indicate if route/s are frequency based service 0 : frequency based 1 : not frequency based

## 7.2 Field notes - route\_short\_name

This field is populated differently depending on the transit mode:

- Bus: uses the route number (e.g. '400', '610X')
- Rail: not populated (null)
- Ferry: not populated (null)
- Light Rail: not populated (null)
















## 7.3 Field notes - route\_long\_name

This field is populated differently depending on the transit mode:

- Bus: This is populated with a route description. Note that this is a directional description (e.g. 'Bondi to City')
- Train: This is populated with the line name (e.g. 'South Coast')
- Ferry: This is populated with the route name (e.g. 'Eastern Suburbs')
- Light Rail: This is populated with the line name (e.g. 'L1 Lilyfield line')

## 7.4 Field notes - route\_desc

This field is populated with the descriptive Network name (e.g. 'Regional Trains and Coaches Network') applicable for the route. This is intended to assist passengers with identifying and utilising public transport.

route_desc	Line colour	Line Hex code	Logo
Sydney Trains Network	Train orange	#F6891F	
Intercity Trains Network	Train orange	#F6891F	
Regional Trains and Coaches Network	Train orange	#F6891F	
Regional Trains and Coaches Network	Coach purple	#732A82	
Blue Mountains Buses Network	Bus blue	#00B5EF	
Sydney Buses Network	Bus blue	#00B5EF	
Central Coast Buses Network	Bus blue	#00B5EF	
Hunter Buses Network	Bus blue	#00B5EF	
Illawarra Buses Network	Bus blue	#00B5EF	
Temporary buses	Bus blue	#00B5EF	
Private bus services	Bus blue	#00B5EF	
Sydney Ferries Network	Ferry green	#5AB031	
Newcastle Ferries	Ferry green	#5AB031	
Private ferry and fast ferry services	Ferry green	#5AB031	
Sydney Light Rail Network	Light Rail red	#EE343F	

## 7.5 Field notes - route\_type

The route\_type field describes the type of transportation used on a route.

*Note:* Prior to May-2018, standard GTFS route types (0 -> 7) were implemented.

From May-2018 onwards, extended GTFS route types are implemented for certain services which provides a greater level of granularity for data classification.

Reference: Extended GTFS Route Types

<https://developers.google.com/transit/gtfs/reference/extended-route-types>

Diva Transport Id	Route Description	GTFS Route Type (prior to May 2018)	Extended GTFS Route Type (from May 2018)
1	Sydney Trains Network	2	2
2	Intercity Trains	2	2
3	Regional Trains and Coaches Network	3	106
4	Blue Mountains Buses Network	3	700
5	Sydney Buses Network	3	700
6	Central Coast Buses Network	3	700
7	Regional Trains and Coaches Network	3	204

Diva Transport Id	Route Description	GTFS Route Type (prior to May 2018)	Extended GTFS Route Type (from May 2018)
8	School Buses	3	712
9	Private bus services	3	700
10	Sydney Ferries Network	4	4
11	Newcastle Ferries	4	4
12	Private ferry and fast ferry services	4	4
13	Sydney Light Rail Network	0	0
14	Temporary Buses	3	714
15	Hunter Buses Network	3	700
16	Illawarra Buses Network	3	700
17	Private coach services	3	700
18	Temporary ferries	4	4
19	Temporary trains	2	2
20	Temporary light rail	0	0
21	Newcastle Light Rail Network	0	0
22	Temporary coaches	3	203
23	On demand	3	715
24	Sydney Metro Network	-	401

## 7.6 Field notes - route\_color

This field is populated for all routes with the relevant colours utilised on timetables and signboards.

## 7.7 Field notes - route\_text\_color

This field is populated for all routes and is generally either black or white, selected for contrast with the route\_color.

## 7.8 Field notes – exact\_times

This field is populated for all routes to indicate whether route/s are frequency based service.

## 8. GTFS FILE: TRIPS.TXT

Trips for each route. A trip is a sequence of two or more stops that occurs at specific time.

