

# Appendix J : YLV Master Plan Parking Demand Analysis Technical Report

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# YLW MASTER PLAN PARKING DEMAND ANALYSIS

13 July 2015

# Study Overview

**The Parking Demand and Supply Analysis is a sub-task of the Ground Access and Parking Requirements component of the development of the YLW Master Plan 2045.**

Although parking traffic data was included in the 2014 Airport Traffic Study, more detailed analyses of lot utilization patterns is needed to fully project short, medium and long-term parking requirements, in particular to identify the potential need and triggers for a parkade facility at the ATB.

This Parking Demand and Supply Analysis provides a more detailed and up-to-date portrait of future parking requirements at the airport, including public, car rental, and employee parking.

# A 3-Step Approach

This Parking Demand and Supply Analysis is subdivided into three steps as follows:



# List of Data Reviewed

Data	Source
1. Peak parking demand	Kelowna International Airport Traffic Study, MMM Group, September 2014
2. Ground access mode	Kelowna International Airport Ground Access Study, InterVISTAS Consulting Inc., October 2010 Kelowna Airport Service Quality Study 2014 Annual Report, Airports Council International, 2015
3. Air passengers forecast	Kelowna International Airport Master Plan 2045, SNC-Lavalin, April 2015
4. Parking duration	Preliminary Feasibility Study for a Public/Private Partnership for the Construction of a Parkade at Kelowna Airport, Airport Performance Group, May 1998
5. Parking profile	Vehicle Activity Report Summary, 2014
6. Flight schedule	Gate scheduling March 2015
7. Air passengers statistics	Statistics and Concessions

# Existing Parking Inventory



Source: Kelowna International Airport Traffic Study, September 2014

1. Valet vehicles are stored in the Short Term Parking lot. Passengers drop off their vehicles at the kiosk located at the south end of the terminal building. Vehicles will be ready in the same location when passengers return home from their flight.
2. During Christmas peak, employee parking will become overflow parking. The employees will park at the gravel lot.

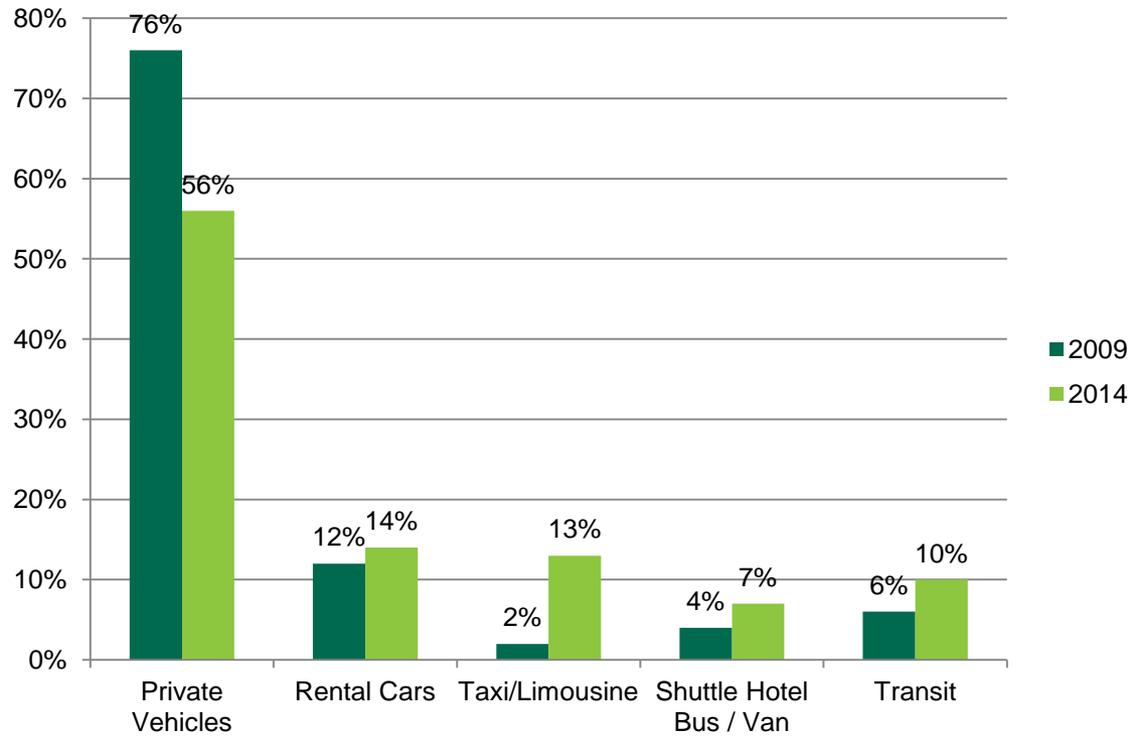
# Ground Access Mode Survey Results 2009

