Land Transport Authority

DataMall @ MyTransport.SG™ Your Transport Companion

an LTA Open Data Initiative

API Specifications & User Guide

Version 3.1
08 March 2016

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! - **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

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1. DATAMALL ACCESS CREDENTIALS

Upon successful registration via MyTransport.SG Portal, you will be issued an API Account Key. Note that this Account Key is uniquely assigned to you and is not to be shared with anyone else.

With the **Account Key**, you will need to generate your **Unique User ID** via DataMall's Authentication Tool. These two pieces of info form your API authentication credentials that are required when you make your API calls.

Steps to obtaining your API authentication credentials:

1. Go to DataMall's Authentication Tool - http://datamall.mytransport.sg/tool.aspx
2. Enter your **Account Key**.
3. Click on the button Generate GUID
4. Your **Unique User ID** appears. You're good to go!

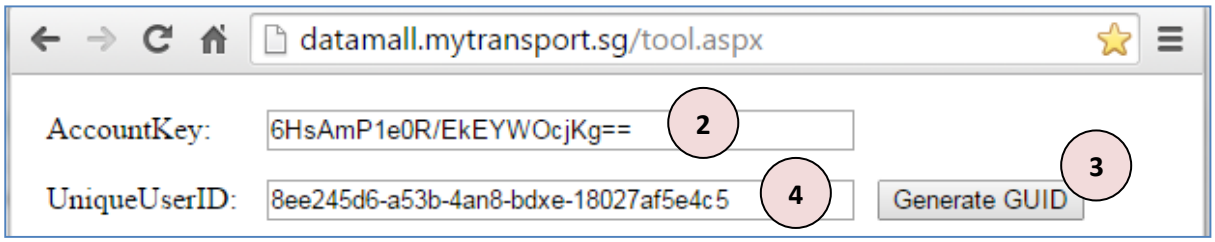

Figure 1-1 – Obtaining API authentication credentials

2. MAKING API CALLS

API calls will need to be made programmatically and in regular intervals to obtain the live streaming data for you respective development or research needs. For testing and illustration purposes, we will make an API call via a reliable third-party HTTP web client – Request Maker.

Steps to making an API call:

1. Go to http://requestmaker.com/
2. At the top right corner of the page, set request type to GET.
3. Enter the dataset URL (refer to subsequent specs in this document) in the field **Request URL**. Note that the URLs are what you should subsequently apply to your codes to access the data programmatically.
4. Under **Request Headers**, click on the Add button to include two additional headers.
5. Following the example in Figure 2-1 below, populate the first two headers with your access credentials.
6. A custom header of "accept" allows you to specify the response format of your API call. Enter "application/json" for JSON format, or "application/atom+xml". This allows you to specify the response format of the API.
7. Click on the Submit button.

