

**UNIVERSITY OF TASMANIA**  
**TRAVEL BEHAVIOUR SURVEY 2021**  
**Update Report**

*November 2021*

prepared by

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# TABLE OF CONTENTS

<b>ACKNOWLEDGEMENTS</b> .....	<b>iv</b>
<b>GLOSSARY OF TERMS AND ABBREVIATIONS</b> .....	<b>v</b>
<b>1. BACKGROUND</b> .....	<b>1</b>
<b>2. ABOUT THE SURVEY</b> .....	<b>4</b>
<b>2.1. Method</b> .....	<b>4</b>
<b>2.2. Participation and statistical confidence</b> .....	<b>4</b>
<b>2.3. How results are reported</b> .....	<b>6</b>
<b>3. FINDINGS</b> .....	<b>8</b>
<b>3.1. Journey to work and study</b> .....	<b>8</b>
3.1.1. Multi-modal journeys to university.....	8
3.1.2. Student main mode to study .....	9
3.1.3. Staff main mode to work .....	18
3.1.4. Working or studying from home or remotely (virtual transport) .....	24
<b>3.2. Inter-campus travel</b> .....	<b>26</b>
3.2.1. Student inter-campus travel .....	26
3.2.2. Staff business travel.....	27
<b>3.3. Bus use</b> .....	<b>31</b>
3.3.1. Greencard and Opal card ownership.....	31
3.3.2. Use of online public transport information and apps.....	32
3.3.3. Bus use incentives.....	32
3.3.4. Bus service challenges.....	34
<b>3.4. Bicycle use</b> .....	<b>35</b>
3.4.1. Change over time and gender .....	36
3.4.2. Use of bicycle infrastructure .....	38
3.4.3. Electric bicycles.....	39
<b>3.5. Car use and parking</b> .....	<b>39</b>
3.5.1. Car type.....	39
3.5.2. <i>Car ownership and use - International students</i> .....	40
3.5.3. Parking.....	41
<b>3.6. Transformation Program-related questions</b> .....	<b>44</b>
3.6.1. Northern Transformation: Newnham to Inveresk .....	44
3.6.2. Southern Transformation: Sandy Bay to Hobart CBD.....	45
<b>4. TRACKING PROGRESS</b> .....	<b>47</b>
<b>4.1. Students</b> .....	<b>47</b>
<b>4.2. Staff</b> .....	<b>48</b>
<b>5. SUSTAINABLE TRANSPORT STRATEGY REVIEW</b> .....	<b>50</b>
<b>APPENDIX: QUESTION TOPICS</b> .....	<b>51</b>

## List of Figures and Tables

Figure 1.1: University of Tasmania campus/facilities locations 2021 .....	3
Table 2.1: Participation and statistical confidence of Travel Behaviour Surveys.....	5
Table 2.2: Survey respondent profile (TBS2021).....	6
Table 2.3: Reporting scales .....	7
Figure 3.1: Dominant student multi-modal journey types to university, 2021 .....	8
Figure 3.2: Dominant staff multi-modal journey types to university.....	9
Figure 3.3: Main Mode Share per year – Students – All University of Tasmania.....	10
Figure 3.4: Main Mode Share 2021 – Students – by campus and campus groupings.....	10
Figure 3.5: Main Mode Share per year – Students – Tasmania South (all Greater Hobart) ....	12
Figure 3.6: Main Mode Share per year – Students attending Sandy Bay campus.....	12
Figure 3.7: Main Mode Share per year – Students attending Hobart CBD facilities .....	13
Figure 3.8: Residential Origin by Postcode 2021- Percentage of students attending Sandy Bay campus .....	13
Figure 3.9: Residential Origin by Postcode 2021 – Percentage of students attending Hobart CBD facilities.....	14
Figure 3.10: Main Mode Share per year – Students – Tasmania North (all Launceston) .....	15
Figure 3.11: Residential Origin by Postcode 2021 - Students Studying at Launceston Campuses (Newnham and Inveresk).....	16
Figure 3.12: Main Mode Share per year – Students – Tasmania Cradle Coast (all Burnie) .....	16
Figure 3.13: Main mode of transport to UTAS – international versus Tasmanian students...18	
Figure 3.14: Main Mode Share per year – Staff – All University of Tasmania .....	19
Figure 3.15: Main Mode Share 2021 – Staff – by campus and campus groupings (Note: The staff sample size for Inveresk, Cradle Coast and Sydney are too small to report) .....	19
Figure 3.16: Main Mode Share per year – Staff – Tasmania South .....	21
Figure 3.17: Main Mode Share per year – Staff – Sandy Bay Campus (Hobart) .....	21
Figure 3.18: Main Mode Share per year – Staff – Hobart CBD.....	22
Figure 3.20: Residential Origin Postcode 2021 – staff working at Hobart CBD facilities .....	23
Figure 3.21: Main Mode Share per year – Staff – Tasmania North.....	23
Figure 3.22: Residential Origin by Postcode 2021 – staff working at Launceston campuses (Newnham and Inveresk).....	24
Figure 3.23: Proportion of staff working from home by weekday and region (2021) .....	25
Table 3.1: Proportion of staff working from home (or remotely) – Monday to Friday average .....	25
Table 3.2: Main mode of transport for most prominent inter-campus trips (and return).....	26
Figure 3.24: Proportion of staff undertaking inter-campus trips in previous week.....	27
Figure 3.25: Proportion of staff using UTAS teleconferencing or videoconferencing ICT at least weekly .....	28
Figure 3.26: Tasmanian land-based inter-campus work trips – by trip type (2021) .....	29
Table 3.3: Main mode of transport for select Tasmanian inter-campus trips (and return)....	30
Figure 3.27. Impact of COVID-19 on public transport users.....	31
Figure 3.28: Use of a public transport information website or app (including trip planner) – all students and staff 2021.....	32

Figure 3.29: How likely would you be to take up an offer to salary-sacrifice annual bus fare expenses for the journey to and from work at UTAS?.....	33
Figure 3.30: What is the likelihood of you using the bus more to get to or from work at UTAS if you were able to salary sacrifice the annual cost of your bus fares? .....	33
Table 3.4: Direct bus services to Sandy Bay and the need for multiple buses by suburb ....	35
Figure 3.31: Bicycle as main mode – students – change over time .....	37
Figure 3.32: Bicycle as main mode – staff – change over time.....	37
Table 3.5: Ratios of male to female bicycle riders. Note: male to female ratios have been rounded .....	37
Figure 3.33: University facilities or information used by all bicycle riders (2021) .....	38
Figure 3.34. Percentage of efficient cars driven to the University in the week prior to the survey.....	40
Table 3.6: International student car ownership/access and use.....	41
Figure 3.35: Average parking days per week by car driver .....	41
Figure 3.36: Students – % of cars parked by category Mon-Sun.....	42
Figure 3.37: Staff – % of cars parked by category Mon-Sun .....	43
Figure 4.1: Student mode change over time by campus location – main mode to UTAS...	48
Figure 4.2: Student active mode change by major campus 2013-2021 and 2019-2021 .....	48
Figure 4.4: Staff active mode change by major campus 2013-2021 and 2017-2021 .....	49

## **ACKNOWLEDGEMENTS**

This document summarises findings from the University of Tasmania Travel Behaviour Survey 2021 (TBS 2021). The project team wishes to sincerely thank all students and staff who took the time to participate.

