

# Memorandum

**TO:** Chris Gill  
**CC:** Santi Botross, Marea Nicholson  
**FROM:** Ken Hollyoak  
**DATE:** 18 October 2018  
**TTPP REF:** 16084  
**PAGE 1 OF 9**

**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, notably documenting Semester 2, 2018 survey data. Traffic surveys, online questionnaires and face-to-face interviews were undertaken as part of the assessment, as per previous investigations undertaken in 2016 and 2017.

This paper provides the results of the August/September 2018 GTP/CTMP surveys. The data recorded during Semester 2 was obtained via a cordon survey of the ACU campus and online Survey Monkey questionnaires. This paper will show:

- The results of the August/September 2018 surveys,
- Any shifts in the modal split since the Semester 2, 2016 and 2017 surveys.

## August/September 2018 Investigation Results

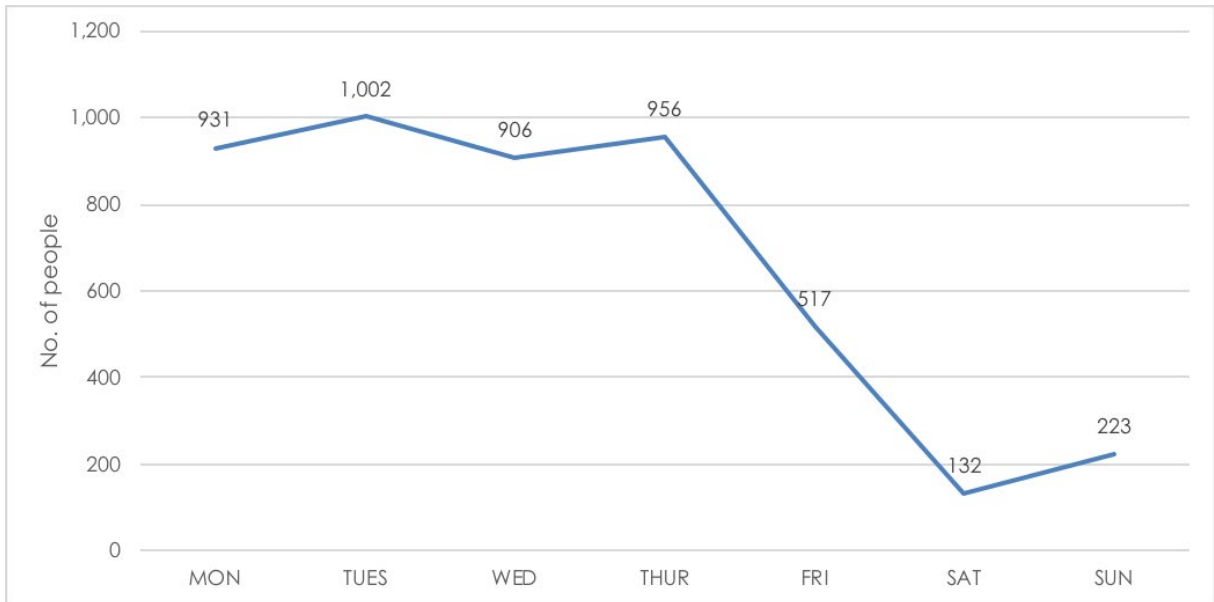
Cordon surveys and a Survey Monkey questionnaire were undertaken at the ACU Strathfield Campus across one week to identify the current campus population and existing mode split of people travelling to the site. The data collection was undertaken between 31 August 2018 and 6 September 2018 (inclusive) during Semester 2. The results of the surveys and questionnaire are discussed herein.