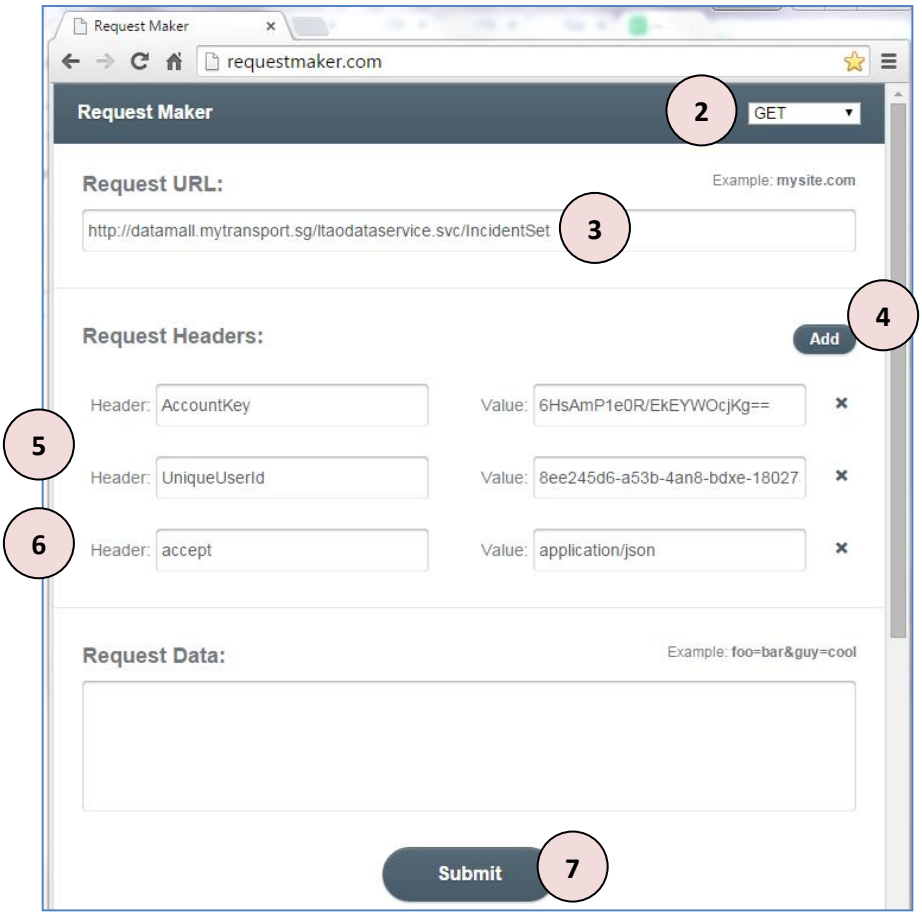

Figure 2-1

Figure 2-2 below shows the response in JSON format, displayed under the **Response Body** section, of an API call made on the Traffic Incidents dataset.

Response Body:


```
{
"__metadata": {
"uri": "http://datamall.mytransport.sg/LTAoDataService.svc/IncidentSet(9357334)", "type":
"LTAModel.Incident"
}, "IncidentID": 9357334, "Message": "(12/4)23:32 Roadworks on North Bridge Road (towards Tan Quee
Lan Street) after Rochor Road.", "Latitude": 1.2994540875282921, "Longitude": 103.85634585628669,
"Type": "Road Work", "Summary": null, "CreateDate": "\/Date(1428853813560)\/", "Distance": 0
}, {
"__metadata": {
"uri": "http://datamall.mytransport.sg/LTAoDataService.svc/IncidentSet(9357335)", "type":
"LTAModel.Incident"
}, "IncidentID": 9357335, "Message": "(12/4)23:32 Roadworks on North Bridge Road near North Bridge
Road/Stamford Road Junction.", "Latitude": 1.2934429919457973, "Longitude": 103.85197851637307,
"Type": "Road Work", "Summary": null, "CreateDate": "\/Date(1428853813570)\/", "Distance": 0
}, {
"__metadata": {
"uri": "http://datamall.mytransport.sg/LTAoDataService.svc/IncidentSet(9357336)", "type":
"LTAModel.Incident"
}, "IncidentID": 9357336, "Message": "(12/4)23:31 Roadworks on Mandai Road (towards SLE) after Lorong
Lada Hitam. Avoid left lane.", "Latitude": 1.4158620196651637, "Longitude": 103.80024992037811, "Type":
"Road Work", "Summary": null, "CreateDate": "\/Date(1428853813577)\/", "Distance": 0
}, {
"__metadata": {
```


Figure 2-2: API Response as shown on Request Maker.

API responses are limited to a max of 50 records of the dataset per call. To retrieve more records, you need to append the following parameter **$skip=X**' to the API call (URL), with X being a number of records to skip.

For example, if you want to retrieve the 51st to the 100th record for the Bus Stops dataset, the API call should be:

*http://datamall.mytransport.sg/ltaodataservice.svc/BusStopCodeSet**?$skip=50***

To retrieve the 151st to 200th record, supply '***?$skip=150***', and so on. Remember, each URL call returns only a max of 50 records!

Here's an example of how you can retrieve the data programmatically. This example is coded in Python 2.7. Note that the API call made here 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==',
                'UniqueUserID' : '8ee245d6-a53b-4an8-bdxe-18027af5e4c5',
                'accept' : 'application/json'} #Request results in JSON

    #API parameters
    uri = 'http://datamallplus.cloudapp.net' #Resource URL
    path = '/ltaodataservice.svc/IncidentSet?'

