

Memorandum

TO: Chris Gill
CC: Santi Botross, Marea Nicholson
FROM: Ken Hollyoak
DATE: 18 October 2018
TTPP REF: 16084
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RE: Australian Catholic University (Strathfield) campus travel monitoring plan

Dear Chris,

This memorandum has been prepared to document changes in the travel mode of people travelling to the Australian Catholic University (ACU) Strathfield Campus and the on-site population. To date, traffic surveys, online questionnaires and face-to-face interviews have been conducted at the start of Semester 1 and Semester 2 in 2016 and 2017 to assess modes of transport used by people travelling to the campus.

This paper provides the results of the April 2018 GTP/CTMP surveys. The data recorded during Semester 1 was obtained via a cordon survey of the ACU campus and online Survey Monkey questionnaires. This paper will show:

- The results of the April 2018 surveys,
- Any shifts in the modal split since the Semester 1, 2016 and 2017 surveys.

April 2018 Investigation Results

Cordon surveys and a Survey Monkey questionnaire were undertaken at the ACU Strathfield Campus across one week to identify the current campus population and existing modal split of people travelling to the site. Surveys and questionnaires were carried out for one week between 9-15 April 2018. The results of the cordon survey results, which were undertaken during Semester 1 are discussed further below.

Detailed Cordon Surveys

As undertaken in 2016 and 2017, cordon surveys were carried out at the main campus and Clancy Campus at Strathfield to determine the number of people present onsite at any one time. This data has also been used to determine the modal split of travellers on the busiest day, which has been identified as Thursday 12 April 2018.

The highest number of people on campus at any one time each day of the survey week is shown in Figure 1. The survey results show the busiest day at the Strathfield campus to be Thursday 12 April with 1,521 people present on campus. Figure 2 provides an hourly profile across this day showing the busiest period on campus to occur between 11.00am-12.00pm.

Figure 1: Number of People on Campus (April 2018)

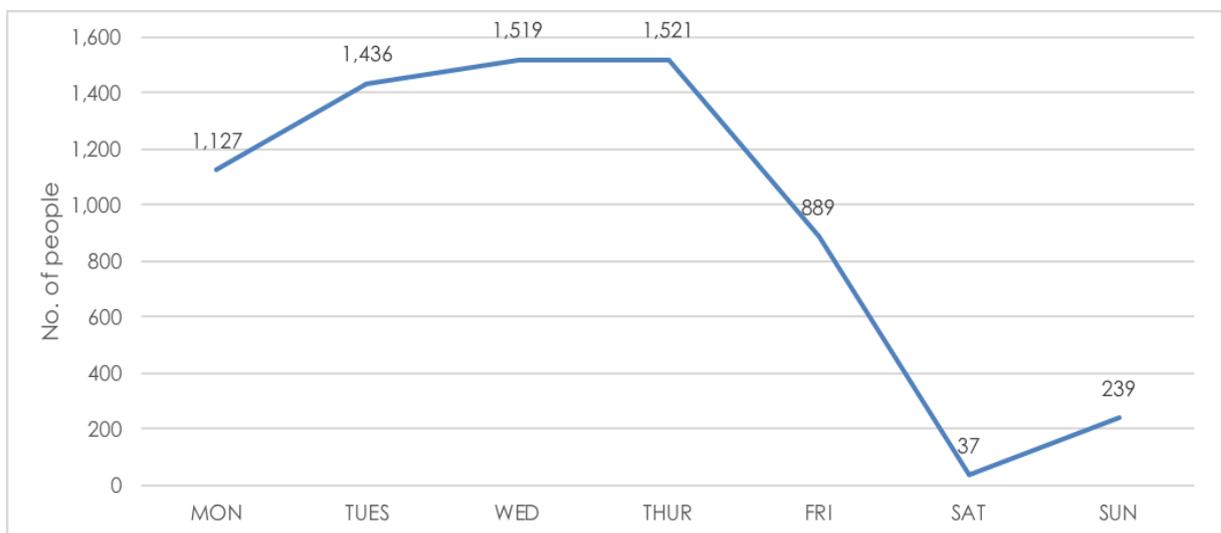
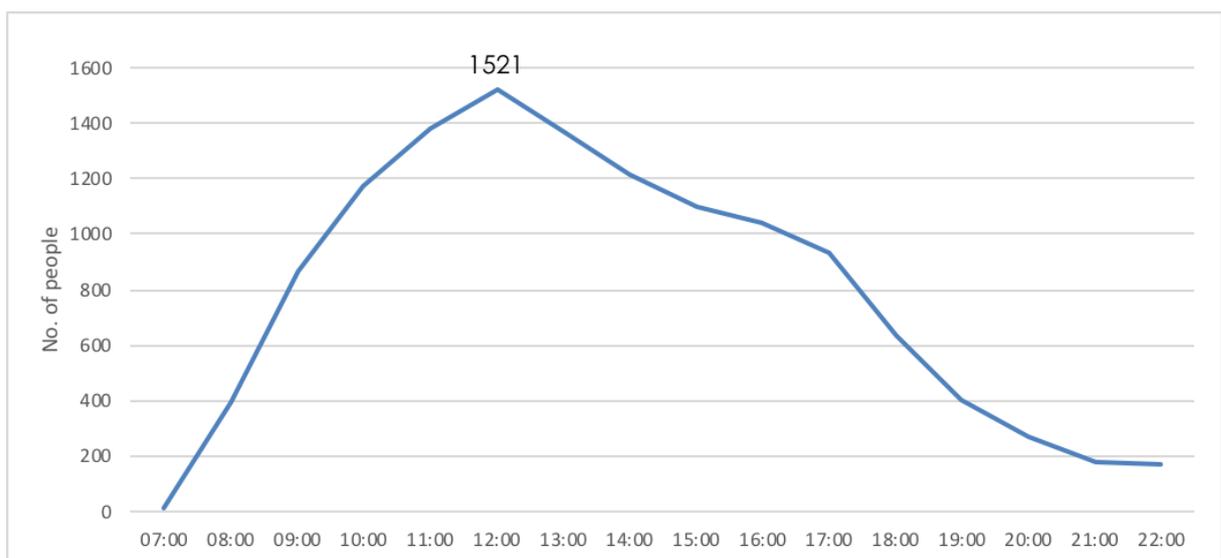


