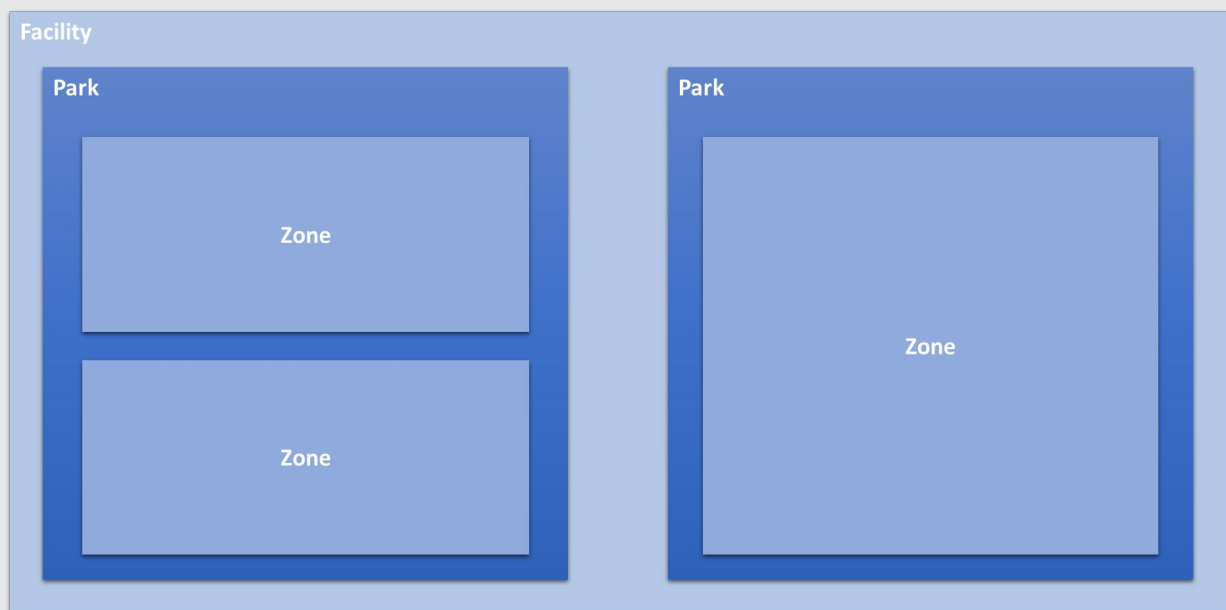# Car Park API

1   Car Park API

The Car Park API provides real time and historical occupancy of selected car parks. This API provides the occupancy for Transport Park&Ride car parks. Transport Park&Ride is designed to free-up more spaces at commuter car parks for those who want to travel on public transport. These car parks are mapped to TfNSW Transit Stop Numbers (TSN) and Facility IDs. The data feed contains the parking occupancy information by type in real time.

An occupancy notification can be sent each time the car park facility logs a standard entry or exit transaction, or at a regular intervals. Refer to Section 4 Car Parks for update frequency.

The car parks can be configured differently. Below depicts an example of a car park facility configuration. Each facility can have one or more parks. Each park can have one or more zones.

Terms and Conditions

Transport for NSW provides access to the Car Park API with Car Park Occupancy on the following terms:

- The data is provided by outsource systems, which is outside the control of TfNSW.

- The occupancy data is an estimated count of vehicle in the car park as there are various reasons that may affect the count.

- TfNSW has provided some recommendations on representation of data to the customer to reduce confusion/interpretation by the customer.

- This API specification will be changed in the future to provision for other car park types and systems and aligned to TfNSW transmodel.

- Data may be reset at any time to handle errors caused by power outages, broken boom gates or any other issues that might cause operations issues.

2   Data Structure

High Level Data Explanation

Facility information

A feed listing all the car park facilities will be returned if there is no facility ID provided in the request.

Field Name	Data Type	Field Description
facility_id	string	The ID assigned to the facility.
facility_name	string	The name given to the facility.

Car park occupancy

Field Name	Data Type	Field Description
time	string	The time in the event. It is in seconds since year 2000. Note: Please do not use this field. Instead, use MessageDate to retrieve the date and time of the feed.
spots	string	Total number of parking spots in the car park. Note: The number of spots does not include motorcycle and disabled bay.
zones	array	This contains the following: • ID for the zone • Name for the zone • Total number of parking spots in the zone • Occupancy data for the zone • ID for the parent zone Note: This information is not accurate for Ashfield, Kogarah, Seven Hills, Manly Vale and Brookvale car parks. However, it is accurate for other car parks.