### Detailed Cordon Surveys

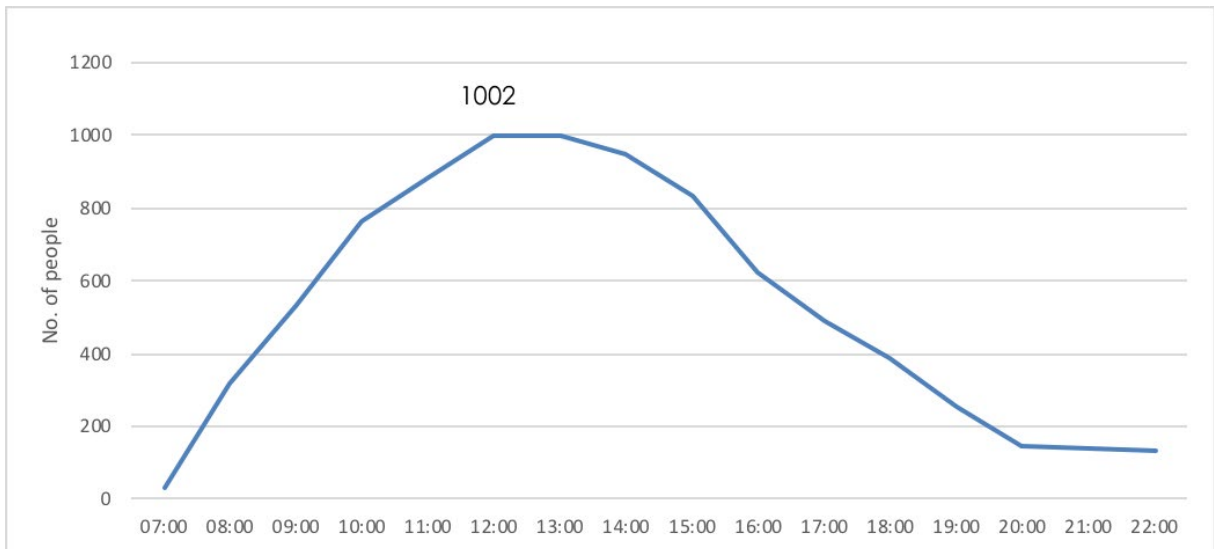
As undertaken as part of the assessment for Semester 2 (in 2016 and 2017), cordon surveys were carried out at the main campus and Clancy Campus at Strathfield to determine the number of people present onsite at any one time. This data has also been used to determine the mode split of travellers on the busiest day.

The highest number of people on campus at any one time on a daily basis is shown in Figure 1. The survey results show the busiest day at the Strathfield campus to occur on a Tuesday whereby there were up to 1,002 people present on campus at one time. As shown in Figure 2, this peak occurred at 11.00am-12.00pm.

**Figure 1: Number of People on Campus (August/September 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 public transport (44.9%). Travelling to campus by car was identified as the second most common mode (35%) followed by people travelling as car passengers (18.5%). Walkers, cyclists and motorcyclists collectively make up less than 2% of the overall mode split.

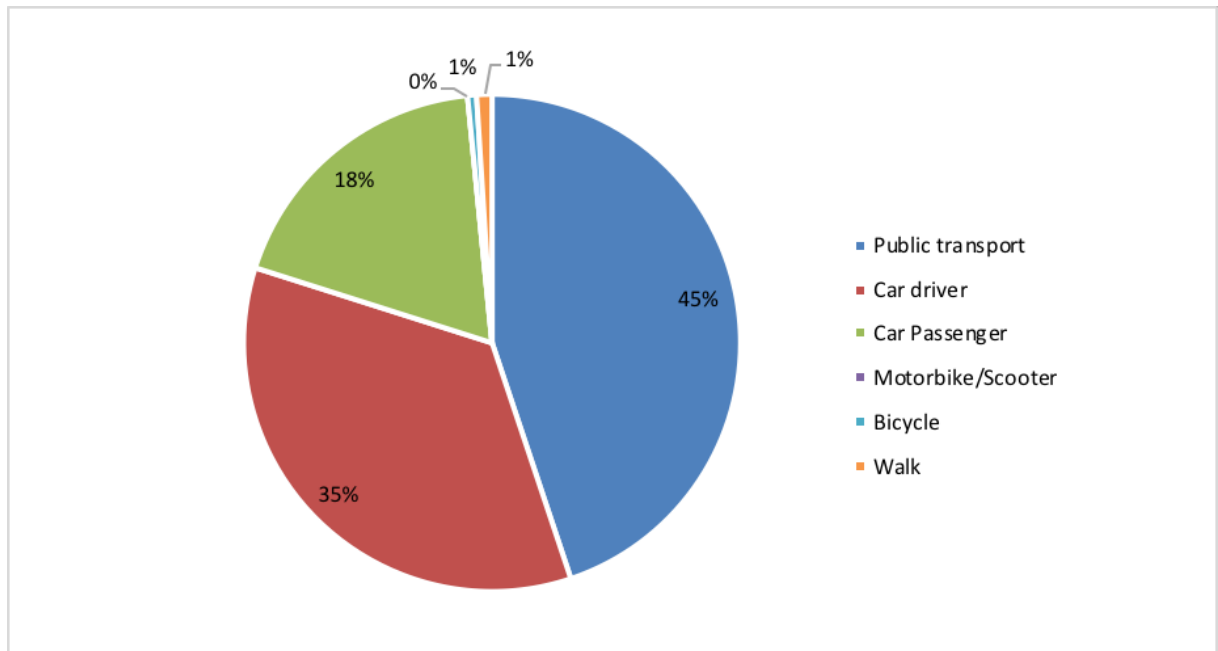
**Table 1: August/September 2018 Modal Split Surveys (Busiest Day)**