Mode	Percentage
Long Term Parking	17%
Short Term Parking	29%
Valet Parking	1%
Metered Parking	7%
Dropped off / Picked up	22%
Car Rental	12%
Taxi / Limousine	2%
Shuttle Hotel Bus / Van	4%
Transit	6%
Total	100%

Private vehicles accounted for 76% in 2009 and have dropped down to 56% in 2014

Source: 2009 Kelowna International Airport Customer Satisfaction and Benchmarking Survey

# Ground Access Mode



Sources: 2009 Kelowna International Airport Customer Satisfaction and Benchmarking Survey  
2014 Kelowna Airport Service Quality Study

# Parking Rate

Type of Parking	Parking Rate
<b>Long Term Parking</b>	First 15 minutes are free \$1.50 per hour part thereof (includes first 15 minutes, to a maximum of \$12.00 per 24 hours and a weekly maximum rate of \$62.00)
<b>Short Term Parking</b>	First 15 minutes are free. \$1.50 for the 1 <sup>st</sup> hour or part thereof (include first 15 minutes) \$2.50 for each additional hour or part thereof to a maximum of \$18.50 per 24 hours
<b>Metered Parking</b>	\$ 1.75 for 30 minutes
<b>Valet Parking</b>	A one-time fee of \$15.00 is added to your normal parking cost, such as daily, weekly or Gold Pass service
<b>Reserved Permit Parking</b>	\$900.00 for 6-month period

