Land Transport Authority

DataMall @ MyTransport.SG™ Your Transport Companion

an LTA Open Data Initiative

API User Guide & Documentation

Version 4.0
28 Jul 2017

Document Change Log

Version No.	Change Details	Release Date
1.1	First release of document, reflecting specifications for each dataset.	04 Jun 2014
1.2	Amended attributes for all datasets, and added the update frequency for each dataset in specification section.	15 Jun 2014
1.3	Inserted notes to denote fields that are new and upcoming; not yet available on the data feed.	26 Jun 2014
1.4	Minor revisions (typo errors).	10 Mar 2015
1.5	Revisions to names of datasets, and removed listing for certain attributes that are redundant at this point.	07 Apr 2015
2.0	Revised document for newly revamped DataMall. - New Categorisation of Datasets - Moved Park & Ride Location, Premium Bus Service, and Carpark Rates to Static Datasets listed on MyTransport.SG.	13 Apr 2015
2.1	Corrected reference notes for Carpark Availability and ERP Rates.	14 Apr 2015
2.2 2.2.1	Added Bus Arrival, and Taxi Availability APIs Amended Update Freqs for Bus Arrival and Taxi Availability	19 Apr 2015 03 Jun 2015
3.0	Bus Arrival API is now enhanced! Latest ***beta*** release includes: - Additional 3rd set of ETA information - Estimated location (coordinates) of buses Look out for blue-highlights!	12 Dec 2015
3.1	**Public-Transport (Bus) Related APIs** are enhanced (version 2)! - **Bus Services** and **Bus Routes** are now consolidated across Operators, e.g. SBST routes and SMRT routes in 1 single API - Attributes are renamed to be more meaningful - **Bus Stops** now include location (lat/long) coordinates Bug for Bus Arrival #VisitNumber fixed.	08 Mar 2016
3.2	Changes to **Traffic Related APIs**: - URLs changed to point to version 2 of the APIs. - `VCCType` renamed to `VehicleType` (ERP Rates) - `EstimatedTime` renamed to `EstTime` (Estimated Travel Times) - `RoadID` renamed to `EventID` (Road Openings and Road Works) - `ImageURL` renamed to `ImageLink` (Traffic Images) - `Band` renamed to `SpeedBand` (Traffic Speed Bands)	31 Mar 2016
3.3	Changes to **API Response Size:** - **Taxi Availability API** now returns 500 records per call. - **Traffic Images API** now returns 70 records per call. - Changes are reflected on Page 5, and on respective API URLs.	08 Aug 2016
3.4	Changes to API authentication – now requiring only AccountKey.	01 Nov 2016
3.5	Updated attribute description for location coordinates of **Bus Arrival API**.	23 Nov 2016

3.6	**Traffic Images API** now returns all records per call.	14 Dec 2016
3.7	Updated guide to making API calls, using Postman.	05 Apr 2017
4.0	**Bus Arrival API** is now enhanced! Latest release includes: - New Attribute – Bus `Type` - Inclusion of Short Working Trip (SWT) Supplementary Services - Relegation of `OriginCode` and `DestinationCode` to vehicle level - Removal of entire response structure from API during non-operating hours - Removal of `Status` Attribute - Renaming of values for `Load` Attribute - Renaming of `SubsequentBus` and `SubsequentBus3` subset tags - Renaming of `BusStopID` Parameter to `BusStopCode` - Removal of `SST` Parameter. Timestamps are now in SST by default. - Rehashed advisement on Front-End Implementation for clarity.	28 Jul 2017

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1. MAKING API CALLS

API calls need to be made programmatically in regular intervals to obtain the constant stream of data for your respective development or research needs. For illustration purposes, the API call below is being made via a third-party application – Postman.

Steps to making an API call:

1. Download and install the Postman from https://www.getpostman.com/. Fire it up!
2. Make sure Http method is set to GET.
3. Enter the URL (refer to subsequent pages in this document) in the field **request URL**.
4. Enter your AccountKey under **Headers**.
5. **(OPTIONAL STEP)** The "accept" header allows you to specify the response format of your API call. Default is JSON. Specify "application/atom+xml" for XML.
6. Click on the **Send** button.