The project is initiated biennially by the University's Sustainability Team led by Corey Peterson, Associate Director - Sustainability within Infrastructure Services and Development. The surveys were carried out under the University of Tasmania Social Sciences Human Research Ethics Permit H0016363.

Data from the TBS 2021 is used to inform university transport and facilities planning and calculate greenhouse gas emissions from staff commuting, which are included in the University's greenhouse gas emissions inventory used to support the University's carbon neutral certification.

The University also wishes to acknowledge the interest in and support of this survey from our partners in the Cities of Hobart and Launceston, Tasmania state government, public transport service provider Metro Tasmania and NGO partner Bicycle Network. Our partners have reviewed questions in our surveys and participate in data sharing.

## GLOSSARY OF TERMS AND ABBREVIATIONS

Active transport	The combined total of walking/running and cycling
Carpooling	An arrangement, either through formal programs or informal efforts, between two or more people sharing a ride to a common or nearby destination
CBD	Central business district
Confidence level	A measure of the reliability of a result
E-bike	A motorised bicycle with an integrated electric motor used to assist propulsion
EoT	End of trip
ICT	Information and communications technology
IMAS	Institute for Marine and Antarctic Studies
Inter-campus	Movement between two university campuses or facilities
Inter-regional	Movement between regions
Intra-city	Movement within a city/urban area
Main mode	The single transport mode used for the furthest distance in the journey (consistent with the Greater Hobart Household Travel Survey 2010)
Margin of error	A measure of the accuracy of the results of a survey
Modal share	Also called mode split or mode share, modal share is the percentage of travelers or trips using a particular type of transport. It is an important indicator used for assessing sustainable transport
MSP	Medical Science Precinct
Multi-modal	Multi-modal journeys involve more than one trip step and mode
SIPS	Sustainability Integration Program for Students
STS	Sustainable Transport Strategy
SOV	Single occupant vehicle
Sustainable modes	The combined total of walking/running, cycling and public transport modes
TBS	Travel Behaviour Survey
UTAS	University of Tasmania
Virtual transport	Participation in meetings/classes/events without physically attending, usually with the assistance of ICT (e.g., videoconference)

## 1. BACKGROUND

The University of Tasmania's (UTAS) Sustainable Transport Strategy (2017-2021) guides investments and actions that deliver more socially, economically and environmentally sustainable transport outcomes<sup>1</sup>. Responding to the need for appropriate data, the *UTAS Travel Behaviour Survey* (TBS) project was initiated in 2012 with the first survey conducted in 2013 to provide baseline travel behaviour data for the university community and then ongoing data over time (biennially) to inform planning and performance indicators that underpin the University's sustainable transport strategies. The survey was initially designed and developed as part of the Sustainability Integration Program for Students (SIPS)<sup>2</sup>. The SIPS program provides opportunities to partner operational projects with student academic endeavours.

This report outlines key findings from the 2021 TBS. It identifies changes since the 2013 and subsequent surveys that will assist with further planning, as well as challenges and opportunities in relation to the university community's collective travel behaviours and practices, and systems and structures that influence these.

The results of the survey provide great insight into UTAS staff and student travel behaviour associated with university business (work and study) across university campuses and facilities in Tasmania and New South Wales. Supplemented and ground-truthed by a range of other smaller purpose-driven data collection associated with UTAS transport planning and management (e.g., vehicle traffic, motorcycle, bicycle, and pedestrian counts), the UTAS TBS has become a valuable comprehensive periodical dataset that informs not only university planning but also other agencies responsible for transport service delivery and infrastructure improvement.

UTAS is a growing institution, both in terms of numbers of students<sup>3</sup> and its facilities (acknowledging a slight decrease in student numbers since 2020 because of COVID-19 impacts). It is also one of the largest employers in Tasmania<sup>4</sup>. The University's facilities and associated activities generate a range of trips and transport infrastructure, and service demands beyond those just focused on the movement of students and staff to and from study or work. It is consequently important to understand more about student and staff movements to manage the impacts of the University's trip generation, improve access to facilities, and address inefficiencies or issues associated with university travel.

While the University is a growing institution, the drivers of changing travel patterns and transport infrastructure or service demands are not simply associated with an increasing university population. Rather it is the changing nature and location of the University

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<sup>1</sup> <http://www.utas.edu.au/infrastructure-services-development/sustainability/transport>

<sup>2</sup> [SIPS](#) is an award-winning program linking operational sustainability outcomes with student education and experience.

<sup>3</sup> Over 42,000 students were enrolled in 2020 with a third of these attending a campus (UTAS Data Analytics course enrolment data, December 2020).

<sup>4</sup> Over 4,200 employees in 2021 if fixed-term, ongoing, and casual staff are counted (UTAS Data Analytics staff data, June 2021).



population, and more recently the global COVID-19 pandemic, that have become important contributors to travel demand and changing travel patterns amongst students and staff. Particularly:

- Decrease in the number of students physically attending campuses/facilities due to the decline in the share of 'on-campus' student enrolments and the increase in online learning over time, especially during the global pandemic. In 2013 some 83% of all student enrolments were on-campus in some capacity whereas the figure in 2019 was 56%, and down to 49% in 2021.<sup>5</sup>
- A decrease in 2021 in 'on-campus' international students, particularly in Launceston. Even if in 2021 UTAS is an "on-campus" university, many international students have not been able to enter Australia because of the COVID-19 pandemic.<sup>6</sup>
- The dispersal of students and staff across city-based facilities as the University develops beyond its largest campuses. While the largest university campus continues to be the Sandy Bay campus (Hobart), there is an increasing number of students and staff attending facilities throughout the Hobart CBD as the University develops into this zone. The shift to the Hobart CBD in Tasmania's south and to the Inveresk campus in the north (on the fringe of the Launceston CBD) is set to continue as the University consolidates its facilities in these locations.

Compared to previous periods between surveys, there has been relatively little change in infrastructure between 2019 and 2021 as a result of the pandemic but also a focus on other sustainability priorities. That said, there has been some additional bike parking provision. Significant changes to public transport services to Newnham campus occurred with reduction of on-campus Turn-Up-and-Go by Metro Tasmania. The high frequency services still exist but require a significant walk of hundreds of metres to the nearest bus stop from the centre of campus. In addition, major construction projects were underway or started at both West Park in Burnie and Inveresk in Launceston.

Figure 1.1 shows the location of university campuses and major facilities in Tasmania and inner Sydney, New South Wales. The TBS collects data for all these campuses and facilities.

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<sup>5</sup> Between 2013 and 2021, UTAS student enrolments increased overall by 22%. Between 2013 and 2017, most of this increase comprised students enrolled in external (distance or online) capacity, with the overall number of students on-campus across the University remaining fairly constant. Since the last TBS, there has been a decrease in both distance and on-campus students across all campuses, with Launceston being the most affected, likely because of the COVID-19 pandemic.