    #Query parameters
    params = {'Latitude':'1.304980',    #Search within a radius
              'Longitude':'103.831984', # from a central point
              'Distance':'5000'}; # Distance in metres

    #Build query string & specify type of API call
    target = urlparse(uri + path + urllib.urlencode( params ) )
    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)
```

3. API SPECIFICATIONS

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	Lists no. of available carpark lots for major shopping malls and developments in Orchard, Marina, HarbourFront, Jurong Lake District.
7	ERP Rates	Lists ERP rates for all vehicle types across all timings – weekdays / weekends / public holidays.
8	Estimated Travel Times	Lists estimated travel times on expressways in segments.
9	Faulty Traffic Lights	Lists alerts of traffic light signals that are currently faulty, or currently undergoing scheduled maintenance.
10	Road Openings	Lists planned road openings.
11	Road Works	Lists road works currently being carried out.
12	Traffic Images	Contains links to images of live traffic conditions along expressways in Singapore, and the Woodlands & Tuas Checkpoints.
13	Traffic Incidents	Lists traffic incidents currently occurring on the roads, including Accidents, Vehicle Breakdowns, Obstacles, Road Blocks, Traffic Diversions etc.
14	Traffic Speed Bands	Current traffic speeds on expressways and arterial roads, expressed in speed bands.
15	VMS / EMAS	Lists traffic advisories (via variable message services) concerning current traffic conditions that are displayed on EMAS signboards along expressways and arterial roads.

3.1 BUS ARRIVAL

URL	http://datamall2.mytransport.sg/ltaodataservice/BusArrival		
Description	Returns real-time Bus Arrival information for Bus Services at a queried Bus Stop, including: Estimated Time of Arrival (ETA), Estimated Location, Load info.		
Update Freq	1 minute		
Request			
Parameters	**Description**	**Mandatory**	**Sample**
BusStopID	Bus stop reference code	Yes	*83139*
ServiceNo	Bus service number	No	*15*
SST	Request for ETA in SST	No	*True* (**case sensitive**; default: False)
Response			
Attributes	**Description**		**Example**
ServiceNo	Bus service number		*15*
Status	Bus Status: ▪ In Operation ▪ Not In Operation		*In Operation*
Operator	Transport Operator code: ▪ SBST ▪ SMRT		*SBST*
OriginatingID	Reference code for first bus stop in this service's route sequence.		*77009*
TerminatingID	Reference code for last bus stop in this service's route sequence.		*77131*
NextBus	Attributes for next approaching bus		
SubsequentBus	Attributes for subsequent bus		
SubsequentBus3	Attributes for third oncoming bus		
^ EstimatedArrival	ETA date-time in GMT (default), OR ETA date-time in SST (if SST = True)		*2015-03-02T23:20:36+00:00* *2015-03-03T07:20:24+08:00*
^ Latitude	Estimated location coordinates of 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	Bus occupancy / crowding: ▪ Seats Available ▪ Standing Available ▪ Limited Standing		*Standing Available*
^ Feature	Indicates wheel-chair accessible bus: ▪ "WAB" ▪ (blank)		*WAB*

^ Values of real-time attributes may occasionally NOT appear on the API response, i.e. empty values ("") or null, if this API service is temporarily unavailable during server downtime etc. You are advised to factor such occurrences in your processing logic.

Sample API Calls

Example 1:
http://datamall2.mytransport.sg/ltaodataservice/BusArrival?BusStopID=83139&SST=True
(refer below for sample response)

Example 2:
http://datamall2.mytransport.sg/ltaodataservice/BusArrival?BusStopID=83139&ServiceNo=15
(this API call will return Bus Arrival info for ONLY Bus 15)

Sample Response for Example 1:


```
{
  "odata.metadata":
"http://datamall2.mytransport.sg/ltaodataservice/$metadata#BusArrival@Element",
  "BusStopID": "83139",
  "Services": [
    {
      "ServiceNo": "15",
      "Status": "In Operation",
      "Operator": "SBST",
      "OriginatingID": "77009",
      "TerminatingID": "77131",
      "NextBus": {
        "EstimatedArrival": "2015-03-03T07:20:24+08:00",
        "Latitude": "1.421179",
        "Longitude": "103.831477",
        "VisitNumber": "1",
        "Load": "Standing Available",
        "Feature": "WAB"
      },
      "SubsequentBus": {
        "EstimatedArrival": "2015-03-03T07:30:30+08:00",
        "Latitude": "1.412379",
        "Longitude": "103.832347",
        "VisitNumber": "1",
        "Load": "Seats Available",
        "Feature": ""
      },
      "SubsequentBus3": {
        "EstimatedArrival": "2015-03-03T07:40:36+08:00",
        "Latitude": "1.422239",
        "Longitude": "103.8321367",
        "VisitNumber": "1",
        "Load": "Seats Available",
        "Feature": "WAB"
      }
    },
    {
      "ServiceNo": "155",
      "Status": "In Operation",
      "Operator": "SBST",
      "OriginatingID": "52009",
      "TerminatingID": "52501",
      "NextBus": {
        "EstimatedArrival": "2015-03-03T07:22:37+08:00",
        "Latitude": "1.412379",
        "Longitude": "103.832347",
        "VisitNumber": "2",
        "Load": "Seats Available",
        "Feature": ""
      },
```