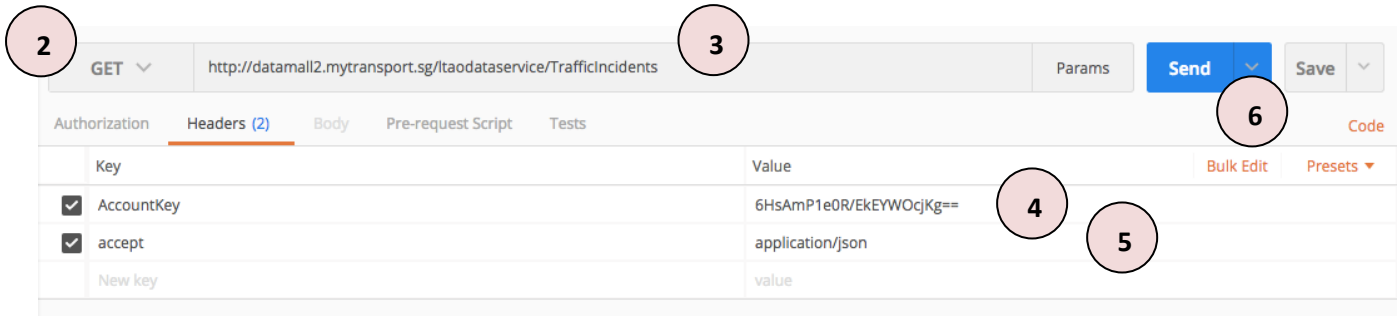

Figure 2-1

Figure 2-2 on the next page shows the JSON response of an API call made for the Traffic Incidents dataset.

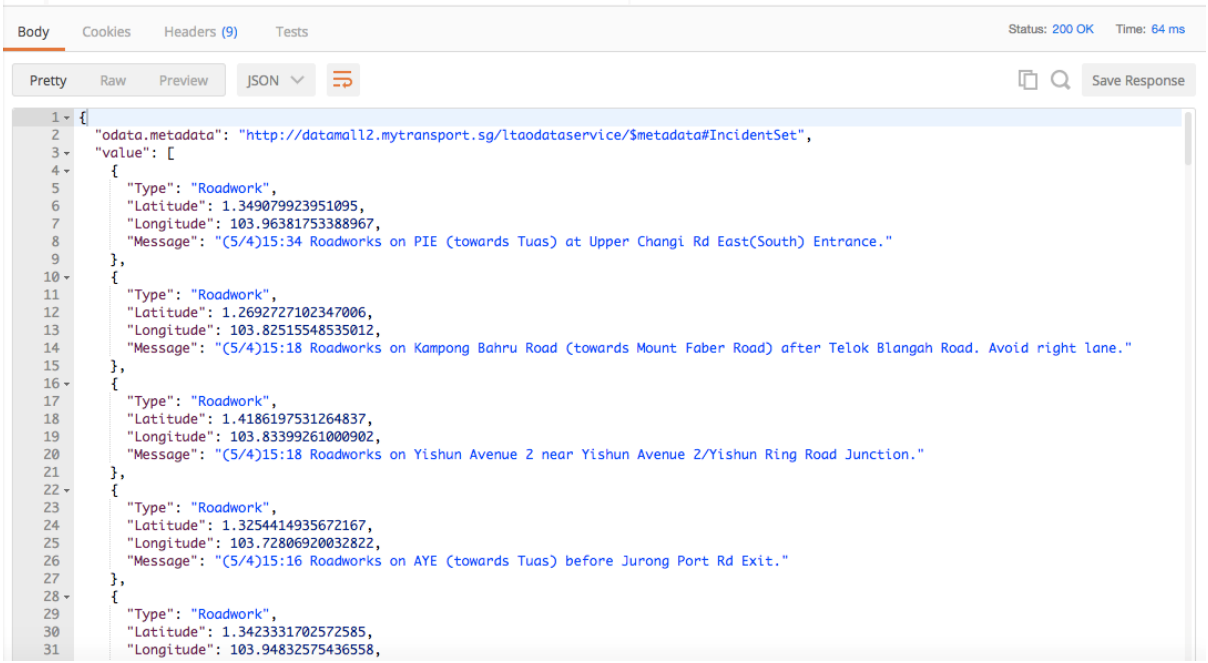

Figure 2-2: API (JSON) Response as shown on Postman.

With the exception of the following 3 APIs listed below (see Table 1), API responses returned are limited to 50 records of the dataset per call. To retrieve subsequent records of the dataset, you need to append the **$skip operator** to the API call (URL).