# Parking Duration – Metered Parking

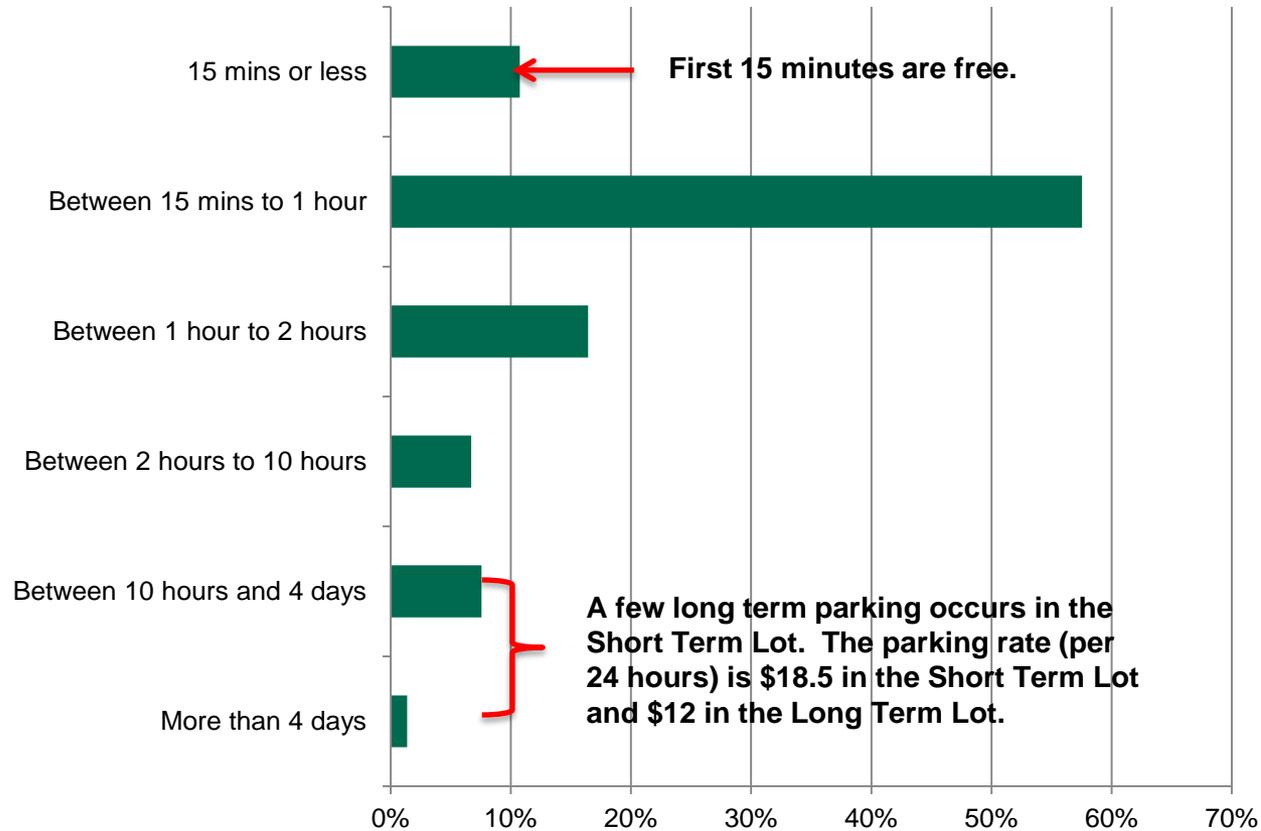
The maximum duration for metered parking is 30 minutes.

In the past, the metered parking stalls were full, occupants of private vehicles would tend to circle around until a metered parking stall became available or until the party they were picking up presented themselves at a curb-side location.

Since the airport has permitted free use of the short and long term for first 15 minute interval, occupants of private vehicles can use the lots while waiting for arrival passengers instead of using metered parking.