### 8.1 Field Definition

Field	Included	TfNSW Definition
route_id	Yes	The route_id field contains an ID that uniquely identifies a route. The route_id is dataset unique. The value is referenced from route.txt.
service_id	Yes	The service_id contains an ID that uniquely identifies a set of dates when service is available for one or more routes. This identifier will be unique within a GTFS Fileset. This number has no meaning outside the Fileset.
trip_id	Yes	The trip_id field contains an ID that identifies a trip. This value is referenced from the trips.txt file. Note : This trip_id uses real time id.
trip_headsign	Yes	The trip_headsign field contains the text that appears on a sign that identifies the trip's destination to passengers. For example: <b>"Parramatta to Rouse Hill Town Centre"</b> See additional field notes below.
trip_short_name	No	N/A
direction_id	Yes	Indicates the direction (outgoing, inbound) of the Trip. Possible values are: "0": Outbound "1": Inbound Note that 'Loop' services will be indicated as '1-Inbound'.
block_id	Yes	See additional field notes below.
shape_id	Yes	Contains an ID that defines a shape for the trip. This value is referenced from the <b>shapes.txt</b> file.
wheelchair_accessible	Yes	Indicates wheelchair accessibility for a scheduled trip. Note that this may not be the same as the accessibility

		<p>status of a trip as operated.</p> <p>Possible values are:          "0": No accessibility information available.          "1": Scheduled to be an accessible service.</p> <p>See additional field notes below.</p>
bikes_allowed	Yes	<p>Indicates whether bicycles are allowed on the trip.</p> <p>0 : bikes not allowed          1 : bikes allowed</p> <p>Not populated: Restrictions/permissions for bicycles not specified</p>
trip_note	Yes	<p><b>Note: TfNSW Extension.</b></p> <p>To reflect Notes provided by Operators for each Trip, to be available to Customers. May be empty.</p> <p>The value is referenced from the notes.txt file.</p> <p>See additional field notes below.</p>
route_direction	Yes	<p><b>Note: TfNSW Extension.</b></p> <p>To describe the Route Direction for each Trip, to be visible to Customers in Timetables. Enables grouping of Trips together in a meaningful way.</p> <p>For example: <b>"Parramatta to Rouse Hill Town Centre via North West T-way service"</b></p>

## 8.2 Field notes -trip\_headsign

The trip headsign is populated slightly differently depending on the transit mode and trip behaviour:

- Bus: In the majority of cases the trip\_headsign will be the suburb within which the trip finishes (e.g. 'Chatswood'). However should the trip be a loop service (starting and ending in the same suburb), the relevant directional description for the route will be utilised (e.g. 'Chatswood Loop via Killara').
- Train: This is populated with the name of the final station on the Journey e.g. 'Central Station'. Please note additional information is populated within the stop\_times.txt file (stop\_headsign) when trips are identified as loops. Refer to GTF File: Stop\_times.txt for further information.
- Ferry: In the majority of cases the trip\_headsign will be the name of the final Wharf on the trip (e.g. 'Circular Quay'). However should the trip be a loop service (starting and ending in the same suburb), the trip\_headsign will show the next stop in the trip.
- Please note additional information is populated within the stop\_times.txt file (stop\_headsign) when trips are identified as loops.
- Light Rail: This is populated with the name of the final station on the Journey e.g. 'Central Station Light Rail'.



### 8.3 Field notes - block\_id

Block information is populated for selected services – primarily Rail. This aids consumers in ‘connecting’ trips which are suitable for passengers to continue travel on without disembarking. It essentially links trips performed by the same vehicle.

### 8.4 Field notes – wheelchair\_accessible

Accessibility information is populated for all services, with flag values of ‘1’ (accessible) or ‘2’ (non accessible) being used. This information is based upon the vehicle type being used for the service. Please note:

- this flag indicates whether an entire trip is accessible and does not indicate whether a trip is accessible at a particular stop along the journey, (see wheelchair\_boarding in stops.txt) and
- this information is based upon planned schedules. Changed operational circumstances may mean that some journeys are operated by a different vehicle type and hence access level may be changed.

### 8.5 Field notes – trip\_note

*Note: This is a TfNSW Extension*

- To reflect Notes provided by Operators for each Trip, to be available to Customers
- May be empty
- The value is referenced from the notes.txt file

## 9. GTFS FILE: STOPS.TXT

The following fields are supplied & populated within the stops.txt:

stop\_id,stop\_code,stop\_name,stop\_lat,stop\_lon,location\_type,parent\_station,wheelchair\_boarding,platform\_code

The optional Parent Station fields are utilised within this file to group Rail platforms together. These Parent Stations can be ignored if not relevant to individual applications.

The optional wheelchair\_boarding field is used to indicate accessibility for certain stop types.

### 9.1 Field notes - stop\_id

As per the notes regarding identifiers, the stop\_id field may include special characters such as underscore (\_).

There are two general stop\_id 'types' within the data:

- Transit Stop Numbers (TSN's) – e.g. '200035'. These are used for Buses, Ferries, Light Rail and Rail Platforms
- Parent Station identifiers (e.g. 'PST1234') – used to group Rail Platforms

### 9.2 Field notes – stop\_code

The stop\_code field is populated for stops that utilise a Transit Stop Number (TSN), most commonly bus stops and ferry wharves. This number is used within many NSW transport systems to uniquely identify a stopping location for passengers.