| Mode of Travel               | Mode Share  |
|------------------------------|-------------|
| Public Transport             | 44.9%       |
| Car Driver                   | 35.0%       |
| Car Passenger <sup>(a)</sup> | 18.5%       |
| Walk                         | 1.0%        |
| Bicycle                      | 0.6%        |
| Motorbike / Scooter          | 0.0%        |
| <b>Total</b>                 | <b>100%</b> |

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 (August/September 2018)**



### Survey Monkey Questionnaire

The online Survey Monkey questionnaire captured the mode split for visitors travelling to the University in August and September 2018. It is noted that some questionnaire 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 (August/September 2018)**

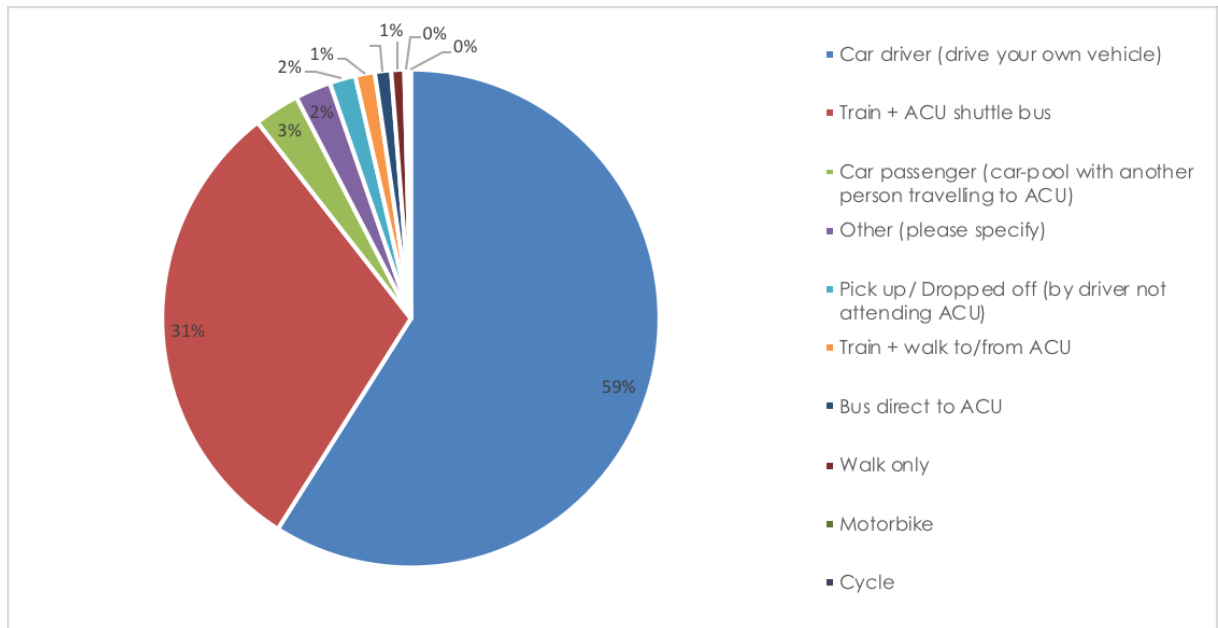
| Mode of Travel               | Number of Participants    | Percentage (%) |
|------------------------------|---------------------------|----------------|
| Car driver                   | 279                       | 59.0%          |
| Train + ACU shuttle bus      | 144                       | 30.4%          |
| Car passenger <sup>(a)</sup> | 14                        | 3.0%           |
| Other                        | 11                        | 2.3%           |
| Pick up/ Dropped off         | 8                         | 1.7%           |
| Train + walk to/from ACU     | 6                         | 1.3%           |
| Bus direct to ACU            | 5                         | 1.1%           |
| Walk only                    | 4                         | 0.8%           |
| Motorbike                    | 1                         | 0.2%           |
| Cycle                        | 1                         | 0.2%           |
| <b>Total</b>                 | <b>473 <sup>(b)</sup></b> | <b>100.0%</b>  |