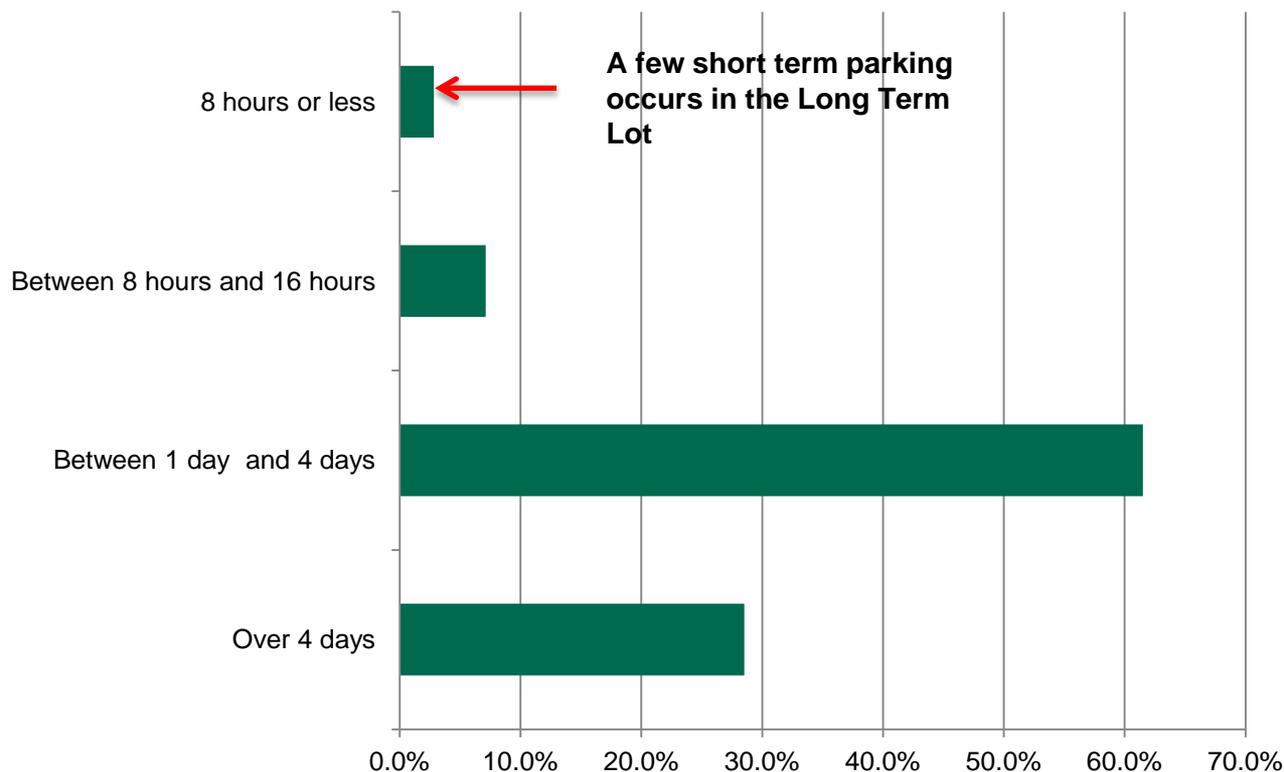
# Parking Duration – Short Term Lot



\*A total of 16,041 parking tickets were analyzed over a four week period.

Sources: Preliminary Feasibility Study for a Public/Private Partnership for the Construction of a Parkade at Kelwona Airport, 1998

# Parking Duration – Long Term Lot



\*A total of 1,725 parking tickets were analyzed over a four week period.

Sources: Preliminary Feasibility Study for a Public/Private Partnership for the Construction of a Parkade at Kelwona Airport, 1998

# Peak Parking Utilization in May 2014

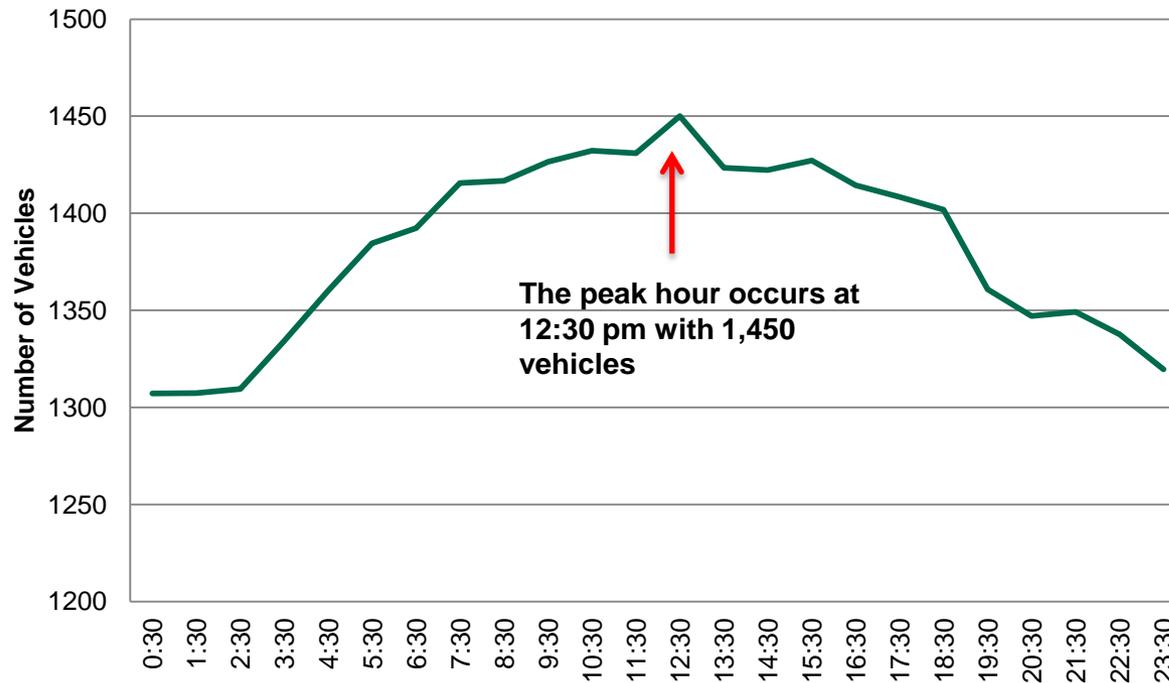
Parking	May 2014		
	Number of Parked Vehicles	Total Number of Stalls	% Occupied
Long Term	1,230	1,983	62 %
Short Term	220	464	47 %
Employee	100	326	31%