<sup>6</sup> The number of international students as a share of on-campus students is 33% in 2021, with international students comprising 38% of on-campus Hobart students (UTAS Data Analytics course enrolment data, Semester 1 2021).



Figure 1.1: University of Tasmania campus/facilities locations 2021

## 2. ABOUT THE SURVEY

### 2.1. Method

The 2021 UTAS Travel Behaviour Survey was conducted via two online surveys in April/May 2021, one for UTAS staff and one for students, so that questions could be tailored to these specific communities.

Like previous years (2013, 2015, 2017 and 2019), an online survey was deemed the most suitable survey approach given available resources, the need to be able to reach all UTAS staff and student communities, and the need to provide capacity for periodically repeated surveys to allow for longitudinal analysis. Each survey is run at a similar time of year using similar data collection methods to ensure comparability across data sets. The 2021 surveys were open for two-weeks, 19 April – 3 May 2021. The TBS project has approval from the Tasmanian Social Sciences Human Research Ethics Committee (reference H0016363).

To recruit participants, bulk emails were sent to students and staff inviting them to participate. A second reminder email was sent out part way through the survey period. UTAS News and Facebook also included links to the survey in the lead up to its opening.

The staff survey asked participants to reflect on their travel behaviour for the previous week, such as what days of the week they travelled to and from work, by what transport mode or modes they travelled, and the length of their journey measured by time taken. Other questions focused on travel for work purposes, both inter-campus and to other non-UTAS destinations. Further questions were framed around car parking practices, public transport use (including information and ticketing), cycling infrastructure use, information and communications technology use to replace face-to-face meetings, and carpooling practices. Beginning in 2019 and continuing in 2021 we also asked opinion-based questions to gauge interest in public transport and cycling incentive schemes. Additionally, the 2021 survey asked questions to assist with northern and southern transformation projects, and to assess the impact of the COVID-19 global pandemic in travel behaviour. Survey questions and themes are outlined more fully in the Appendix.

The student survey replicated much of the staff survey; however, inter-campus travel for work was reframed as inter-campus travel for study. Questions about technology use for meetings were not included in the student survey.

Demographic questions were asked of staff and students to provide further participant context to the analysis, such as the primary campus of work/enrolment, age, gender, employment status, postcode, and suburb of residence.

### 2.2. Participation and statistical confidence

Survey participation details and statistical confidence are outlined in Table 2.1. Overall response was high, with response rates up from 2019. Staff participation was particularly high in 2021, though the share of responses was down in north Tasmania for staff. In 2021 there were 3,354 responses overall (students and staff combined) with 33% of the total

staff population participating and 13% of on-campus students. Participation rates varied slightly between campuses and regions. The following are the total responses for the largest Tasmanian regions:

- All regions – 2,057 student responses and 1,297 staff responses
- Tasmania south – 985 student responses and 834 staff responses
- Tasmania north – 252 student responses and 209 staff responses

Relative to the student on-campus and staff populations, sample sizes provide us with high levels of confidence for on-campus students and staff.<sup>7</sup> Due to only marginal difference in statistical confidence between each survey year, we have high confidence in our year-to-year comparisons. Completion rates in 2021 (percentage of respondents who completed all questions) were 79% for staff and 74% for students.

Table 2.1: Participation and statistical confidence of Travel Behaviour Surveys

	Student survey			Staff survey		
	Responses (Sample size)	Confidence level <sup>8</sup>	Margin of error	Responses (Sample size)	Confidence level	Margin of error
<b>2013</b>	3133	95%	+/- 1.6%	838	90%	+/- 2.6%
<b>2015</b>	3528	95%	+/- 1.5%	952	90%	+/- 2.4%
<b>2017</b>	1976	95%	+/- 2.1%	695	90%	+/- 2.9%
<b>2019</b>	2050	95%	+/- 2.0%	1114	90%	+/- 2.5%
<b>2021</b>	2057	95%	+/- 2.0%	1297	90%	+/- 1.9%

In both student and staff TBS 2021, there is a higher participation of female respondents than males (Table 2.2). This translates to only a small bias, as there is a higher proportion of females than males in the general student and staff populations. For instance, the University's staff gender profile was 55% women and 45% men in 2021 at the time of the survey with 0.1% of staff self-identified as having other gender identities.<sup>9</sup>

For the student population, some 65% of enrolments identified as women and 35% men in 2021,<sup>10</sup> although the gender difference narrows if external (online) enrolments are removed (55% women, 45% men) and 0.1% of students self-identified as having other gender identities. Where there is specific gender analysis, such as in calculating male to female cycling ratios, we have standardised the data according to the population gender split to remove bias.

<sup>7</sup> A confidence level of 95% means that there is a probability of at least 95% that the result is reliable. The larger the margin of error around a value, the less accurate the value.

<sup>8</sup> Confidence levels were calculated based on estimates of student on-campus/part on-campus populations provided by the University of Tasmania, and by using the Survey Monkey sample confidence calculator.

<sup>9</sup> UTAS Data Analytics, staff data April 2021

<sup>10</sup> UTAS Data Analytics, course enrolments April 2021

Table 2.2: Survey respondent profile (TBS2021)

	Students	Staff
<b>Location of study/work</b>		
Sandy Bay	48.6%	48.9%
Hobart CBD	20.3%	23.0%
Other South	2.2%	4.2%
<b>All South</b>	<b>71.1%</b>	<b>76.0%</b>
Inveresk	2.2%	1.3%
Newnham	15.2%	16.9%
Other North	0.9%	0.9%
<b>All North</b>	<b>18.2%</b>	<b>19.1%</b>
Cradle Coast campus	3.0%	2.6%
Rural Clinical School	1.2%	0.5%
West Park	0.1%	0.0%
<b>All North West</b>	<b>4.7%</b>	<b>3.6%</b>
Sydney (all campuses)	3.3%	1.1%
Other location (not specified)	2.7%	0.2%
<b>Gender</b>		
Men	30.4%	37.0%
Women	65.7%	59.6%
Not specified/self-described	3.9%	3.4%
<b>Employment status</b>		
Full-time		66.2%
Part-time		19.5%
Casual/short-term contract		12.4%
<b>Student origin</b>		
Tasmanian student	62.7%	
Interstate student	23.5%	
International student	13.9%	

### 2.3. How results are reported

Results are reported for students and staff separately, except for a few key performance indicators where student and staff survey results are aggregated. Results are reported for the University as a whole, at regional scales (i.e., South, North and North West Tasmania, and Sydney), and at the campus scale. Where there are several smaller campuses/facilities in the same vicinity, we have chosen to group them and report aggregate results (such as Hobart CBD).