```
      "SubsequentBus": {
        "EstimatedArrival": "2015-03-03T07:25:17+08:00",
        "Latitude": "1.412379",
        "Longitude": "103.832347",
        "VisitNumber": "1",
        "Load": "Seats Available",
        "Feature": "WAB"
      }
      "SubsequentBus3": {
        "EstimatedArrival": "2015-03-03T07:30:27+08:00",
        "Latitude": "1.412379",
        "Longitude": "103.832347",
        "VisitNumber": "2",
        "Load": "Seats Available",
        "Feature": "WAB"
      }
    }
  ]
}
```

Advisement on Front-End Implementation Logic

1. **[EstimatedArrival] Referencing Singapore Standard Time (SST)**

   Applications should reference the SST, and NOT the mobile device time in deriving the bus arrival duration. To illustrate:

   Reference Time:
   Singapore Standard Time: 08:40 am
   Mobile Device Time: 08:35 am
   *API EstimatedArrival: 08:43 am

   Derivation of Bus Arrival Duration:
   Using SGP Time
   *API EstimatedArrival – Singapore Standard Time = 3 mins ✓
   Using Mobile Device Time
   *API EstimatedArrival – Mobile Device Time = 8 mins ✗

   *Assumes EstimatedArrival in SST. If you obtain this in (the default) GMT, remember to include +8 hours (to convert to SST) before deriving the Bus Arrival Duration.

2. **[EstimatedArrival] Rounding of Seconds**

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

   Examples:
   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. **[EstimatedArrival] Display of Messages for <u>NO ETA</u> Scenarios**

   a. Bus is in operation.
      - <Status> reflects "*In Operation*".
      - <EstimatedArrival> reflects ETA.

   b. Bus is in operation, but no estimated timing available.
      - <Status> reflects "*In Operation*".
      - <EstimatedArrival> is empty "" or null.

   c. Bus is not in operation.
      - <Status> reflects "*Not In Operation*".
      - <EstimatedArrival> is empty "" or null.

   For scenarios (b) and (c), you may display the following in-app message, or any other appropriate / user-friendly messages.

   Scenario (b): "*No Est. Available*"
   Scenario (c): "*Not Operating Now*"

4. **[EstimatedArrival] Availability & Display of ETAs Outside Operating Hours**

   It is possible for ETAs to appear on the API response (illustrated below) even though buses are not operating at the point of API call. Such scenarios include:

   a. Before first buses leave the Bus Interchanges / Depots in the mornings.
   b. When last buses at night are running behind schedule and yet to reach the terminating stops.

      - <Status> reflects *"Not In Operation"*.
      - <EstimatedArrival> reflects ETA.

   Under such scenarios, you should display the ETAs as opposed to *"Not Operating Now"*. Only when there are no ETAs present, should appropriate messages be displayed – refer to advisement item 3.

5. **[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.

6. **[Feature] Wheelchair Accessible Buses**

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

Bug Log for Bus Arrival API

SN	Attributes	Description	Date Logged	Date Fixed
1	#VisitNumber	#VisitNumber does not display '2' for services that visit the same bus stop twice.	12-Dec-2015	24-Feb-2016
2				
3				
4				
5				
6				

3.2 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	
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.

3.3 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	
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.

3.4 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	
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.

3.5 TAXI AVAILABILITY

API URL	http://datamall2.mytransport.sg/ltaodataservice/TaxiAvailability	
Description	Returns location coordinates of all Taxis that are currently available for hire. Does not include "Hired" or "Busy" Taxis.	
Update Freq	2 mins	
Response		
Attributes	**Description**	**Sample**
Latitude	Latitude location coordinates.	*1.336980*
Longitude	Longitude location coordinates.	*103.705830*

3.6 CARPARK AVAILABILITY

Dataset URL	http://datamall.mytransport.sg/ltaodataservice.svc/CarParkSet	
Description	Lists no. of available carpark lots for major shopping malls and developments in Orchard, Marina, HarbourFront, Jurong Lake District. *(Note: list of carparks in this dataset do not correlate to those listed in Carpark Rates – Static Data listed on MyTransport.SG Portal.)*	
Update Freq	1 minute	
Attributes	**Description**	**Sample**
CarParkID	A unique code for this carpark	1
Area	Area of development / building - Marina - Orchard - Harbfront - JurongLakeDistrict	Marina
Development	Building or landmark where carpark is situated	Suntec City
Lots	Number of lots available at point of data retrieval.	173
Latitude	Latitude map coordinates.	1.2935
Longitude	Longitude map coordinates.	103.8527

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

3.7 ERP RATES

Dataset URL	http://datamall.mytransport.sg/ltaodataservice.svc/ERPRateSet	
Description	Lists ERP rates for all vehicle types across all timings – weekdays / weekends / public holidays. This dataset does not change / refresh in real-time. *(Note: This dataset does not correlate to those listed in ERP Gantries – Static (Geospatial) Data listed on MyTransport.SG Portal.)*	
Update Freq	(whenever there are updates)	
Attributes	**Description**	**Sample**
VCCType	Type of vehicles pertaining to this ERP charge. 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 - Sundays - Public Holidays - Eve of Major Public Holidays	Weekdays