Car Park API

Field Name	Data Type	Field Description
parkID	string	This is a single digit static database identifier for the car park.
occupancy	object	Occupancy broken down by type. Refer to occupancy object table below.
MessageDate	string	Date and time of the event.
facility_id	string	The ID assigned to the car park facility.
facility_name	string	The name given to the car park facility.
tsn	string	Transit Stop Number. A unique number identifying a stop or group of stops on the TfNSW network. It is made up of the post code of the suburb in which the transit stop is located and the next available sequential number. e.g. 2000001, 2000002. Note: transit stop numbers will not change – even if there is a change in the relevant postcode.
tfnsw_facility_id	string	This ID is used by TfNSW to identify the car park facility. The format is <TSN><Carpark Type><id>. Carpark Type: TPR - Transport Park&Ride CCP – Commuter Car Park

Occupancy

Field Name	Data Type	Field Description
loop	string	This is the counter for the loops being armed or disarmed.
total	string	This is the counter information for the number of vehicles in the car park. Note: Use this to get an accurate estimates of the number of vehicles in the car park.
monthlies	string	These are the number of vehicles in the car park using monthlies or monthly parking scheme. This is not used in this implementation.
open_gate	string	This is information when the car park operator manually opens the gate. This is not used in this implementation.

Car Park API

Field Name	Data Type	Field Description
transients	string	This is the counter for the number of vehicles with active transactions in the system. Note: Manual opening of gantries does not decrease this count.

Sample feed

```json
{
  "time": "653415832",
  "spots": "228",
  "zones": [
    {
      "spots": "228",
      "zone_id": "1",
      "occupancy": {
        "loop": "131507",
        "total": null,
        "monthlies": "0",
        "open_gate": null,
        "transients": "141"
      },
      "zone_name": "SYD318 Ashfield Park and Ride",
      "parent_zone_id": "0"
    }
  ],
  "ParkID": 1,
  "occupancy": {
    "loop": null,
    "total": "138",
    "monthlies": "0",
    "open_gate": "0",
    "transients": "142"
  },
  "MessageDate": "2020-09-14T16:23:52",
  "facility_id": "486",
```

```
"facility_name": "Ashfield",
 "tsn": "213110",
  "tfnsw_facility_id": "213110TPR001"
}
```

3   Recommendation

Transport for NSW recommends the following implementation:

1. To calculate the number of available parking lots, it is recommended to use the following formula.

    Availability = spots – total

2. Displays the number of parking lots left in the car park facility. Use the "total" in facility occupancy object for an accurate estimates of occupancy information of the car park.

3. Calculate and display "Full" when the available parking lots drop below 1.

4. Display "Almost Full" when the available parking lots drop to less than 10%. This figure should be configurable and adjusted according to customers' feedbacks.

5. To manage customers' expectations, indicate that the car park data may differ from actual parking. It is recommended to put that the approximate sign (~) to inform the customers that this is an estimated car park availability information.

4   Car Parks

ID	Name	TSN	TSN Coordinates	Number of spots	Update Frequency
1	Tallawong Station Car Park **(Historical Only)**	2155384	-33.69163 150.906022	1004	60s
2	Kellyville Station Car Park **(Historical Only)**	2155382	-33.713514 150.935304	1374	60s
3	Bella Vista Station Car Park **(Historical Only)**	2153478	-33.730592 150.944024	800	60s
4	Hills Showground Station Car Park **(Historical Only)**	2154392	-33.72782 150.987345	600	60s
5	Cherrybrook Station Car Park **(Historical Only)**	2126158	-33.736703 151.031977	400	60s
6	Gordon Henry St North Car Park	207210	-33.756009 151.154528	213	15s