For example, to retrieve the next 50 records (51st to the 100th), the API call should be:

*http://datamall2.mytransport.sg/ltaodataservice/TrafficIncidents?**$skip**=50*

To retrieve the following set of 50 records, append '***?$skip=100***', and so on. Just remember, each URL call returns only a max of 50 records!

API	Response Size
Bus Arrival	N.A. Depends on parameter supplied.
Taxi Availability	500
Traffic Images	All records

Table 1: API Response Size

Here's an example of how you can retrieve the data programmatically. This example is coded in Python 2.7. As mentioned previously, this API call only returns the first 50 records.

```
import json
import urllib
from urlparse import urlparse

import httplib2 as http #External library

if __name__=="__main__":

    #Authentication parameters
    headers = { 'AccountKey' : '6HsAmP1e0R/EkEYWOcjKg==',
                'accept' : 'application/json'} #this is by default

    #API parameters
    uri = 'http://datamall2.mytransport.sg/' #Resource URL
    path = '/ltaodataservice/TrafficIncidents?'

    #Build query string & specify type of API call
    target = urlparse(uri + path)
    print target.geturl()
    method = 'GET'
    body = ''

    #Get handle to http
    h = http.Http()

    #Obtain results
    response, content = h.request(
        target.geturl(),
        method,
        body,
        headers)

    #Parse JSON to print
    jsonObj = json.loads(content)
    print json.dumps(jsonObj, sort_keys=True, indent=4)

    #Save result to file
    with open("traffic_incidents.json","w") as outfile:
        #Saving jsonObj["d"]
        json.dump(jsonObj, outfile, sort_keys=True, indent=4,
ensure_ascii=False)
```

2. API DOCUMENTATION

The following lists all real-time / dynamic datasets that are refreshed at regular intervals and served out via APIs. Specification for each API can be found in the rest of this document.

Note: any attributes not specified in this document but found on the data feed, should be ignored.

	Public-Transport Related (Total 5)	**Description**
1	Bus Arrival	Returns real-time Bus Arrival information for Bus Services at a queried Bus Stop, including: Estimated Time of Arrival (ETA), Estimated Location, Load info (i.e. how crowded the bus is).
2	Bus Services	Returns detailed service information for all buses currently in operation, including: first stop, last stop, peak / offpeak frequency of dispatch.
3	Bus Routes	Returns detailed route information for all services currently in operation, including: all bus stops along each route, first/last bus timings for each stop.
4	Bus Stops	Returns detailed information for all bus stops currently being serviced by buses, including: Bus Stop Code, location coordinates.
5	Taxi Availability	Returns location coordinates of all Taxis that are currently available for hire. Does not include "Hired" or "Busy" Taxis.
	Traffic Related (Total 10)	**Description**
6	Carpark Availability	Returns no. of available lots for carparks in major shopping malls and developments within Orchard, Marina, HarbourFront, Jurong Lake District.
7	ERP Rates	Returns ERP rates of all vehicle types across all timings for each zone.
8	Estimated Travel Times	Returns estimated travel times of expressways (in segments).
9	Faulty Traffic Lights	Returns alerts of traffic lights that are currently faulty, or currently undergoing scheduled maintenance.
10	Road Openings	Returns all planned road openings.
11	Road Works	Returns all road works being / to be carried out.
12	Traffic Images	Returns links to images of live traffic conditions along expressways and Woodlands & Tuas Checkpoints.
13	Traffic Incidents	Returns incidents currently happening on the roads, such as Accidents, Vehicle Breakdowns, Road Blocks, Traffic Diversions etc.
14	Traffic Speed Bands	Returns current traffic speeds on expressways and arterial roads, expressed in speed bands.
15	VMS / EMAS	Returns traffic advisories (via variable message services) concerning current traffic conditions that are displayed on EMAS signboards along expressways and arterial roads.