Figure 2: Peak Day Hourly Profile (Number of People Present on Campus at Any One Time)



The mode split of people arriving at the Strathfield campus is presented in Table 1 and Figure 3. The survey results indicate that the most popular mode of transport used by people travelling to ACU is by car as the driver (44.5%). Public transport is the second most used mode (38.7%) and is followed by people travelling as car passengers (14.9%). Walkers, cyclists and motorcyclists collectively make up less than 2% of the overall mode split.

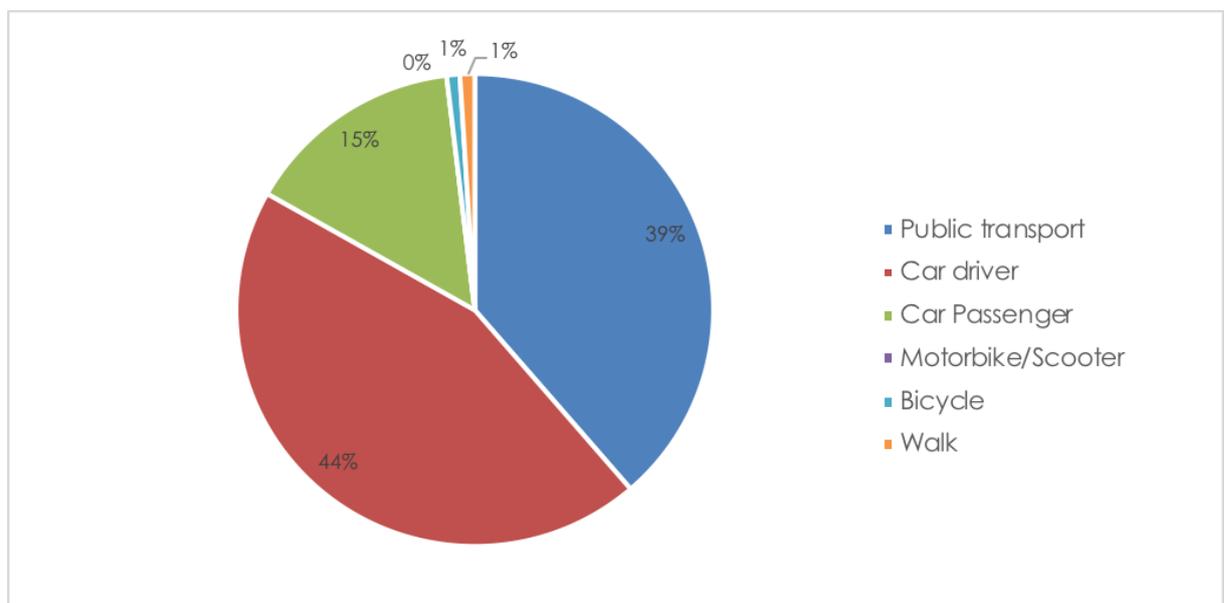
Table 1: April 2018 Modal Split Surveys (Busiest Day)