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 (August/September 2018)**



The questionnaire also captured the days of the week that people attended university (i.e. 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 (August/September 2018)**

| No. of Days Attended | Number of Hours Per Week Attended |                  |                 |                | Total             |
|----------------------|-----------------------------------|------------------|-----------------|----------------|-------------------|
|                      | 0 – 8 Hours                       | 8 – 16 Hours     | 16 – 24 Hours   | 24+ Hours      |                   |
| 1                    | 33 (33%)                          | 8 (4%)           | 2 (3%)          | 0 (0%)         | <b>43 (100%)</b>  |
| 2                    | 40 (40%)                          | 82 (42%)         | 10 (13%)        | 2 (11%)        | <b>134 (100%)</b> |
| 3                    | 24 (24%)                          | 75 (38%)         | 33 (42%)        | 10 (56%)       | <b>142 (100%)</b> |
| 4                    | 1 (1%)                            | 30 (15%)         | 26 (33%)        | 3 (17%)        | <b>60 (100%)</b>  |
| 5                    | 0 (0%)                            | 1 (1%)           | 7 (9%)          | 2 (11%)        | <b>10 (100%)</b>  |
| 5+                   | 1 (1%)                            | 0 (0%)           | 1 (1%)          | 1 (6%)         | <b>3 (100%)</b>   |
| <b>Overall</b>       | <b>99 (25%)</b>                   | <b>196 (50%)</b> | <b>97 (20%)</b> | <b>18 (5%)</b> | <b>392 (100%)</b> |

As demonstrated in Table 3, the majority of students attending university are on campus for a period of 8-16 hours (50%) with the greatest quantity spending this time over two days (42%). This equates to on average of eight hours being spent on campus per day.

## 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 between semesters. For these reasons, an analysis of shifts in mode share during Semester 2 across the survey years thus far has been carried out herein.

### Mode Share

Peak day mode split in Semester 2 in 2016, 2017 and 2018 has been summarised in Table 4.

**Table 4: Semester 2 Mode Split Comparison**

| Mode of Travel                  | 2016          | 2017          | 2018        |
|---------------------------------|---------------|---------------|-------------|
| Car Driver                      | 45.1%         | 52.4%         | 35.0%       |
| Public Transport <sup>(a)</sup> | 39.5%         | 32.9%         | 44.9%       |
| Car Passenger <sup>(b)</sup>    | 13.5%         | 13.3%         | 18.5%       |
| Walk                            | 1%            | 1%            | 1.0%        |
| Bicycle                         | 0.9%          | 0.5%          | 0.6%        |
| Motorbike / Scooter             | 0.0%          | 0.0%          | 0.0%        |
| <b>Total</b>                    | <b>100.0%</b> | <b>100.0%</b> | <b>100%</b> |

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 most common modes of travel to campus include car drivers, public transport and car passenger. Collectively, these three categories make up approximately 98% of all travel mode to campus during Semester 2. Given this is a considerable portion, changes in these mode shares across the survey period are provided as follows:

- Car Drivers – Between 2016 and 2017, the number of car drivers to ACU increased from 45.1% to 52.4% (+7.3%). In 2018, this number decreased to 35.0% (-17.4%). Overall, the number of car drivers has decreased by 10.1% (from 2016 to 2018).
- Public Transport – Between 2016 and 2017, the number of people travelling by public transport decreased from 39.5% to 32.9% (-6.6%). In 2018, this number increased to 44.9% (+12.0%). Overall, the number of people using public transport increased by 5.4% (from 2016 to 2018).
- Car Passengers – Between 2016 and 2017, the number of people travelling as a car passenger has decreased from 13.5% to 13.3% (-0.2%). In 2018, this number increased to 18.5% (+5.2%). Overall, the number of people travelling as a car passenger to ACU increased by 5.0% (from 2016 to 2018).