2.1 BUS ARRIVAL

URL	http://datamall2.mytransport.sg/ltaodataservice/BusArrivalv2		
Description	Returns real-time Bus Arrival information of Bus Services at a queried Bus Stop, including Est. Arrival Time, Est. Current Location, Est. Current Load.		
Update Freq	1 minute		
Request			
Parameters	**Description**	**Mandatory**	**Example**
BusStopCode	Bus stop reference code	Yes	*83139*
ServiceNo	Bus service number	No	*15*
Response			
Attributes	**Description**		**Example**
ServiceNo	Bus service number		*15*
Operator	Public Transport Operator Codes: • SBST (for SBS Transit) • SMRT (for SMRT Corporation) • TTS (for Tower Transit Singapore) • GAS (for Go Ahead Singapore)		*GAS*
NextBus NextBus2 NextBus3	Structural tags for all bus level attributes^ of the next 3 oncoming buses. Note that if there is only one last bus left on the roads (e.g. at night), attributes values in NextBus2 and NextBus3 will be empty / blank.		
^ OriginCode	Reference code of the first bus stop where this bus started its service		*77009*
^ DestinationCode	Reference code of the last bus stop where this bus will terminate its service		*77131*
^ EstimatedArrival	Date-time of this bus' estimated time of arrival, expressed in the UTC standard, GMT+8 for Singapore Standard Time (SST)		*2017-04-29T07:20:24+08:00*
^ Latitude	Current estimated location coordinates of this bus at point of published data		*1.42117943692586*
^ Longitude			*103.831477233098*
^ VisitNumber	Ordinal value of the n^{th} visit of this vehicle at this bus stop; 1=1^{st} visit, 2=2^{nd} visit		*1*
^ Load	Current bus occupancy / crowding level: ▪ SEA (for Seats Available) ▪ SDA (for Standing Available) ▪ LSD (for Limited Standing)		*SEA*
^ Feature	Indicates if bus is wheel-chair accessible: • WAB • (empty / blank)		*WAB*
^ Type	Vehicle type: • SD (for Single Deck) • DD (for Double Deck) • BD (for Bendy)		*SD*

Please note that Bus Arrival data (i.e. all attribute-value pairs above) will only appear on the API when the buses are in service (i.e. on the roads). When not in operation, OR when the API service is undergoing maintenance and temporarily unavailable, there will be no response returned on the API (not even the attribute tags).Please refer to Advisement Pt. 1 in following section for more.

SAMPLE API CALL & RESPONSE

API Call:
http://datamall2.mytransport.sg/ltaodataservice/BusArrival?BusStopCode=83139

API Response:


```
{
    "odata.metadata":
"http://datamall2.mytransport.sg/ltaodataservice/$metadata#BusArrival/@Element",
    "BusStopCode": "83139",
    "Services": [
        {
            "ServiceNo": "15",
            "Operator": "GAS",
            "NextBus": {
                "OriginCode": "77009",
                "DestinationCode": "77009",
                "EstimatedArrival": "2017-06-05T14:46:27+08:00",
                "Latitude": "1.3143508333333334",
                "Longitude": "103.906379",
                "VisitNumber": "1",
                "Load": "SDA",
                "Feature": "WAB",
                "Type": "SD"
            },
            "NextBus2": {
                "OriginCode": "77009",
                "DestinationCode": "77009",
                "EstimatedArrival": "2017-06-05T14:57:09+08:00",
                "Latitude": "1.334717",
                "Longitude": "103.90723483333333",
                "VisitNumber": "1",
                "Load": "SDA",
                "Feature": "WAB"
                "Type": "SD"
            },
            "NextBus3": {
                "OriginCode": "77009",
                "DestinationCode": "77009",
                "EstimatedArrival": "2017-06-05T15:00:20+08:00",
                "Latitude": "1.3370036666666667",
                "Longitude": "103.913939",
                "VisitNumber": "1",
                "Load": "SEA",
                "Feature": "WAB"
                "Type": "SD"
            }
        },
        {
            "ServiceNo": "150",
            "Operator": "SBST",
            "NextBus": {
                "OriginCode": "82009",
                "DestinationCode": "82009",
                "EstimatedArrival": "2017-06-05T14:54:06+08:00",
                "Latitude": "1.319458",
                "Longitude": "103.9012405",
                "VisitNumber": "1",
                "Load": "SEA",
                "Feature": "WAB"
                "Type": "SD"
            },
                "NextBus2": {
                "OriginCode": "82009",
                "DestinationCode": "82009",
                "EstimatedArrival": "2017-06-05T15:04:49+08:00",
                "Latitude": "0",
                "Longitude": "0",
                "VisitNumber": "1",
```

```
                "Load": "SEA",
                "Feature": "WAB"
                "Type": "SD"
            },
            "NextBus3": {
                "OriginCode": "82009",
                "DestinationCode": "82009",
                "EstimatedArrival": "2017-06-05T15:19:49+08:00",
                "Latitude": "0",
                "Longitude": "0",
                "VisitNumber": "1",
                "Load": "SEA",
                "Feature": "WAB"
                "Type": "SD"
            }
        },
        {
            "ServiceNo": "155",
            "Operator": "SBST",
            "NextBus": {
                "OriginCode": "52009",
                "DestinationCode": "84009",
                "EstimatedArrival": "2017-06-05T14:55:12+08:00",
                "Latitude": "1.3184713333333333",
                "Longitude": "103.89202066666667",
                "VisitNumber": "1",
                "Load": "SEA",
                "Feature": "WAB"
                "Type": "SD"
            },
            "NextBus2": {
                "OriginCode": "52009",
                "DestinationCode": "84009",
                "EstimatedArrival": "2017-06-05T15:02:41+08:00",
                "Latitude": "1.3186606666666667",
                "Longitude": "103.88303666666667",
                "VisitNumber": "1",
                "Load": "SEA",
                "Feature": "WAB"
                "Type": "SD"
            },
            "NextBus3": {
                "OriginCode": "52009",
                "DestinationCode": "84009",
                "EstimatedArrival": "2017-06-05T15:20:22+08:00",
                "Latitude": "1.3360038333333333",
                "Longitude": "103.87798466666666",
                "VisitNumber": "1",
                "Load": "SEA",
                "Feature": "WAB"
                "Type": "SD"
            }
        }
    ]
}
```