Valet parking is estimated to be equal to 72 based on the existing ratio between Valet Parking and Long Term Parking (1:17). This ratio is observed from the 2009 Kelowna International Airport Customer Satisfaction and Benchmarking Survey.

Source: Kelowna International Airport Traffic Study, September 2014



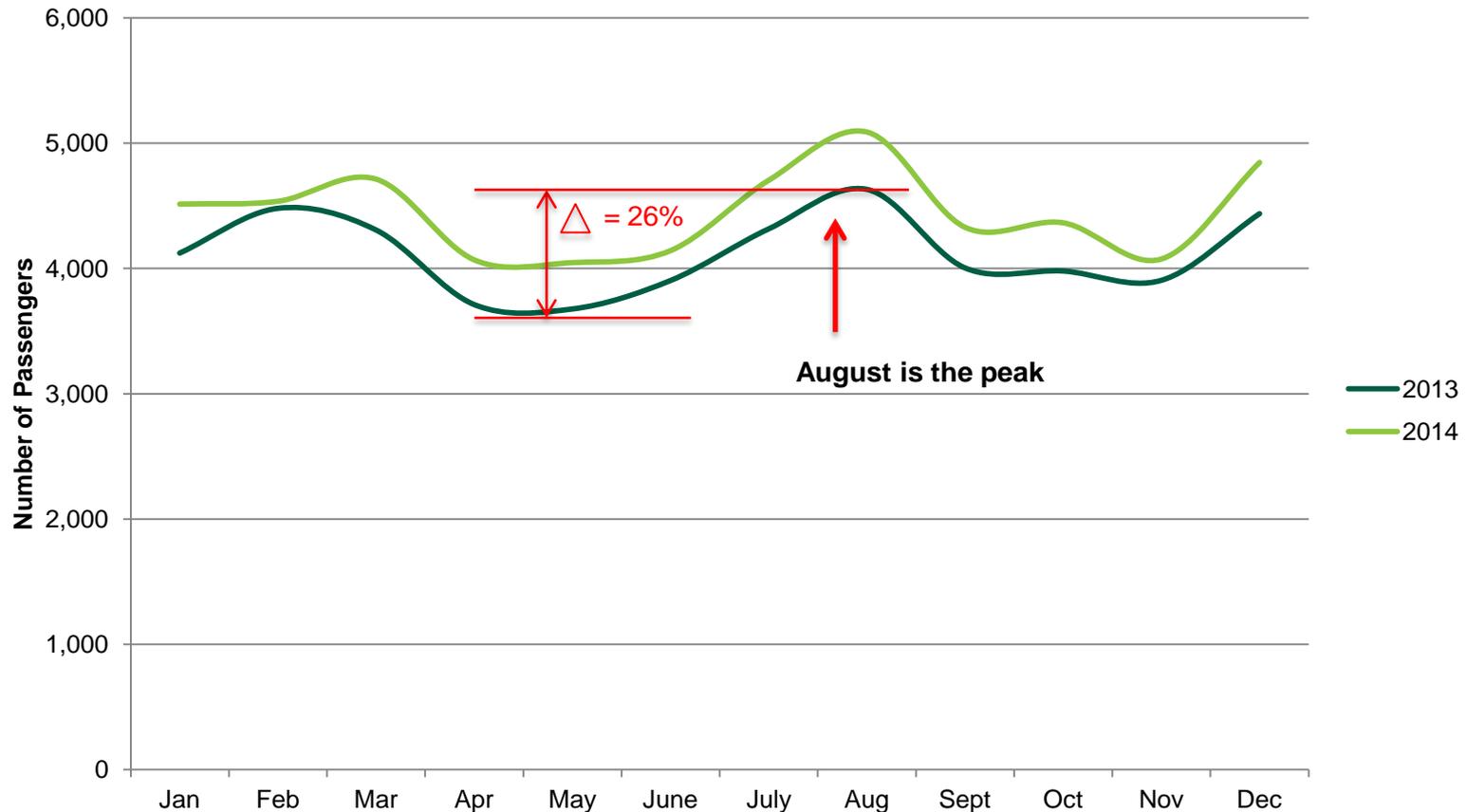
# Hourly Volumes for Short Term and Long Term Parking in May 2014