### People On-site

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

**Figure 5: Change in Daily Peak Profiles**

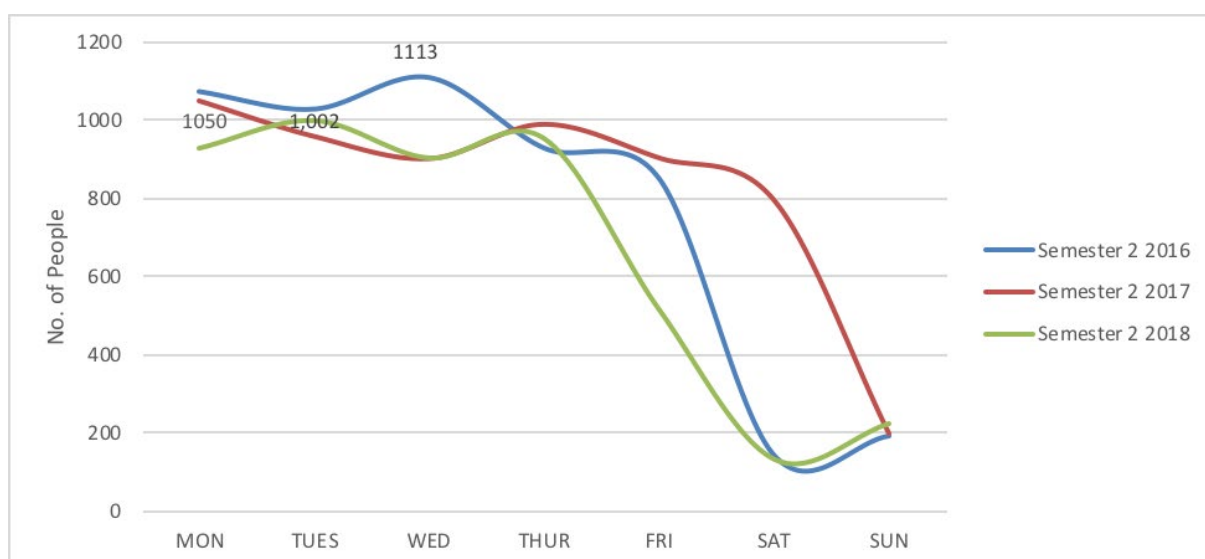


Figure 5 demonstrates that there is similar trend of people on-site between Monday to Friday. Comparing the attendance data of peak days, the number of people on-site has declined slightly every year since 2016. The difference in people on-site between each year is about 50-60 people. In 2018, there were 1,002 people recorded on-site on the peak day. Generally, weekday attendance in 2018 was similar to that recorded in 2017, with the exception of the Saturday trend in 2017 which was due to a University Open Day being held on the same day.

### 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 2 Mode Split Comparison**

| Year                  | 2016       | 2017       | 2018       |
|-----------------------|------------|------------|------------|
| Max. People On-site   | 1,113      | 1,050      | 1,002      |
| Car Driver Mode Split | 45.1%      | 52.4%      | 35.0%      |
| <b>Total</b>          | <b>502</b> | <b>550</b> | <b>351</b> |

Between 2016 and 2017, the number of car drivers increased by 48 people (or a 9.6% increase). Between 2016 and 2018, this number decreased by around 151 people (which equates to a 30.1% 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 2 of 2016, 2017 and 2018 is summarised in Table 6.

**Table 6: Comparison of Semester 2 Survey Monkey Data**

| Mode of Travel           | 2016        | 2017        | 2018        | Shift between 2016 - 2017 | Shift between 2016 - 2018 |
|--------------------------|-------------|-------------|-------------|---------------------------|---------------------------|
| Car Driver               | 67%         | 54%         | 59%         | -13%                      | -8%                       |
| Train + ACU Shuttle Bus  | 24%         | 28%         | 30%         | +4%                       | +6%                       |
| Train + Walk to/from ACU | 3%          | 5%          | 1%          | +2%                       | -2%                       |
| Other                    | 1%          | 2%          | 3%          | +1%                       | +2%                       |
| Walk Only                | 1%          | 1%          | 1%          | 0%                        | 0%                        |
| Picked up/Dropped off    | 1%          | 4%          | 2%          | +3%                       | +1%                       |
| Cycle                    | 1%          | 0%          | 0%          | -1%                       | -1%                       |
| Car Passenger            | 1%          | 5%          | 3%          | +4%                       | +2%                       |
| Bus Direct to ACU        | 1%          | 1%          | 1%          | 0%                        | 0%                        |
| <b>Total</b>             | <b>100%</b> | <b>100%</b> | <b>100%</b> | <b>-</b>                  | <b>-</b>                  |

Between 2016 and 2017, there was a reduction of 13% in the number of people driving to campus while between 2016 and 2018, there was an 8% reduction. Popularity for other modes of travel have increased including travelling as a car passenger, train and ACU shuttle bus. There has been very little change in the number of people walking and catching a bus direct to campus as their primary mode of travel.

## Summary

As detailed in the Australian Catholic University (Strathfield) Campus Travel Monitoring Plan, 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).