ADVISEMENT ON FRONT-END IMPLEMENTATION (BUS APPS)

1. [EstimatedArrival] Display of Advisement Messages when there is NO Bus Arrival Data

In the event where data is not available (be it in partial or in full) on the API, you may want to display some form of 'status texts' to advise your app users on what's going on, as far as bus service availability is concerned. To do this, you will need to take reference from two data points – (1) the presence or **absence** of Arrival data itself, and (2) the **bus service operating hours at each bus stop** which you need to obtain via the **Bus Routes API**.

With those two data points gathered, you will arrive at the following possible scenarios:

#	Operation Status	Data Availability	Advisement Message
a.	Bus is in operation	Arrival data is available	(none required)
b.	Bus is in operation	Arrival data is NOT available	"*No Est. Available*"
c.	Bus is NOT in operation	Arrival data is NOT available	"*Not In Operation*"
d.	Bus is NOT in operation	Arrival data is available	(none required)

For scenarios (b) and (c), you may display advisement messages like those suggested in the table above, or any other user-friendly and appropriate variants at your discretion.

Next, you should note that Arrival data may be available on the API even when bus services are supposedly NOT in operation (as per scheduled operating hours) – reflected as scenario (d) in the table above. This happens,

a. before first bus(es) begin their service from Bus Interchanges / Depots in the mornings, and,
b. when last bus(es) at night are running behind schedule; slightly past operating hours.

Therefore, the general logic to be applied, is to **always first display the Arrival data if it's available on the API**, irrespective of the scheduled operating hours. Advisement messages like "*No Est. Available*" and "*Not In Operation*" are applicable ONLY when there is no Arrival data on the API.

2. [EstimatedArrival] Rounding of Seconds

All derived bus arrival duration should be rounded down to the nearest minute.

Derived duration:	3:49 mins
Display duration:	"3 min"
Derived duration:	2:07 mins
Display duration:	"2 min"
Derived duration:	1:59 mins
Display duration:	"1 min"
Derived duration:	0:59 mins
Display duration:	"Arr"

3. [Load] Colour Scheme Adoption

You may adopt this colour scheme to serve as visual indicators for the various loading values:

- [Green] Seats Available
- [Amber] Standing Available
- [Red] Limited Standing

You are given the flexibility for the manner in which you display the colours, i.e. colour bars, coloured timings, and accompanied with legends where appropriate and/or necessary.

4. [Feature] Wheelchair Accessible Buses

You are given the flexibility to display any symbols or labels  to denote oncoming buses that are wheelchair accessible.

ADDITIONAL NOTE ON LOOP SERVICES THAT RUNS BOTH DIRECTIONS

Please note that some Loop Services are appended with **'G'** or **'W'** to denote their direction of travel. You should account for and display these services individually – 225G, 225W, 243G, 243W, 410G, 410W.