Where the stop does not have a TSN, this field will not be populated.

### 9.3 Field notes - location\_type

This field is only populated for stops which are Parent Stations – all other stops will be null.

### 9.4 Field notes - parent\_station

This field will only be populated for Sydney Trains and NSW TrainLink platforms, where it will be related to the appropriate Parent Station. All other stops will be null.

### 9.5 Field notes – wheelchair\_boarding

This field is populated differently depending on the transit mode that utilises the stop point and stop type (parent or child).

- Bus stops are always '0' (unknown)

- Train Platforms are ‘1’ (accessible) where TransportNSW.info considers the platform to be accessible and able to be reached from the street in an accessible manner (e.g. flat street entrance or lift is available). Where platforms are not specifically considered to be accessible, they are marked as ‘2’ (inaccessible). Note that some platforms marked as inaccessible may be accessible with assistance or by specific services, but accessibility cannot be guaranteed.
- Ferry Wharves are ‘1’ (accessible) where TransportNSW.info considers the wharf to be accessible.
- Where wharves are not considered to be accessible, they are marked as ‘2’ (inaccessible).
- Parent Stations are marked dependent on their child stops:
  - Where all child stops are wheelchair accessible (‘1’), the parent station will be marked accessible.
  - In all other cases the parent station will be marked as ‘0’ (unknown) and consumers should evaluate the child stop values to determine the accessibility of a particular journey.

## 9.6 Field notes – platform\_code

This field will be populated for Train platforms that have a designated platform ‘number’ (e.g. ‘15’ if the stop is ‘Central Station Platform 15’). It should be noted that this field is alphanumeric and may include words (e.g. ‘Sprint’ for ‘Lidcombe Station Sprint Platform’). This field will be null for stops without platform designations, Bus stops and ferry wharves.

## 10. GTFS FILE: STOP\_TIMES.TXT

Times that a vehicle arrives at and departs from individual stops for each trip.

trip\_id,arrival\_time,departure\_time,stop\_id,stop\_sequence,stop\_headsign,pickup\_type,drop\_off\_type,shape\_dist\_traveled

### 10.1 Field Definition

Field	Included	TfNSW Definition
trip_id	Yes	The trip_id field contains an ID that identifies a trip. This value is referenced from the trips.txt file.
arrival_time	Yes	The arrival time at a specific stop for a specific trip on a route. Times for trips starting before 04:00 am will be expressed in '36

Field	Included	TfNSW Definition
		hour format'. For example: "25:07" (01:07 am)
departure_time	Yes	The departure time from a specific stop for a specific trip on a route. Times for trips starting before 04:00 am will be expressed in '36 hour format'. For example: "25:09" (01:09 am)
stop_id	Yes	The TSN ID for the Stop. This uniquely identifies a stop. This ID is the unique Transit Stop Number that identifies a stop in the <b>Transit Stop Management System ('TSM')</b> , the original Transit Stop reference resource maintained by TfNSW. For example: "220411".
stop_sequence	Yes	The sequence of the Stop within the Trip. The stop_sequence will be a non-negative integer, and will increase along the trip. For example: "3" indicates that the stop is the 3 <sup>rd</sup> in the Trip.
stop_headsign	Yes	See below
pickup_type	Yes	Indicates whether the Stop is for Pickup. For example: "0" indicates that regularly scheduled pickup occurs at the Stop for the Trip.
drop_off_type	Yes	Indicates whether the Stop is for Pickup. For example: "1" indicates that no drop off available for the Stop for the Trip.
shape_dist_traveled	Yes	The shape_dist_traveled field positions a shape point as a distance traveled along a shape from the first shape point.  The shape_dist_traveled field represents a real distance travelled along the route in <b>meters</b> . The values used for shape_dist_traveled will increase along with stop_sequence: they cannot be used to show reverse travel along a trip.
timepoint	Yes	Indicates whether the Stop is a timing point for the Trip.  Timing Points are considered more accurate than non-timing point stops. For example: "1" indicates that the Stop is a Timing Point for the Trip.
stop_note	Yes	<b>Note: TfNSW Extension.</b>  To reflect Notes provided by Operators for each Stop, to be available to Customers. May be empty. The value is referenced from the notes.txt file.

## 10.2 Field notes – arrival\_time

As per the GTF specification, arrival\_times may be outside the conventional 24 hour clock values (e.g. '25:14' being 1:14am the following day). Care needs to be taken to handle these values appropriately.

Note that in some cases (due to supplier constraints) this field will not be populated. This will occur where otherwise the current stop would have the same arrival\_time as the previous stop on the trip.