Table 2.3: Reporting scales

Reporting scales (groups)	Campus and facilities incorporated within reporting scales
<b>South</b> – all campuses and facilities located in and around greater Hobart	Sandy Bay, Medical Sciences Precinct (MSP), Institute of Marine and Antarctic Studies at Salamanca and Taroona, The Hedberg, College of the Arts, Domain, Media School at Salamanca, KPMG building, Vodafone building, New Town Laboratories, Mt Pleasant Observatory, all Hobart student accommodation facilities, Cambridge farm
<b>North</b> – all campuses and facilities located in and around greater Launceston	Newnham, Inveresk, Launceston Clinical School, Henty House, TIA offices at Prospect, Australian Maritime College at Beauty Point and Bell Bay, all Launceston student accommodation facilities
<b>Cradle Coast</b> – all campuses and facilities located in and around Burnie	Cradle Coast campus, Rural Clinical School, West Park, all Burnie student accommodation facilities, Forthside and Elliot farms
<b>Sydney, NSW</b> – all campuses and facilities located in inner Sydney	Rozelle and AMC Darling Harbour
<b>Hobart CBD</b> – all facilities located in the Hobart central business district and waterfront (CBD)	Medical Sciences Precinct (MSP), Institute of Marine and Antarctic Studies (IMAS-Salamanca), The Hedberg, College of the Arts, Domain, Media School at Salamanca, KPMG building, Vodafone building, all Hobart CBD student accommodation facilities

With five biennial data sets now available, comparisons over time for transport mode share are possible. In order to consider changes over time and note differences in mode share by place, we report on the mode share and how this compares over time:

- For the University as a whole
- By region
- By major campuses or campus groupings

It should be noted that the mode share reporting method for 2017, 2019 and 2021 changed from 2013 and 2015, although data is still comparable. In all surveys since 2017 (inclusive), we have removed the reporting of the proportion of respondents studying or working from home (virtual transport) and have adjusted 2013 and 2015 data accordingly. This means that the proportions reported in this report differ slightly from those reported in the 2013 and 2015 Summary Reports. The adjusted data means that we can compare across years more accurately and report on only those people travelling to a university campus or facility. Work from home/virtual transport is still reported in a separate section.

### 3. FINDINGS

This section presents findings relating to transport mode share, land-based inter-campus travel, and use of public transport, bicycle and parking infrastructure and services.

#### 3.1. Journey to work and study

The following sections report on transport modes used for travel to/from university facilities for work or study. We report on both multi-modal journeys and the main mode. Multi-modal journeys involve more than one trip step mode, while main mode is defined as the single mode used for the 'farthest distance' in the journey. The latter is used as a key performance indicator for university transport planning.

##### 3.1.1. Multi-modal journeys to university

Around one in four students and one in five staff respondents reported their journeys to the University in Tasmania and Sydney as multi-modal (these journeys include those with walking components longer than 5 minutes).

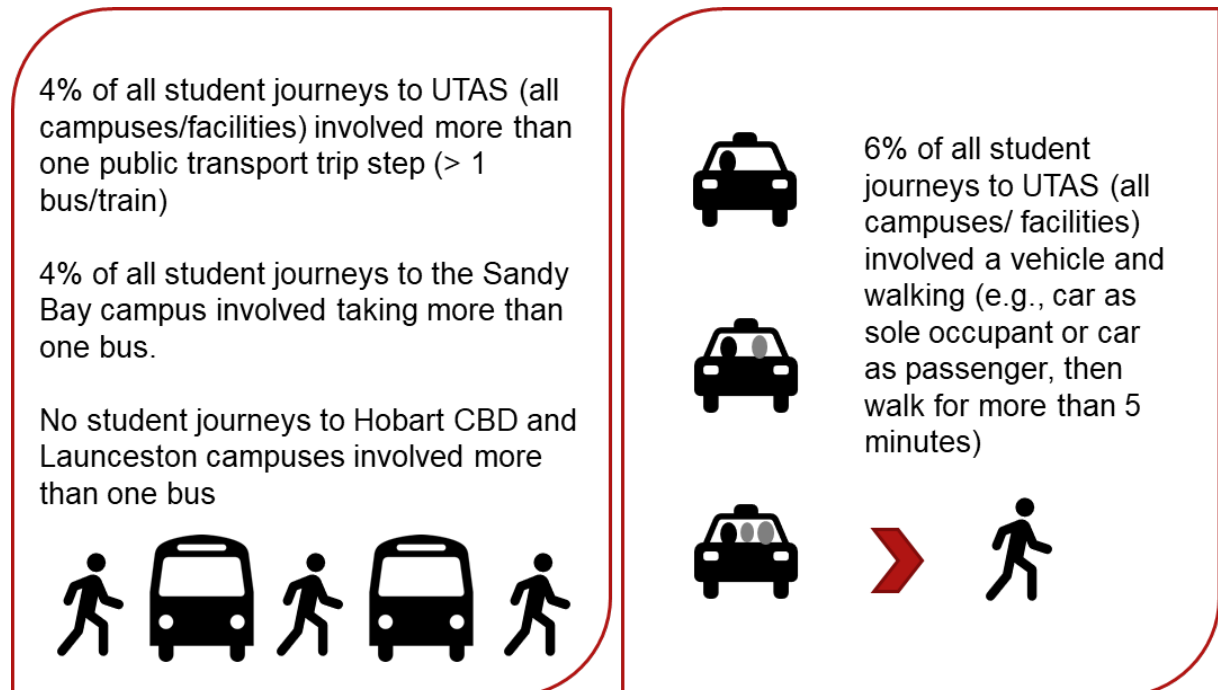


Figure 3.1: Dominant student multi-modal journey types to university, 2021

Some 4% of all student journeys to UTAS involved more than one public transport trip step (i.e., at least two buses, or in Sydney possibly a train and a bus). For students travelling to the Sandy Bay campus 4% of all journeys involved taking at least two buses (19% of multimodal journeys). This compares to no students taking more than one bus when travelling to UTAS Hobart CBD facilities. The vast majority of journeys to Launceston campuses are not multi-modal and no students reported taking more than one bus to get to campus. Some 6% of all student journeys to UTAS involved a vehicle (single or multi-occupant driver or passenger) and walking for more than 5 minutes (Figure 3.1).

For staff, 5% of all journeys to university (26% of all multi-modal journeys) involved a mix of sole occupant and multi-occupant vehicle journeys, which is down from the 9.5% and 32% respectively recorded in 2019. These vehicle trips likely involve riding with family or friends at some point in the journey (frequently referred to as carpooling), also involving dropping off or picking up other household members (i.e., children to day-care or school, partner to workplace or bus stop). The largest staff multi-modal journey type was single occupant vehicle and walk, where staff drove, parked, and walked more than 5 minutes to their workplace (Figure 3.2). For Hobart CBD staff, where parking is more constrained, the vehicle is often parked on the inner-city fringes.