2.2 BUS SERVICES

URL	http://datamall2.mytransport.sg/ltaodataservice/BusServices	
Description	Returns detailed service information for all buses currently in operation, including: first stop, last stop, peak / offpeak frequency of dispatch.	
Update Freq	Ad-Hoc	
Response		
Attributes	**Description**	**Sample**
ServiceNo	The bus service number	*107M*
Operator	Operator for this bus service	*SBST*
Direction	The direction in which the bus travels (1 or 2), loop services only have 1 direction	*1*
Category	Category of the SBS bus service: EXPRESS, FEEDER, INDUSTRIAL, TOWNLINK, TRUNK, 2 TIER FLAT FEE, FLAT FEE $1.10 (or $1.90, $3.50, $3.80)	*TRUNK*
OriginCode	Bus stop code for first bus stop	*64009*
DestinationCode	Bus stop code for last bus stop (similar as first stop for loop services)	*64009*
AM_Peak_Freq	Freq of dispatch for AM Peak 0630H - 0830H (range in minutes)	*14-17*
AM_Offpeak_Freq	Freq of dispatch for AM Off-Peak 0831H - 1659H (range in minutes)	*10-16*
PM_Peak_Freq	Freq of dispatch for PM Peak 1700H - 1900H (range in minutes)	*12-15*
PM_Offpeak_Freq	Freq of dispatch for PM Off-Peak after 1900H (range in minutes)	*12-15*
LoopDesc	Location at which the bus service loops, empty if not a loop service.	*Raffles Blvd*

Note: any attributes not specified above but found on the data feed, should be ignored.

2.3 BUS ROUTES

URL	http://datamall2.mytransport.sg/ltaodataservice/BusRoutes	
Description	Returns detailed route information for all services currently in operation, including: all bus stops along each route, first/last bus timings for each stop.	
Update Freq	Ad-Hoc	
Response		
Attributes	**Description**	**Sample**
ServiceNo	The bus service number	*107M*
Operator	Operator for this bus service	*SBST*
Direction	The direction in which the bus travels (1 or 2), loop services only have 1 direction	*1*
StopSequence	The i-th bus stop for this route	*28*
BusStopCode	The unique 5-digit identifier for this physical bus stop	*01219*
Distance	Distance travelled by bus from starting location to this bus stop (in kilometres)	*10.3*
WD_FirstBus	Scheduled arrival of first bus on weekdays	*2025*
WD_LastBus	Scheduled arrival of last bus on weekdays	*2352*
SAT_FirstBus	Scheduled arrival of first bus on Saturdays	*1427*
SAT_LastBus	Scheduled arrival of last bus on Saturdays	*2349*
SUN_FirstBus	Scheduled arrival of first bus on Sundays	*0620*
SUN_LastBus	Scheduled arrival of last bus on Sundays	*2349*

Note: any attributes not specified above but found on the data feed, should be ignored.

2.4 BUS STOPS

URL	http://datamall2.mytransport.sg/ltaodataservice/BusStops	
Description	Returns detailed information for all bus stops currently being serviced by buses, including: Bus Stop Code, location coordinates.	
Update Freq	Ad-Hoc	
Response		
Attributes	**Description**	**Sample**
BusStopCode	The unique 5-digit identifier for this physical bus stop	*01012*
RoadName	The road on which this bus stop is located	*Victoria St*
Description	Landmarks next to the bus stop (if any) to aid in identifying this bus stop	*Hotel Grand Pacific*
Latitude	Location coordinates for this bus stop	*1.29685*
Longitude		*103.853*

Note: any attributes not specified above but found on the data feed, should be ignored.

2.5 TAXI AVAILABILITY

URL	http://datamall2.mytransport.sg/ltaodataservice/Taxi-Availability	
Description	Returns location coordinates of all Taxis that are currently available for hire. Does not include "Hired" or "Busy" Taxis.	
Update Freq	1 min	
Response		
Attributes	**Description**	**Sample**
Latitude	Latitude location coordinates.	*1.35667*
Longitude	Longitude location coordinates.	*103.93314*

Note: any attributes not specified above but found on the data feed, should be ignored.