The profile is derived from the Vehicle Activity Report Summary 2014. The number has been adjusted to match with the parking demand in May 2014

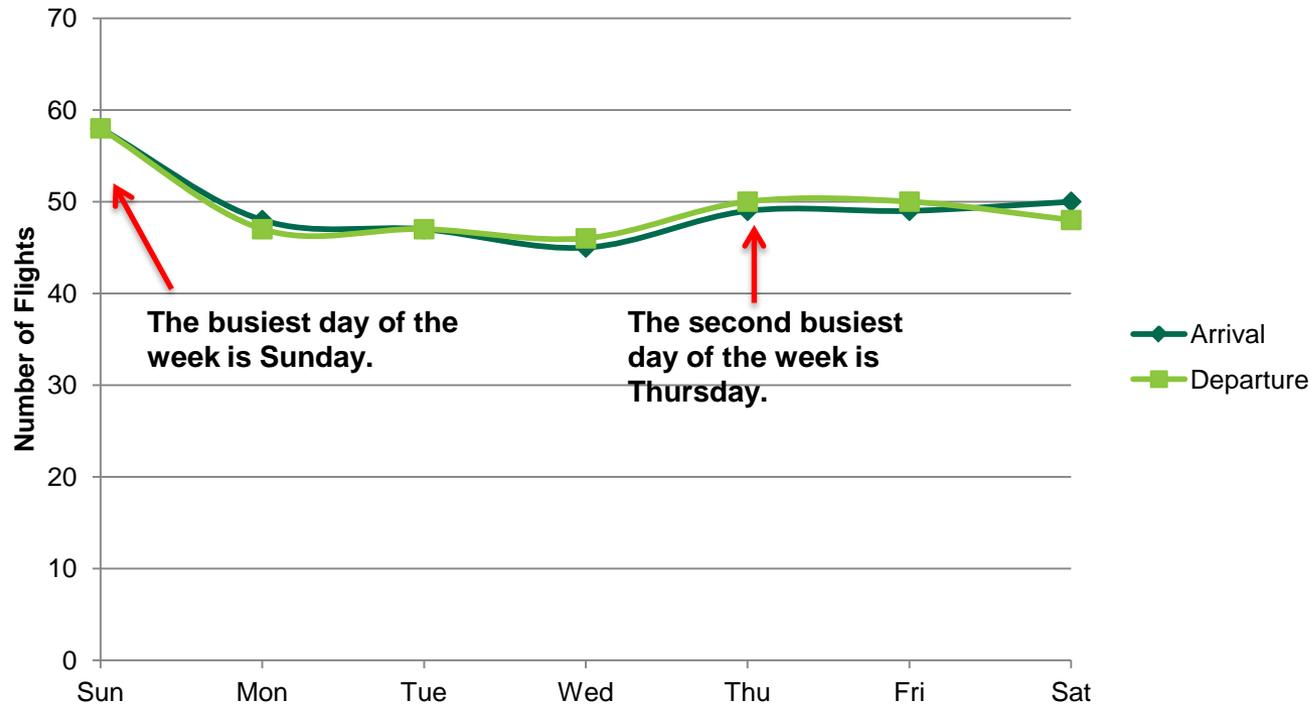
Source: Kelowna International Airport Traffic Study 2014.