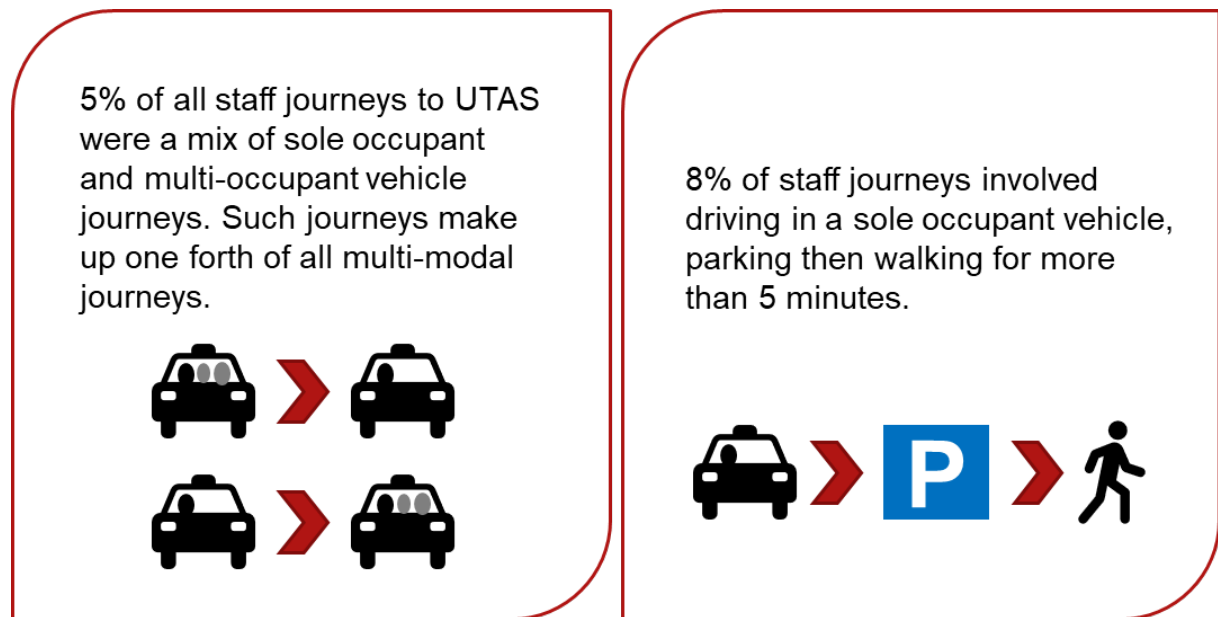


Figure 3.2: Dominant staff multi-modal journey types to university, 2021

### 3.1.2. Student main mode to study

Survey results show a gradual increase between 2013 and 2017 in the use of sustainable modes by students as the main mode for their journeys to/from university overall (walk, bicycle, bus/train), followed by a stabilisation between 2017 and 2019, and then a decline in 2021 to a different composition but similar levels of sustainable modes to 2013 (Figure 3.3). Public transport use grew consistently over reporting periods until 2021, where a 6 percent points drop in bus/train use occurred. This drop could be related to the COVID-19 pandemic. However, public transport use is still 8 percent points higher than the 2013 reporting period. The proportion of students cycling remained relatively static across previous reporting periods but experienced a 1.3 percent points increase from 2019 to 2021. While this is a small change when considering the whole mix of transport options, it represents a 22% increase in the number of people cycling to campus. Walking has declined over all reporting periods but has seemingly stabilised in 2021. Car-based mode use increased in 2021 after experiencing a declining from 2013-2017 and stabilising in 2019.