2.6 CARPARK AVAILABILITY

URL	http://datamall2.mytransport.sg/ltaodataservice/CarParkAvailability	
Description	Returns no. of available lots for carparks in major shopping malls and developments within Orchard, Marina, HarbourFront, Jurong Lake District. *(Note: list of carparks available on this API is subset of those listed on One.Motoring and MyTransport Portals)*	
Update Freq	1 minute	
Response		
Attributes	**Description**	**Sample**
CarParkID	A unique code for this carpark	*1*
Area	Area of development / building: - Orchard - Marina - Harbfront - JurongLakeDistrict	*Marina*
Development	Shopping mall or major landmark where carpark is located	*Suntec City*
Latitude	Latitude map coordinates.	*1.29375*
Longitude	Longitude map coordinates.	*103.85718*
Lots	Number of lots available at point of data retrieval.	*352*

Note: any attributes not specified above but found on the data feed, should be ignored.

2.7 ERP RATES

URL	http://datamall2.mytransport.sg/ltaodataservice/ERPRates	
Description	Returns ERP rates of all vehicle types across all timings for each zone.	
Update Freq	Ad-Hoc	
Response		
Attributes	**Description**	**Sample**
VehicleType	Classification types: - Passenger Cars - Motorcycles - Light Goods Vehicles - Heavy Goods Vehicles - Very Heavy Goods Vehicles - Taxis	*Passenger Cars/Light Goods Vehicles/Taxis*
DayType	Available types: - Weekdays - Saturdays	*Weekdays*
StartTime	Start time for this ERP rate	*08:00*
EndTime	End time for this ERP rate	*08:05*
ZoneID	Zone for this ERP rate	*AY1*
ChargeAmount	Chargeable amount	*0.5*
EffectiveDate	Rate is effective as of this date (in YYYY-MM-DD format)	*2016-02-01*

Note: any attributes not specified above but found on the data feed, should be ignored.

2.8 ESTIMATED TRAVEL TIMES

URL	http://datamall2.mytransport.sg/ltaodataservice/EstTravelTimes	
Description	Returns estimated travel times of expressways (in segments).	
Update Freq	5 minutes	
Response		
Attributes	**Description**	**Sample**
Name	Expressway	*AYE*
Direction	Direction of travel: 1 – Travelling from east to west, or south to north. 2 – Travelling from west to east, or north to south.	*1*
FarEndPoint	The final end point of this whole expressway in current direction of travel	*TUAS CHECKPOINT*
StartPoint	Start point of this current segment	*AYE/MCE INTERCHANGE*
EndPoint	End point of this current segment	*TELOK BLANGAH RD*
EstTime	Estimated travel time in minutes	*2*

Note: any attributes not specified above but found on the data feed, should be ignored.

2.9 FAULTY TRAFFIC LIGHTS

URL	http://datamall2.mytransport.sg/ltaodataservice/FaultyTrafficLights	
Description	Returns alerts of traffic lights that are currently faulty, or currently undergoing scheduled maintenance.	
Update Freq	2 minutes – whenever there are updates	
Response		
Attributes	**Description**	**Sample**
AlarmID	Technical alarm ID	*GL703034136*
NodeID	A unique code to represent each unique traffic light node	*703034136*
Type	Type of the technical alarm - 4 (Blackout) - 13 (Flashing Yellow)	*13*
StartDate	YYYY-MM-DD HH:MM:SS.ms	*2014-04-12 01:58:00.0*
EndDate	YYYY-MM-DD HH:MM:SS.ms (empty field if this is not a scheduled maintenance)	
Message	Canning Message	*(23/1)8:58 Flashing Yellow at Bedok North Interchange/Bedok North Street 1 Junc.*

Note: any attributes not specified above but found on the data feed, should be ignored.

2.10 ROAD OPENINGS

URL	http://datamall2.mytransport.sg/ltaodataservice/RoadOpenings	
Description	Returns all planned road openings.	
Update Freq	24 hours – whenever there are updates	
Response		
Attributes	**Description**	**Sample**
EventID	ID for this road opening event	*RMAPP-201603-0900*
StartDate	Start date for works to be performed for this road opening (in YYYY-MM-DD format)	*2016-03-31*
EndDate	End date for works to be performed for this road opening (in YYYY-MM-DD format)	*2016-09-30*
SvcDept	Department or company performing this road work	*SP POWERGRID LTD - CUSTOMER PROJ (EAST)*
RoadName	Name of new road to be opened	*AH SOO GARDEN*
Other	Additional information or messages	*For details, please call 62409237*

Note: any attributes not specified above but found on the data feed, should be ignored.