Mode of Travel	Mode Share
Car Driver	44.5%
Public Transport	38.7%
Car Passenger ^(a)	14.9%
Walk	1.0%
Bicycle	0.9%
Motorbike / Scooter	0.0%
Total	100%

Notes:

(a) Includes passengers travelling in the car of someone else who is also attending university or being transported by someone else who is not attending university.

Figure 3: Mode Split on Peak Busiest Day (April 2018)



Survey Monkey Questionnaire

The online Survey Monkey questionnaire captured the modal split for visitors travelling to the University in April 2018. It is noted that some Survey Monkey participants selected more than one mode of travel. The results of the questionnaire are summarised in Table 2 while a breakdown of the mode split is shown in Figure 4.

Table 2: Survey Monkey Mode Split (April 2018)

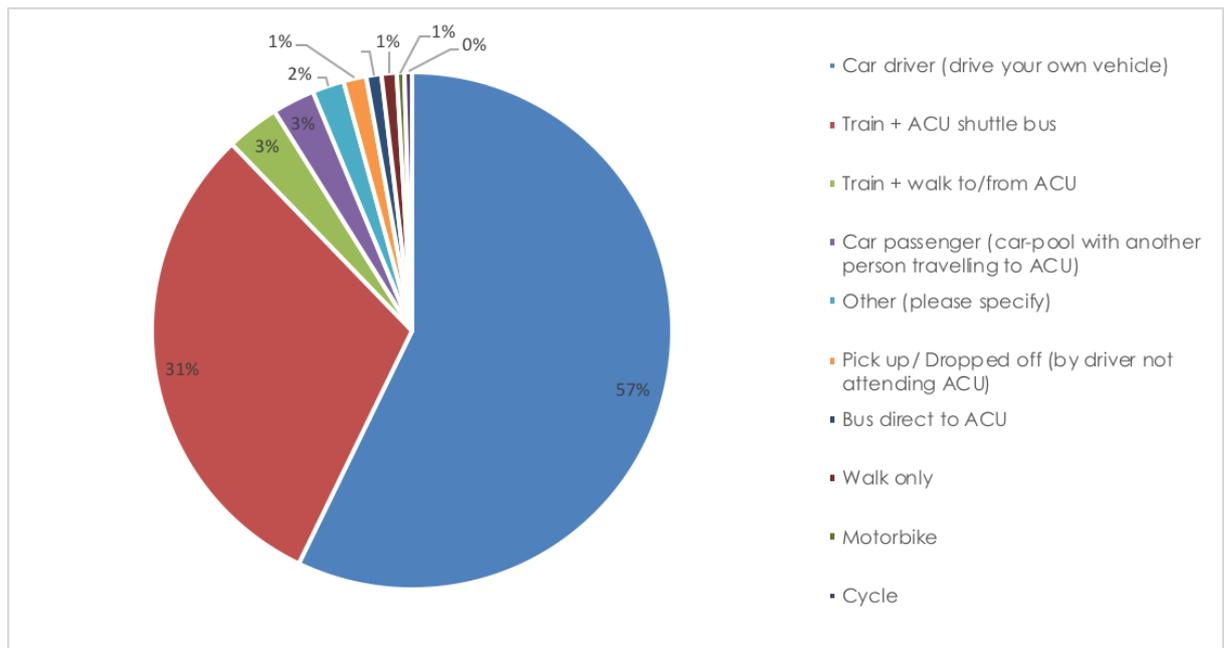
Mode of Travel	Number of Participants	Percentage (%)
Car Driver	606	57.2%
Train + ACU Shuttle Bus	325	30.7%
Train + Walk to/from ACU	35	3.3%
Car Passenger ^(a)	5	2.6%
Other	21	2.0%
Picked Up / Dropped Off	15	1.4%
Bus Direct to ACU	10	0.9%
Walk Only	10	0.9%
Motorbike	5	0.5%
Cycle	5	0.5%
Total	1,060 ^(b)	100.0%

Notes:

(a) Includes passengers travelling in the car of someone else who is also attending university or being transported by someone else who is not attending university.