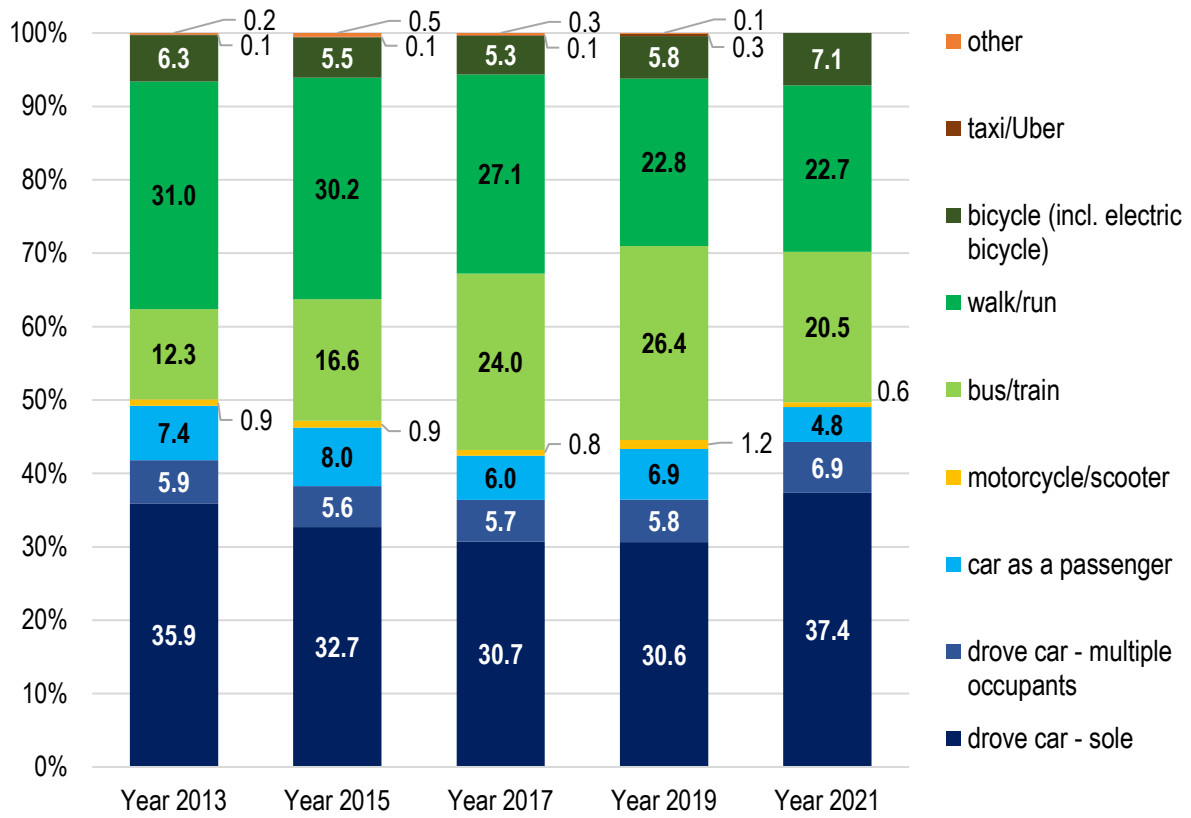


Figure 3.3: Main Mode Share per year – Students – All University of Tasmania

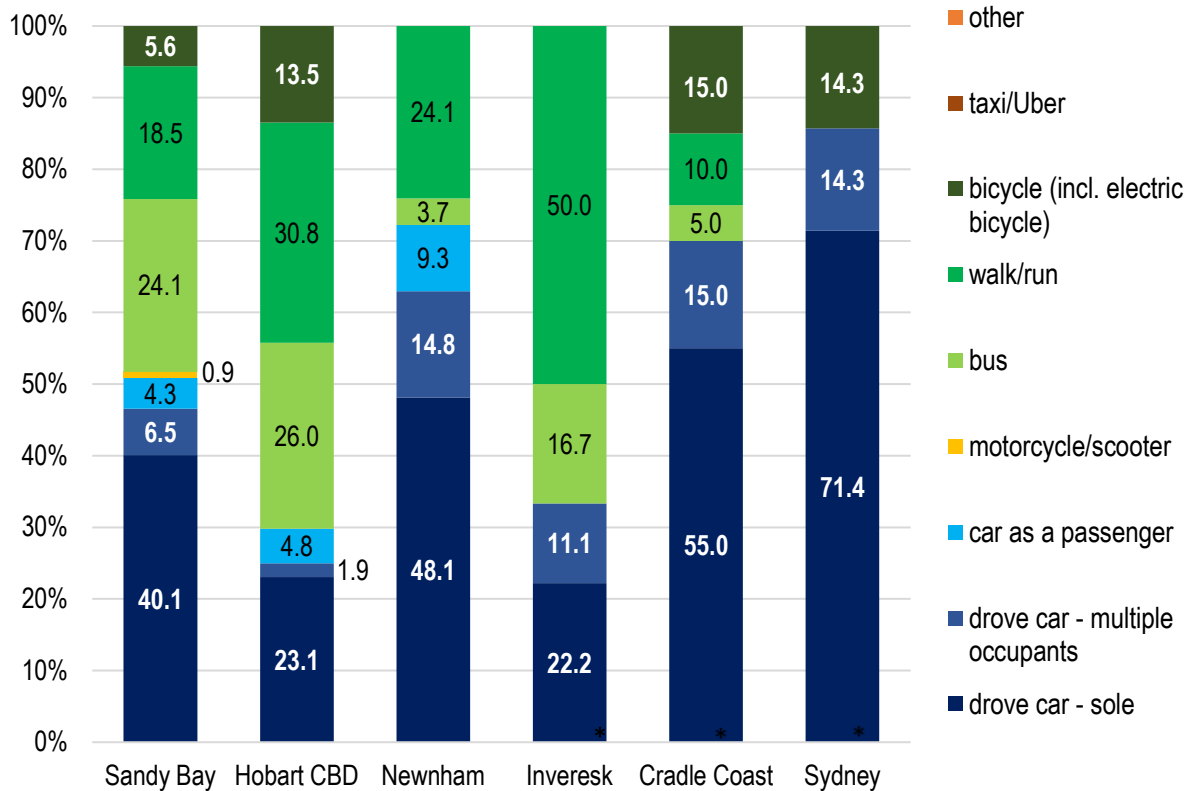


Figure 3.4: Main Mode Share 2021 – Students – by campus and campus groupings

Travel mode distribution varies significantly between regions and campuses, with students attending facilities located in, or near to, city centres using more sustainable modes (see Hobart CBD compared to Sandy Bay, and Inveresk compared to Newnham, for example) (Figure 3.4).

Note: Sample sizes for some campus locations are < 100 partly due to the increase in students studying from home (Newnham n=54, Inveresk n=18, Cradle Coast n=20, Sydney n=7). Analysis of data collected from these campuses is taken with caution.

### ***Southern Tasmanian Campuses***

In the south, a shift away from single occupant vehicle use had been observed for students over time. However, in 2021 sole occupant car journeys increased to the highest observed rate since the beginning of the surveys (Figure 3.5). This change was driven mostly by the change in behaviour of students attending the Sandy Bay campus (Figure 3.6).

Growth in bus use by students since 2013 was curtailed in 2021, with a drop of around 4 percent points in this mode share from 2019 (Figure 3.5). This was again driven by behaviour observed at the Sandy Bay campus (Figure 3.6) as bus usage did not decrease at Hobart CBD campuses (Figure 3.7).

Cycling experienced a boost across all campuses in 2021 (Figure 3.5). Across all reporting periods, cycling has not followed a clear trend. However, cycling rates have remained consistently larger since 2015 in Hobart CBD campuses compared to the Sandy Bay campus (Figure 3.6 and 3.7).

There has been an overall steady decline in the number of students walking to southern campuses (Figure 3.5), mainly led by those traveling to the Sandy Bay campus (Figure 3.6). Rates of walking to the Hobart CBD campuses do not appear to have any clear trend. There was a spike in walking to CBD campuses in the 2017 and 2019 reporting periods, but rates have now reverted to observed 2015 levels (Figure 3.7).

Students attending Hobart CBD facilities continue to display the most sustainable travel behaviours of all UTAS facility locations, particularly active modes. Some 70% of Hobart CBD students travelled by a sustainable mode.

Some 53% of students attending southern facilities live within the City of Hobart local government area (Figure 3.8 and Figure 3.9). The proportion is highest for those attending Hobart CBD facilities (58%) where more than half of these live in the city centre and inner-city suburbs immediately bordering the city centre (West Hobart, Battery Point, South Hobart, North Hobart). The concentration of students in these inner locations provides a high level of accessibility to UTAS Hobart CBD facilities, particularly by active modes.

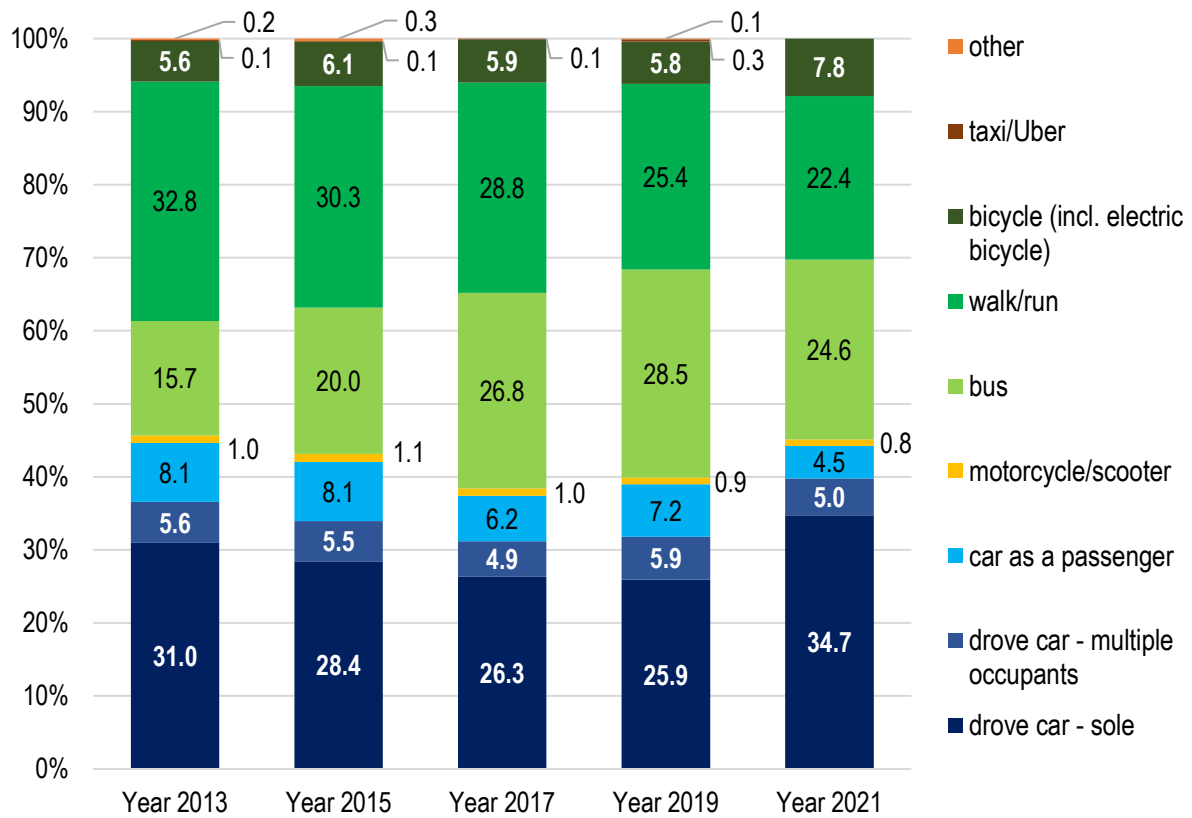


Figure 3.5: Main Mode Share per year – Students – Tasmania South (all Greater Hobart)