# Average Daily Passenger Profile



# Weekly Profile of Flights

Sunday has 17% more flights compared to average daily number of flights.



The Busy Day is a Thursday. It is the second busiest day of the Busy Week and is representative of the 95% busiest day over the year.

Sources: March 1 – 31 (2015) Flight Schedule

# Air Passenger Forecasts

	May 2014	Aug 2014	2015	2020	2025	2030	2035	2040**	2045**
	Daily Average		Busy Day Traffic*						
Air Passengers (Embark and Disembark)	4,047	5,089	5,460	7,077	8,375	9,255	10,136	11,193	12,136

\*The Busy Day is the second busiest day of the Busy Week and is representative of the 95% busiest day over the year. The Busy Day is Thursday.

\*\*Busy Day Traffic for 2040 and 2045 are not provided. It is estimated using the growth rates from the E/D annual passengers forecasts.

Source: Kelowna International Airport Master Plan 2045 Technical Report – Air Traffic Forecasts  
Statistics and Concessions

# Estimation of Peak Parking Demand

Review Hourly Volumes for Short- and Long-Term Parking

Review Historical Monthly Air Passenger Volumes

Obtain Busy Day Air Passenger Forecasts

Determine the Scaling Factors using May 2014 Air Passenger Data as the Base

Apply the Scaling Factors to the May 2014 Parking Demand

Compare the Peak Parking Demand for the Future Years with Existing Capacity

# Peak Parking Demand

	Number of Available Stalls	May 2014	Aug 2014	2015	2020	2025	2030	2035	2040	2045
		Daily Average		Busy Day Traffic***						
<b>Scaling Factor*</b>		1.00	1.26	1.35	1.75	2.07	2.29	2.50	2.77	3.00
<b>Long Term Parking</b>	1,983	1,230	1,547	1,659	<b>2,151</b>	<b>2,545</b>	<b>2,813</b>	<b>3,081</b>	<b>3,402</b>	<b>3,689</b>
<b>Short Term Parking</b>	464	220	277	297	<b>385</b>	<b>455</b>	<b>503</b>	<b>551</b>	<b>608</b>	<b>660</b>
<b>Valet Parking</b>	Integrated with Short Term Parking	72*	91	98	<b>127</b>	<b>150</b>	<b>166</b>	<b>181</b>	<b>200</b>	<b>217</b>
<b>Employee Parking</b>	326	100	126	135	175	207	229	250	277	300
<b>Metered Parking</b>	25	25	<b>31</b>	<b>34</b>	<b>44</b>	<b>52</b>	<b>57</b>	<b>63</b>	<b>69</b>	<b>75</b>
<b>Total</b>	<b>2,798</b>	<b>1,647</b>	<b>2,072</b>	<b>2,223</b>	<b>2,882</b>	<b>3,409</b>	<b>3,768</b>	<b>4,126</b>	<b>4,556</b>	<b>4,941</b>
<b>Additional Stalls Required (if only the overflow from Long Term Parking can use the Employee Parking)</b>		n/a	n/a	n/a	<b>67</b>	<b>404</b>	<b>741</b>	<b>1,078</b>	<b>1,481</b>	<b>1,843</b>

\*\* Short Term Parking Lot will be over capacity by 2020 since the spaces are shared with Valet Parking.

\*\*\*The Busy Day is the second busiest day of the Busy Week and is representative of the 95% busiest day over the year. The Busy Day is Thursday.