(b) Total number of survey participants.

Figure 4: Survey Monkey Mode Split (April 2018)



The Survey Monkey questionnaire also captured the days of the week that people attended university (ie. were present on campus) and the average number of hours spent on campus per week. Responses to the questionnaire have been summarised in Table 3.

Table 3: Student Attendance (April 2018)

No. of Days Attended	Number of Hours Per Week Attended				Total
	0 – 8 Hours	8 – 16 Hours	16 – 24 Hours	24+ Hours	
1	56 (79%)	13 (18%)	2 (3%)	0 (0%)	71 (100%)
2	72 (34%)	122 (58%)	14 (7%)	1 (0%)	209 (100%)
3	56 (14%)	211 (52%)	122 (30%)	13 (3%)	402 (100%)
4	10 (5%)	80 (41%)	86 (44%)	21 (11%)	197 (100%)
5	4 (8%)	21 (42%)	19 (38%)	6 (12%)	50 (100%)
5+	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (100%)
Overall	198 (21%)	447 (48%)	243 (26%)	41 (4%)	929 (100%)

The data in Table 3 indicates that the bulk of people attending university are on campus for a period of 8-16 hours (48%) with the greatest portion spending this time over two days (58%). On average, this equates to eight hours spent on campus per day. No one appears to be on campus for more than five days per week.

Comparison of Data

It is understood that the number of enrolments and people on-site can differ dramatically between semesters. Similarly, travel behaviour of students and staff can vary greatly between semesters. For these reasons, an analysis of shifts in mode share during Semester 1 across the survey years thus far has been carried out herein.

Mode Share

Peak day mode split in Semester 1 of 2016, 2017 and 2018 has been summarised in Table 4.

Table 4: Semester 1 Mode Split Comparison

Mode of Travel	2016	2017	2018
Car Driver	52.6%	43.0%	44.5%
Public Transport ^(a)	34.8%	42.8%	38.7%
Car Passenger ^(b)	10.3%	12.5%	14.9%
Walk	1.7%	1.0%	1.0%
Bicycle	0.6%	0.7%	0.9%
Motorbike / Scooter	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%

Notes:

(a) Includes both public transport and ACU Shuttle Bus.

(b) Includes passengers travelling in the car of someone else who is also attending university or being transported by someone else who is not attending university.

The three most common modes of travel to campus include car drivers, public transport and car passenger. Collectively, these three categories make up around 98% of all modes used to travel to campus. Given this is a considerable portion, changes in these mode shares across the survey period is provided as follows:

- Car Drivers - Between 2016 and 2017, the number of car drivers to ACU dropped from 52.6% to 43.0% (-9.6%). In 2018, this number increased to 44.5% (+1.5%). Overall, the number of car drivers has decreased by 8.1% (from 2016 to 2018).
- Public Transport – Between 2016 and 2017, the number of people travelling by public transport to access increased from 34.8% to 42.8% (+ 8.0%). In 2018, this number and reduced to 38.7% (-4.1%) in 2018. Overall, the number of people using public transport increased by 3.9% (from 2016 to 2018).
- Car Passengers – Between 2016 and 2017, the number of people travelling as a car passenger has increased from 10.3% to 12.5% (+2.5%). In 2018, this number increased to 14.9% (+4.6%).

People On-site

A comparison of the number of people on site, at any one time, is shown in Figure 5 overleaf.