EffectiveDate	Rate is effective as of this date YYYY-MM-DD	2014-02-03
StartTime	Start time for this ERP rate	07:30
EndTime	End time for this ERP rate	07:35
ZoneID	Zone in which this ERP charge presides	CT1
ChargeAmount	Chargeable amount	1

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

3.8 ESTIMATED TRAVEL TIMES

Dataset URL	http://datamall.mytransport.sg/ltaodataservice.svc/TravelTimeSet	
Description	Lists estimated travel times on expressways in segments.	
Update Freq	5 minutes	
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
EstimatedTime	Estimated travel time in minutes	1

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

3.9 FAULTY TRAFFIC LIGHTS

Dataset URL	http://datamall.mytransport.sg/ltaodataservice.svc/AlarmInfoSet	
Description	Lists alerts of traffic light signals that are currently faulty, or currently undergoing scheduled maintenance.	
Update Freq	2 minutes – whenever there are updates	
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.

3.10 ROAD OPENINGS

Dataset URL	http://datamall.mytransport.sg/ltaodataservice.svc/PlannedRoadOpeningSet	
Description	Lists planned road openings.	
Update Freq	24 hours – whenever there are updates	
Attributes	**Description**	**Sample**
RoadID	ID for this road opening event	RMI1495
StartDate	Start date for the works performed for this road opening	2013-09-01
EndDate	End date for works performed for this road opening	2014-02-28
SvcDept	Department or company performing this road work	CITYNET INFRASTRUCTURE MANAGEMENT PRIVATE LIMITED
RoadName	Road name in which this road work is being performed	BEDOK RESERVOIR CRESCENT
Other	Additional information or messages	For details, please call 96502572

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

3.11 ROAD WORKS

Dataset URL	http://datamall.mytransport.sg/ltaodataservice.svc/RoadWorkSet	
Description	Lists road works currently being carried out.	
Update Freq	24 hours – whenever there are updates	
Attributes	**Description**	**Sample**
RoadID	ID for this road work	RMAPP-201211-0593
StartDate	Start date for the works performed for this road opening	2012-11-28T00:00:00
EndDate	End date for works performed for this road opening	2014-12-29T00:00:00
SvcDept	Department or company performing this road work	SP POWERGRID LTD –REGIONAL NETWORK CENTRAL
RoadName	Road name in which this road work is being performed.	ADMIRALTY DRIVE
Other	Additional information or messages.	For all details, please call 61234567.

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

3.12 TRAFFIC IMAGES

Dataset URL	http://datamall.mytransport.sg/ltaodataservice.svc/CameraImageSet	
Description	Contains links to images of live traffic conditions along expressways in Singapore, and the Woodlands & Tuas Checkpoints.	
Update Freq	1 to 5 minutes	
Attributes	**Description**	**Sample**
CameraID	A unique ID for this camera	5795
Latitude	Latitude map coordinates	1.3260248220968
Longitude	Longitude map coordinates	103.905625036063
ImageURL	URL for downloading this image.	http://datamall.cloudapp.net/GetCameraImage.ashx?GUID=23a581d3-67c3-457b-8a24-baeed5ea896b

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

3.13 TRAFFIC INCIDENTS

Dataset URL	http://datamall.mytransport.sg/ltaodataservice.svc/IncidentSet	
Description	Lists traffic incidents currently occurring on the roads, including Accidents, Vehicle Breakdowns, Obstacles, Road Blocks, Traffic Diversions etc.	
Update Freq	2 minutes – whenever there are updates	
Attributes	**Description**	**Sample**
Type	Incident Types: - Accident - Road Works - Vehicle Breakdown - Weather - Obstacle - Road Block - Heavy Traffic - Misc. - Diversion - Unattended Vehicle	Accident
Latitude	Latitude map coordinates for the start point of this road incident	103.845422837
Longitude	Longitude map coordinates for the start point of this incident	1.32958592117
Message	Description message for this incident	(23/1)10:12 Accident in the CTE Tunnel (towards AYE) at Havelock Exit.

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

3.14 TRAFFIC SPEED BANDS

Dataset URL	http://datamall.mytransport.sg/ltaodataservice.svc/TrafficSpeedBandSet	
Description	Current traffic speeds on expressways and arterial roads, expressed in speed bands. *(Note: Total no. of speed band records returned from API-calls may vary from 4,000 to 58,000. Expect updates to this dataset from May 2015.)*	
Update Freq	5 minutes	
Attributes	**Description**	**Sample**
LinkID	Unique ID for this stretch of road	103003846
RoadName	Road name.	JALAN LIMAU MANIS
RoadCategory	A – Expressways B – Major Arterial Roads C and below – minor or other roads.	E
Band	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	3
MinimumSpeed	Minimum speed in KM/H	40
MaximumSpeed	Maximum speed in KM/H	59
Location	Latitude and Longitude map coordinates for start and end points for this stretch of road.	1.32482526143164 103.949634931859 1.32463484279186 103.949358833909

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

3.15 VMS / EMAS

Dataset URL	http://datamall.mytransport.sg/ltaodataservice.svc/VMSSet	
Description	Lists 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	
Attributes	**Description**	**Sample**
EquipmentID	EMAS equipment ID	VMS_0026
Message	Variable Message being displayed on the EMAS display.	SPEED CAMERA AHEAD
Latitude	Latitude map coordinates of electronic signboard.	1.3520126023225627
Longitude	Longitude map coordinates of electronic signboard.	103.8996617438024

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