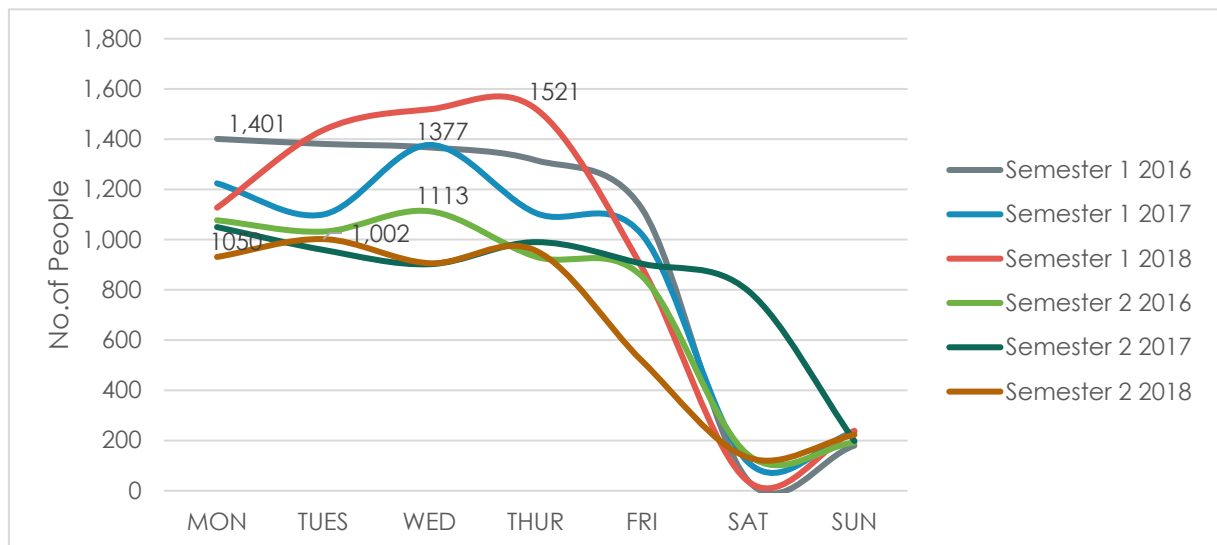
The Semester 2 2018 surveys demonstrate that the mode split for car driver is less than the target with 35% (as outlined in Table 5). It is noted that during Semester 2, the weekly total number of people recorded parking off-site was as follows:

- 250 people in 2016
- 667 people in 2017
- 282 people in 2018.

Between 2016 and 2017, there were an additional 417 people parking off-site. Between 2016 and 2018, there an additional 32 people parking off-site.

A comparison of the busiest days in the Semester 1 and 2 (2016, 2017 and 2018) surveys, is demonstrated Figure 6.

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



As detailed in the memo for Semester 1 and as confirmed by Figure 6, there are more 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 in 2017. As mentioned in the corresponding 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  |             |             |
|---------------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                     | 2016        | 2017        | 2018        | 2016        | 2017        | 2018        |
| Car Driver          | 52.6%       | 43.0%       | 44.5%       | 45.1%       | 52.4%       | 35.0%       |
| Public Transport    | 34.8%       | 42.8%       | 38.7%       | 39.5%       | 32.9%       | 44.9%       |
| Car Passenger       | 10.3%       | 12.5%       | 14.9%       | 13.5%       | 13.3%       | 18.5%       |
| Walk                | 1.7%        | 1.0%        | 1.0%        | 1.0%        | 1.0%        | 1.0%        |
| Bicycle             | 0.6%        | 0.7%        | 0.9%        | 0.9%        | 0.5%        | 0.6%        |
| Motorbike / Scooter | 0.0%        | 0.0%        | 0.0%        | 0.0%        | 0.0%        | 0.0%        |
| <b>Total</b>        | <b>100%</b> | <b>100%</b> | <b>100%</b> | <b>100%</b> | <b>100%</b> | <b>100%</b> |

Since the commencement of the study, the April 2016 survey period still shows the highest proportion of car drivers (52.6%). The survey periods following April 2016 indicate a reduction in the proportion of car drivers that is greater than 5%, except in September 2017 where there was a 0.2% reduction. The August/September 2018 results demonstrate the most significant reduction in car drivers; that is, a 17.6% reduction since April 2016.

As mentioned in previous memos, 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 Semester 2 2018 survey results show less people on campus and smaller proportion of car drivers in comparison to 2016 and 2018. Thus, it can be concluded that car usage is declining and the mode share shift of 5% for car drivers as specified in the Australian Catholic University (Strathfield) Campus Travel Monitoring Plan is being achieved.