Figure 5: Change in Daily Peak Profiles

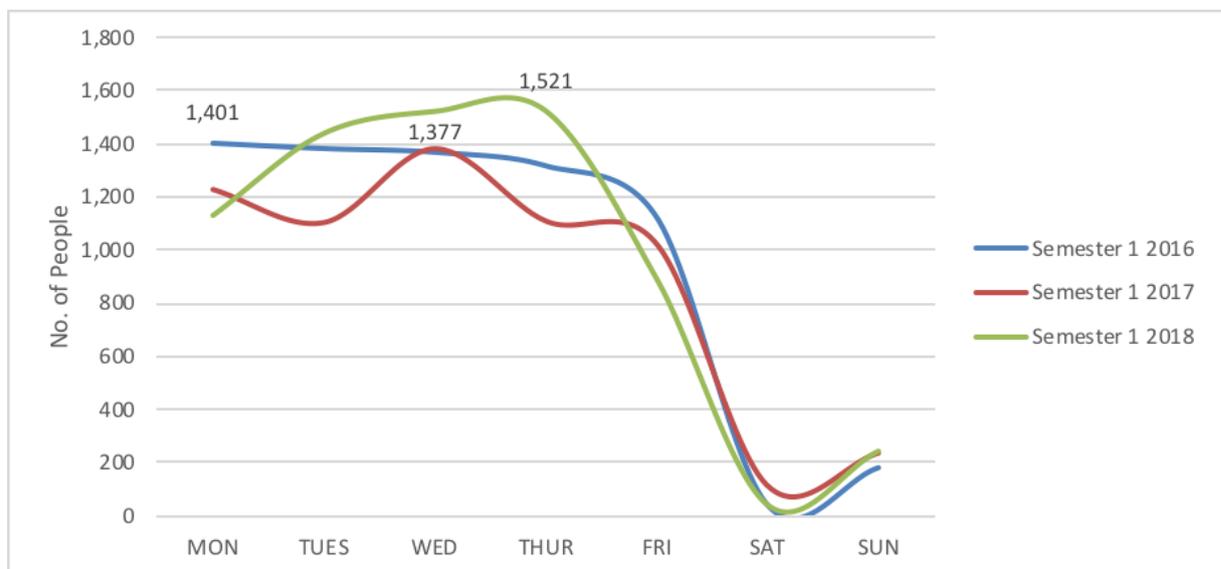


Figure 5 demonstrates the expected trend that the campus would have most people on-site between Monday to Friday. Comparing attendance on peak days, the number of people on-site in 2016 and 2017 was around 1,400. In 2018, this increased to around 1,500. Generally, weekday attendance in 2018 was higher than in 2016 and 2017.

People Driving and Parking

By applying car driver rates (as per Table 4) to the maximum number of people on-site at any one time (Figure 5), the number of people who drove and parked on/near campus can be estimated for each year. A summary of the estimated car drivers in 2016, 2017 and 2018 is given in Table 5.

Table 5: Semester 1 Mode Split Comparison

Year	2016	2017	2018
Max. People On-site	1,401	1,377	1,521
Car Driver Mode Split	52.6%	43.0%	44.5%
Total	737	592	677

Between 2016 and 2017, the number of car drivers decreased by around 145 people (19.7% reduction). Between 2016 and 2018, this number decreased by around 60 people (8.2% reduction).

The mode split of people travelling to ACU was also captured through the online Survey Monkey questionnaire. A summary of the survey results in Semester 1 of 2016, 2017 and 2018 is summarised in Table 6.

Table 6: Comparison of Semester 1 Survey Monkey Data

Mode of Travel	2016	2017	2018	Shift between 2016 - 2017	Shift between 2016 - 2018
Car Driver	62%	55%	57%	- 7%	-5%
Train + ACU Shuttle Bus	29%	24%	31%	-5%	+2%
Train + Walk to/from ACU	3%	6%	3%	-3%	0%
Other	2%	2%	2%	0%	0%
Walk Only	2%	1%	1%	-1%	-1%
Picked up/Dropped off	1%	3%	1%	+2%	0%
Cycle	1%	0%	0%	-1%	-1%
Car Passenger	1%	7%	3%	+6%	+2%
Bus Direct to ACU	0%	2%	1%	+2%	+1%
Total	100%	100%	100%	-	-

Between 2016 and 2017, there was a reduction of 7% in the number of people driving to campus while between 2016 and 2018, there was a 5% reduction. Popularity for other modes of travel have increased including travelling as a car passenger and by train and ACU shuttle bus. Conversely, there has been a slight reduction in the number of people walking or cycling to campus as their primary mode of travel.

Summary

As detailed in the Australian Catholic University (Strathfield) Campus Travel Monitoring Plan, the achievement of a 45% mode share target for car driver was proposed in an effort to achieve acceptable outcomes for on-street parking (i.e. around 230 on-street car parking spaces).