# Comparison with Airbiz Parking Demand

Parking	Airbiz Analysis			Our Analysis		
	Existing Capacity	2014 Demand	2025 Demand	Existing Capacity	2014 Demand	2025 Demand
Staff Lot	(integrated with Long Term Parking)	100	196	326	100	207
Rental Ready Lot	230	113	222	n/a	n/a	n/a
Rental Staging / Storage	300	316	620	n/a	n/a	n/a
Short Term Parking	345	220	320	464	220	455
Long Term Parking	1,900	1,230	2,411	1,983	1,230	2,545
Admin. Lot (Valet Parking)	54	54	75	(integrated with Short Term Parking)	72	150
Metered Parking	n/a	n/a	n/a	25	25	52
Total excl. Rental Vehicles	2,299	1,604	3,002	2,798	1,647	3,409
Total incl. Rental Vehicles	2,829	2,038	3,844	n/a	n/a	n/a

Note: Admin Lot is not shown on the YLW airport parking facilities map sourced from the YLW official website. We suspect "Admin Lot" indicated in the Airbiz analysis refers to Valet Parking Drop-offs and Pick-ups.

# Comparison with Airbiz Parking Demand

## Existing Capacity

- For existing capacity, Airbiz report has indicated the lot south of the terminal contains 230 rental ready lot stalls and 345 short term parking stalls. Staff parking is integrated with Long Term parking and 54 stalls for the admin lot.
- Further to our verification with the Airport operations manager, it is confirmed that our number of stalls for the rental ready lot and short term parking are correct. Staff parking is separated from the Long Term parking, located south of the Short Term Parking Lot. Valet parking vehicles are stored in the Short Term Parking Lot.

## Demand Forecast

- Our analysis utilizes a 2.07 growth factor for 2025, whereas the Airbiz report stated it utilizes a 1.96 growth factor for 2025. Nevertheless, the Airbiz analysis didn't apply the growth factor for the Short Term Parking and Admin Lot.
- If 1.96 growth factor was applied, 431 stalls for the Short Term Parking would be projected. It would be closer to our 2025 parking demand forecasts.
- It is recommended to design the future parking facility using our demand forecast since it is representative of the 95% busiest day over the year.

# Summary

- The demand for metered parking is already over the capacity during the busiest month (August) in 2014. It is assumed that the overflow went to the short term and long term parking lots.
- Air passenger is expected to increase significantly in the future. Compare with the busiest month (August) in 2014, volumes per day are expected to grow from 5,100 passengers to 7,100 passengers (39%) in 2020 and 10,100 passengers (almost double) in 2035 during the 95% busiest day of the year.
- By 2020, the short term (together with valet parking) and metered parking demand will be over capacity during the 95% busiest day of the year. 48 additional spaces would be required for the short term parking and 19 additional spaces would be required for the metered parking. The Employee parking lot would be needed to provide sufficient capacity for the overflow of long term parking whereas airport employees would need to park their vehicles at the gravel lot.
- By 2025, about 400 additional spaces would be required even with the use of the Employee Parking Lot as overflow parking.
- The availability of existing parking spaces is not meeting the ultimate demand, particularly for long term parking. YLW should consider building a multi-storey parkade that can accommodate the future parking demand by 2025.

# Next Steps

- Further analysis of the 2014 Vehicle Activity Report Summary to identify the different time occurrences of the long term and short term peak parking demands.
- Further analysis of the daily variations in terms of peak parking demands, particular in March (Spring Break), August (summer vacation time) and December (Christmas).
- Verification of the valet parking demand with YLW staff.
- Develop curb-side management and strategy to accommodate terminal expansion and valet parking demand
- Identify potential sites for long term overflow parking by 2025, e.g. expand the existing long term parking lot further to the east
- Further analysis of the parking demand elasticity to the parking charges
- Identify potential sites and phasing strategy required during the construction of a multi-story parkade in the long term
- Develop parking circulation plans for both short term and long term parking lots