As per the GTF specification, where the arrival\_time field is not populated, consumers should estimate (interpolate) the value based on previous and subsequent populated values. This may be done by either simple time division or by making more complex estimates considering transit distance by leveraging the shape\_dist\_traveled field.

This will not occur for either the first or last stop on a trip.

End users should display arrival\_time and departure\_time as supplied in stop\_times.txt. Users should not interpolate values between timepoints.

### 10.3 Field notes – departure\_time

As per the GTF specification, arrival\_times may be outside the conventional 24 hour clock values (e.g. '25:14' being 1:14am the following day). Care needs to be taken to handle these values appropriately.

Note that in some cases (due to supplier constraints) this field will not be populated. This will occur where otherwise the current stop would have the same arrival\_time as the previous stop on the trip.

As per the GTF specification, where the arrival\_time field is not populated, consumers should estimate (interpolate) the value based on previous and subsequent populated values. This may be done by either simple time division or by making more complex estimates considering transit distance by leveraging the shape\_dist\_traveled field.

This will not occur for either the first or last stop on a trip.

End users should display arrival\_time and departure\_time as supplied in stop\_times.txt. Users should not interpolate values between timepoints.

### 10.4 Field notes – stop\_headsign

The stop\_headsign field is used to provide more accurate destination information where the trip behaviour is such that traveller confusion is likely. An example of this is a loop service where the origin and destination is the same.

The stop\_headsign field will be populated when the following conditions are met:

- The route is operated by a train or ferry
- The trip is determined to be a loop service

For trains, a loop trip is considered to occur where the origin and destination is at the same parent station (not necessarily the same platform).

For ferries, a loop trip is considered to occur where the origin and destination stop are within the same TransportNSW.info locality.

Where the stop\_headsign field is populated, the field will be populated with the general name of the following stop on the trip. The exception to this is the final stop on the trip, where the stop\_headsign is blank. For example in a three stop train journey from Central to Parramatta via Strathfield, the stop\_headsign values would be as follows:

Sequence	Stop	stop_headsign
1	Central Station	Strathfield Station
2	Strathfield Station	Parramatta Station
3	Parramatta Station	<null>

### 10.5 Field notes – stop\_note

*Note: This is a TfNSW Extension*

- To reflect Notes provided by Operators for each Stop, to be available to Customers
- May be empty
- The value is referenced from the notes.txt file

## 11. GTFS FILE: SHAPES.TXT

Rules for drawing lines on a map to represent a transit organization's routes.

### 11.1 Field Definition

Field	Included	TfNSW Definition
shape_id	Yes	The shape_id field contains an ID that uniquely identifies a shape.
shape_pt_lat	Yes	These fields associate a shape point's latitude with a shape ID. The field values must be valid WGS 84 values from -180 to 180. Each row in shapes.txt represents a shape point in the trip's shape definition. For example: " <b>-32.8407</b> "
shape_pt_lon	Yes	These fields associate a shape point's longitude with a shape ID. The field values must be valid WGS 84 values from -180 to 180. Each row in shapes.txt represents a shape point in the trip's shape definition. For example: " <b>151.3551139</b> "
shape_pt_sequence	Yes	The shape_pt_sequence field associates the latitude and longitude of a shape point with its sequence order along the shape. The values for shape_pt_sequence will be non-negative integers, and they will increase along the trip. These numbers have no meaning outside the trip point sequence.
shape_dist_traveled	Yes	The shape_dist_traveled field positions a shape point as a distance traveled along a shape from the first shape point. The shape_dist_traveled field represents a real distance travelled along the route in <b>meters</b> . The values used for shape_dist_traveled will increase along with shape_pt_sequence: they cannot be used to show reverse travel along a route.

## 11.2 Spatial differences due to geographic data

The shapes portrayed via the shapes.txt file are a representation of the path taken by vehicles on their journeys. These paths are based around the geographic data utilised by Transport. In some cases the paths supplied may not align with other geographic data or imagery.

In cases where there is insufficient geographic data, there may be instances where shapes are not available.

## 11.3 Path accuracy

The path information provided is generated based on a mix of automatic algorithm and manual pathing. There may be inaccuracies with the paths and hence the paths may not always match on-road operations.



## 12. GTFS FILE: NOTES.TXT

This file is an extension on the GTFS Fileset standard.

Contains a list of notes referenced from trips.txt and stop\_times.txt.

Field	Included	TfNSW Definition
note_id	Yes	Unique ID for Notes referenced in trips.txt (trip_note) and stop_times.txt (stop_note).
note_txt	Yes	Text for note used in stop_times.txt and trips.txt. A single Note may be re-used multiple times. For example: <b>“Trip terminates at Railway Square”</b> .