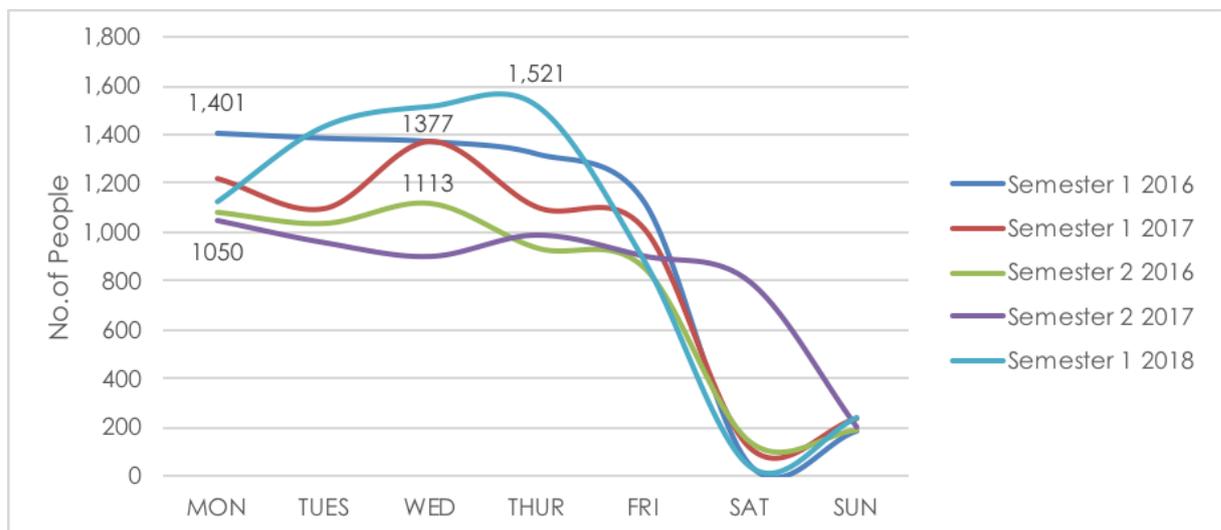
The Semester 1 2018 surveys demonstrate that the mode split for car driver is less than the target with 44.5% (Table 5). It is noted that during Semester 1 the weekly total number of people recorded parking off-site was as follows:

- 286 people in 2016
- 533 people in 2017
- 318 people in 2018.

Between 2016 and 2017, there were an additional 247 people parking off-site. Between 2016 and 2018, there an additional 32 people parking off-site.

A comparison of the identified busiest day, from the Semester 1 and 2 (2016, 2017 and 2018) surveys, is demonstrated below.

Figure 6: Comparison of Weekly Peak Profiles from Semester 1 and 2, 2016, 2017 and 2018 Surveys



As demonstrated in Figure 6, there are a greater number of people on campus during Semester 1 in comparison to Semester 2. The survey data for all periods indicate that the number of people present on campus (at one time) reduces significantly on the weekend, except for Semester 2 2017. As mentioned in the previous memo, this abnormal weekend peak was due to a University Open Day being held on the same day as the surveys.

A summary table of all cordon survey results completed to-date has been included in Table 7.

Table 7: Results of All Undertaken ACU Cordon Surveys – Modal Split Results

Mode of Travel	Semester 1			Semester 2	
	April 2016	April 2017	April 2018	Aug/Sept 2016	Sept 2017
Car Driver	52.6%	43.0%	44.5%	45.1%	52.4%
Public Transport	34.8%	42.8%	38.7%	39.5%	32.9%
Car Passenger	10.3%	12.5%	14.9%	13.5%	13.3%
Walk	1.7%	1.0%	1.0%	1.0%	1.0%
Bicycle	0.6%	0.7%	0.9%	0.9%	0.5%
Motorbike / Scooter	0%	0%	0%	0%	0%
Total	100%	100%	100%	100%	100%

The initial survey completed in April 2016 shows the highest proportion of car drivers across all survey periods (52.6%). The survey periods following April 2016 indicate a reduction in the proportion of car drivers which is greater than 5%, except in September 2017 (52.4%) where the reduction was only 0.2%.

As mentioned in the previous memo, percentages can be misleading especially when the number of people on campus differs between semesters. When less people are on campus, it is comparatively easier to park on campus which results in increases in the number of car drivers. Having a higher number of people driving to campus and lower number of people on campus produces a greater mode share portion of car drivers.

That being said, the April 2018 survey results show a greater number of people on campus in Semester 1, compared to the 2017 data, and a slightly higher proportion of car drivers. Therefore, it is concluded that car usage is declining and that the Australian Catholic University (Strathfield) Campus Travel Monitoring Plan mode share shift of 5% for car drivers is achievable.