Car Park API

ID	Name	TSN	TSN Coordinates	Number of spots	Update Frequency
7	Kiama Car Park	253330	-34.672518 150.854695	42	15s
8	Gosford Car Park	225040	-33.423883 151.341711	1057	On counter change
9	Revesby Car Park	221210	-33.95246 151.014838	934	On counter change or every 10mins
10	Warriewood Car Park	2101131	33.697777 151.300667	244	15s
11	Narrabeen Car Park	2101130	-33.713514 151.297315	46	On counter change or every 10mins
12	Mona Vale Car Park	2103108	-33.677276 151.305146	68	15s
13	Dee Why Car Park	2099207	-33.752797 151.286485	117	On counter change or every 10mins
14	West Ryde Car Park	211420	-33.807172 151.090229	151	On counter change or every 10mins
15	Sutherland East Parade Car Park	223210	-34.031787 151.05719	373	On counter change
16	Leppington Car Park	217933	-33.9544 150.8081	1884	On counter change or every 10mins
17	Edmondson Park South Car Park	217426	-33.9693 150.8587	1429	On counter change or every 10mins
18	St Marys Car Park	276010	-33.762256 150.776029	682	On counter change
19	Campbelltown Farrow Rd North Car Park	256020	-34.063835 150.813929	68	On counter change or every 10mins

Car Park API

ID	Name	TSN	TSN Coordinates	Number of spots	Update Frequency
20	Campbelltown Hurley Steet South Car Park	256020	-34.063835 150.813929	118	On counter change or every 10mins
21	Penrith Combewood At-Grade Car Park	275010	-33.750055 150.696135	230	On counter change or every 10mins
22	Penrith Combewood Multi-Level Car Park	275010	-33.750055 150.696135	1144	On counter change or every 10mins
23	Warwick Farm Car Park	217010	-33.91345 150.935036	910	On counter change
24	Schofields Car Park	276220	-33.704477 150.873817	700	On counter change or every 10mins
25	Hornsby Jersey St Car Park	207720	-33.702801 151.098494	145	On counter change or every 10mins
26	Tallawong P1 Car Park	2155384	-33.69163 150.906022	121	On counter change or every 10mins
27	Tallawong P2 Car Park	2155384	-33.69163 150.906022	455	On counter change or every 10mins
28	Tallawong P3 Car Park	2155384	-33.69163 150.906022	397	On counter change or every 10mins
29	Kellyville North Car Park	2155382	-33.713514 150.935304	351	On counter change or every 10mins
30	Kellyville South Car Park	2155382	-33.713514 150.935304	964	On counter change or every 10mins

Car Park API

ID	Name	TSN	TSN Coordinates	Number of spots	Update Frequency
31	Bella Vista Car Park	2153478	-33.730592 150.944024	777	On counter change or every 10mins
32	Hills Showground Car Park	2154392	-33.72782 150.987345	584	On counter change or every 10mins
33	Cherrybrook Car Park	2126158	-33.736703 151.031977	384	On counter change or every 10mins
486	Ashfield Car Park	213110	-33.8875506079 151.125504163	225	On counter change or every 10mins
487	Kogarah Car Park	221710	-33.9621493059 151.132641462	259	On counter change or every 10mins
488	Seven Hills Car Park	214710	-33.774430434 150.936513359	1613	On counter change or every 10mins
489	Manly Vale Car Park	(Parent Stop TSN) 2093117	-33.786247 151.26671	142	On counter change or every 10mins
490	Brookvale Car Park	210020	-33.767508 151.268541	246	On counter change or every 10mins

Notes:

- A parent stop number 2093117 was created for Manly Vale stops 209325 and 209326. This was created as it is not associated with a station, ferry wharf or light rail stop. Please add this parent stop manually where required as it is not in the GTFS feed.

- The number of spots provided in the table are for quick reference. Do not hard code these figures as they may change from time to time. You can get the number of spots for each car park in the feed.

- There are works expected at Kiama which may intermittently impact the real time parking availability.

5 Car Park Entry Locations

Name	Zone ID	Zone Name	Entry Coordinates
Tallawong Station	CPS-CUD1	Tallawong Station At-Grade A Car Park	-33.693222 150.905278
Tallawong Station	CPS-CUD2	Tallawong Station At-Grade B Car Park	-33.692972 150.904417
Tallawong Station	CPS-CUD3	Tallawong Station At-Grade D Car Park	-33.69375 150.903833
Kellyville Station	CPS-KVE1	Kellyville Station Northern At-Grade Car Park	-33.711167 150.934444
Kellyville Station	CPS-KVE2	Kellyville Station Southern Multi-Level Car Park	-33.715083 150.93625
Bella Vista Station	CPS-BLV	Bella Vista Station Multi-Level Car Park	-33.727361 150.941694
Hills Showground Station	CPS-SHW	Hills Showground Station Multi-Level Car Park	-33.727528 150.985417
Cherrybrook Station	CPS-CHE	Cherrybrook Station Multi-Level Car Park	-33.736972 151.033556