2.11 ROAD WORKS

URL	http://datamall2.mytransport.sg/ltaodataservice/RoadWorks	
Description	Returns all road works being / to be carried out.	
Update Freq	24 hours – whenever there are updates	
Response		
Attributes	**Description**	**Sample**
EventID	ID for this road work	*RMAPP-201512-0217*
StartDate	Start date for the works performed for this road work (in YYYY-MM-DD format)	*2015-12-14*
EndDate	End date for works performed for this road work (in YYYY-MM-DD format)	*2016-07-31*
SvcDept	Department or company performing this road work	*SP POWERGRID LTD - REGIONAL NETWORK CENTRAL*
RoadName	Name of road where work is being performed.	*ADAM DRIVE*
Other	Additional information or messages.	*For details, please call 67273085*

Note: any attributes not specified above but found on the data feed, should be ignored.

2.12 TRAFFIC IMAGES

URL	http://datamall2.mytransport.sg/ltaodataservice/Traffic-Images	
Description	Returns links to images of live traffic conditions along expressways and Woodlands & Tuas Checkpoints.	
Update Freq	1 to 5 minutes	
Response		
Attributes	**Description**	**Sample**
CameraID	A unique ID for this camera	*5795*
Latitude	Latitude map coordinates	*1.326024822*
Longitude	Longitude map coordinates	*103.905625*
ImageLink	Link for downloading this image.	*https://s3-ap-southeast-1.amazonaws.com/mtpdm/2016-03-29/18-32/5795_1822_20160329182706_c3e176.jpg*

Note: any attributes not specified above but found on the data feed, should be ignored.

2.13 TRAFFIC INCIDENTS

URL	http://datamall2.mytransport.sg/ltaodataservice/TrafficIncidents	
Description	Returns incidents currently happening on the roads, such as Accidents, Vehicle Breakdowns, Road Blocks, Traffic Diversions etc.	
Update Freq	2 minutes – whenever there are updates	
Response		
Attributes	**Description**	**Sample**
Type	Incident Types: - Accident - Road Works - Vehicle Breakdown - Weather - Obstacle - Road Block - Heavy Traffic - Misc. - Diversion - Unattended Vehicle	*Vehicle Breakdown*
Latitude	Latitude map coordinates for the start point of this road incident	*1.30398068448214*
Longitude	Longitude map coordinates for the start point of this incident	*103.919182834377*
Message	Description message for this incident	*(29/3)18:22 Vehicle breakdown on ECP (towards Changi Airport) after Still Rd Sth Exit. Avoid lane 3.*

Note: any attributes not specified above but found on the data feed, should be ignored.

2.14 TRAFFIC SPEED BANDS

URL	http://datamall2.mytransport.sg/ltaodataservice/TrafficSpeedBands	
Description	Returns current traffic speeds on expressways and arterial roads, expressed in speed bands.	
Update Freq	5 minutes	
Response		
Attributes	**Description**	**Sample**
LinkID	Unique ID for this stretch of road	*103046935*
RoadName	Road Name	*SERANGOON ROAD*
RoadCategory	A – Expressways B – Major Arterial Roads C – Arterial Roads D – Minor Arterial Roads E – Small Roads F – Slip Roads G – No category info available	*B*
SpeedBand	Speed Band Information. Total: 4 1 – indicates speed range from 0 < 20 2 – indicates speed range from 20 < 40 3 – indicates speed range from 40 < 60 4 – indicates speed range > 60	*2*
MinimumSpeed	Minimum speed in KM/H	*20*
MaximumSpeed	Maximum speed in KM/H	*39*
Location	Latitude and Longitude map coordinates for start and end points for this stretch of road.	*1.3220591510051254* *103.86246461405193* *1.3215993547809128* *103.86315591911669*

Note: any attributes not specified above but found on the data feed, should be ignored.

2.15 VMS / EMAS

URL	http://datamall2.mytransport.sg/ltaodataservice/VMS	
Description	Returns traffic advisories (via variable message services) concerning current traffic conditions that are displayed on EMAS signboards along expressways and arterial roads.	
Update Freq	2 minutes	
Response		
Attributes	**Description**	**Sample**
EquipmentID	EMAS equipment ID	*amvms_v9104*
Latitude	Latitude map coordinates of electronic signboard.	*1.3927176306916775*
Longitude	Longitude map coordinates of electronic signboard.	*103.82618266340947*
Message	Variable Message being displayed on the EMAS display.	*VEH BREAKDOWN SH,AFT U.THOMSON*

Note: any attributes not specified above but found on the data feed, should be ignored.