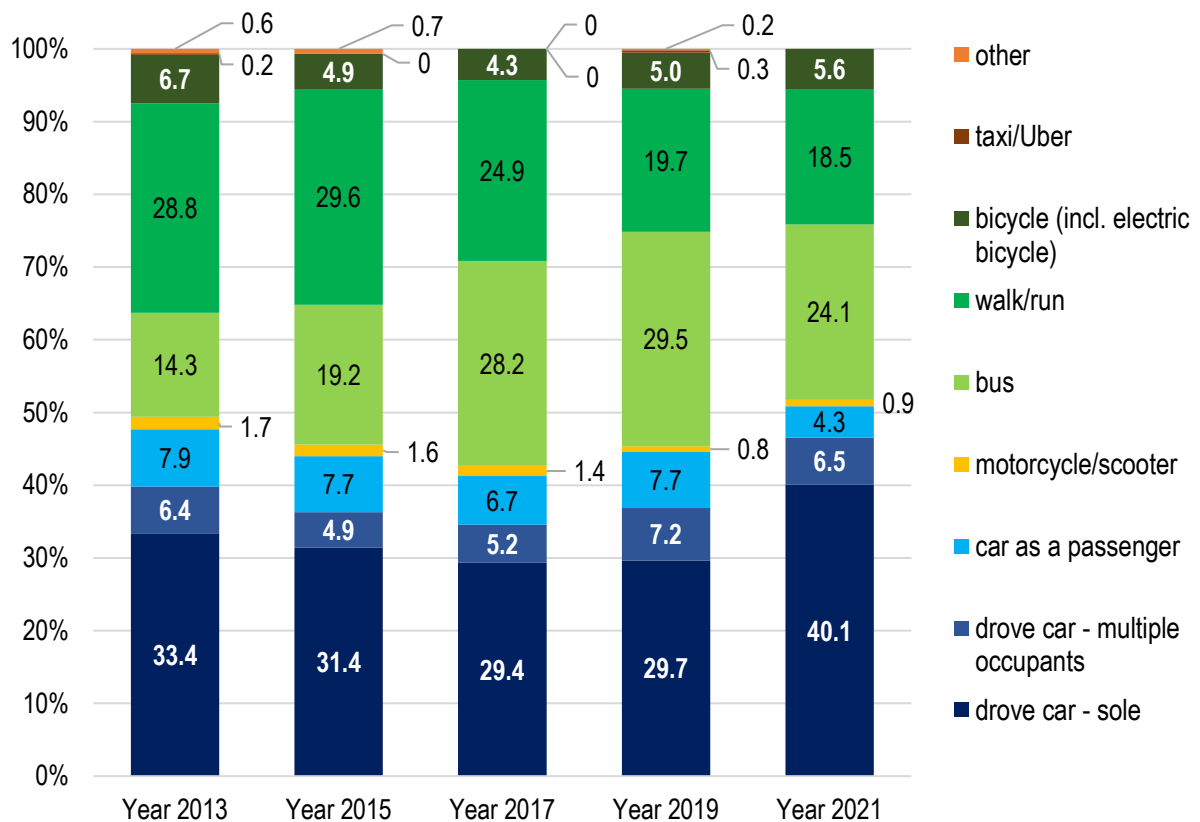


Figure 3.6: Main Mode Share per year – Students attending Sandy Bay campus

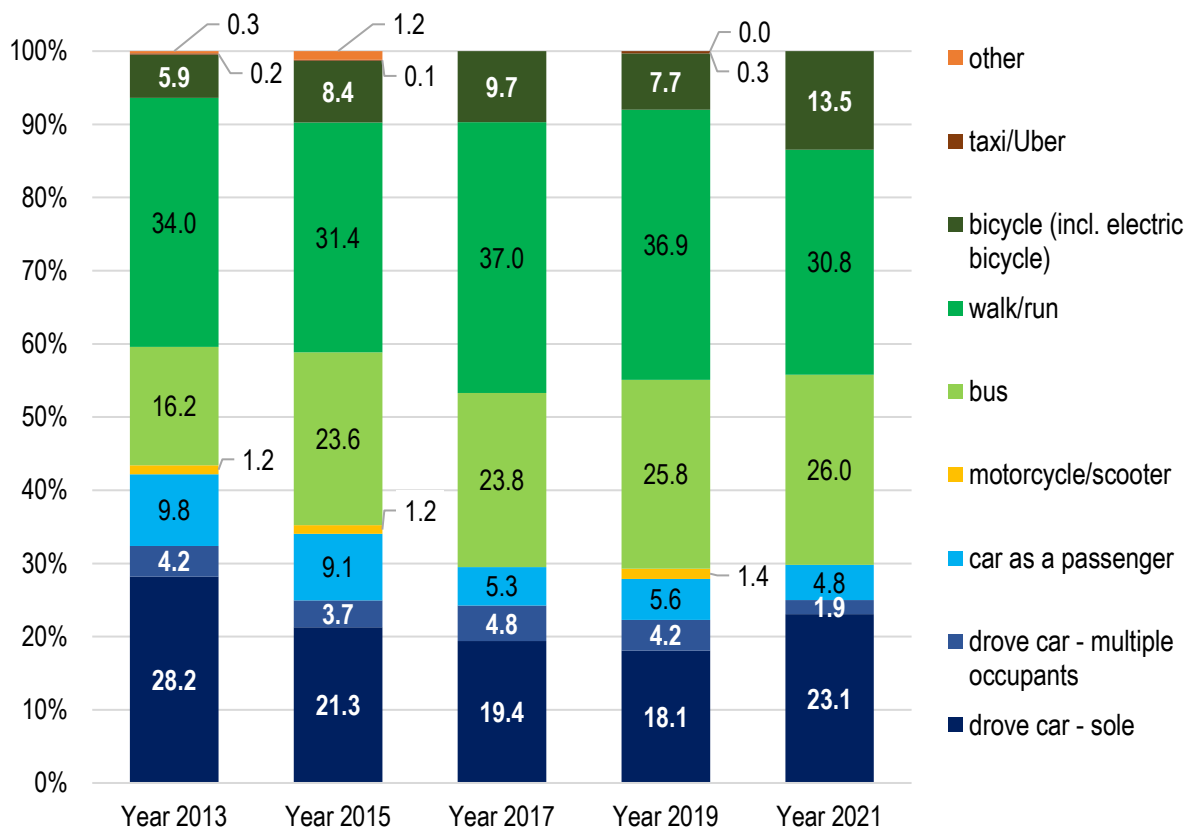


Figure 3.7: Main Mode Share per year – Students attending Hobart CBD facilities

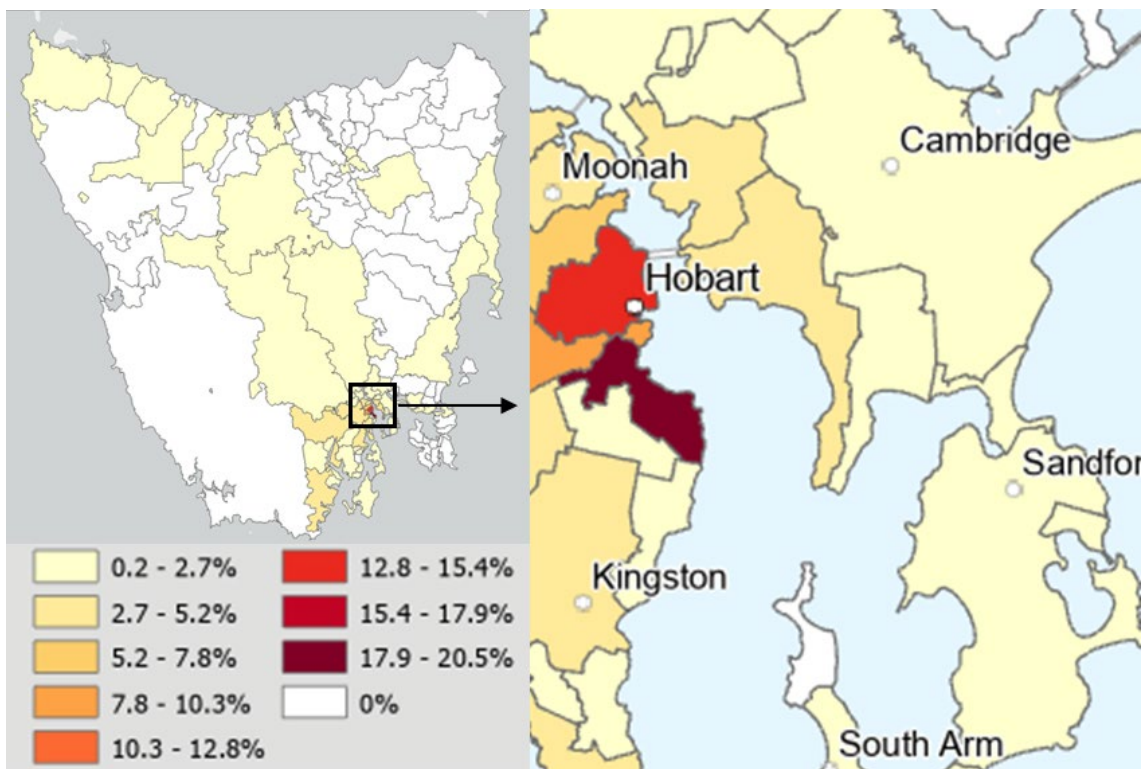


Figure 3.8: Residential Origin by Postcode 2021- Percentage of students attending Sandy Bay campus

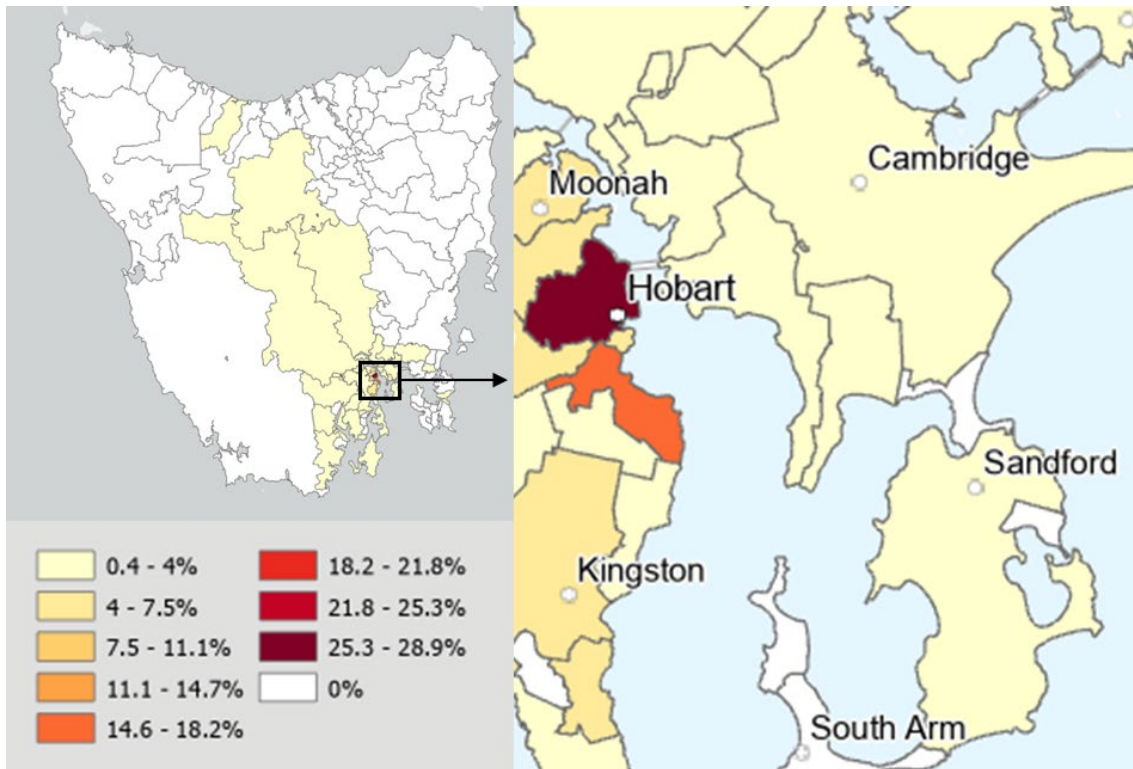


Figure 3.9: Residential Origin by Postcode 2021 – Percentage of students attending Hobart CBD facilities

**Northern and North Western Tasmanian Campuses**

As shown in Figure 3.10, between 2013 and 2017 bus use amongst students attending Launceston campuses tripled following improvements to bus services – particularly the introduction of the ‘Turn-up-and-Go’ service between Launceston CBD and Launceston UTAS campuses at Inveresk and Newnham. A significant decrease in bus use as the main mode from 17.3% in 2019 to 7.6% in 2021 was observed. This decline might have been partially driven by the COVID-19 pandemic, but also by the change in bus routes, with many of the high frequency Turn-up-and-Go services no longer entering the Newnham campus thus requiring a long walk to Georgetown Road or the Mowbray retail precinct.

Rates of cycling at the Launceston campuses in 2021 also experienced a decrease and an overall downwards trend, from 8.8% in 2013 to 1.3% in 2021. Walking as a main mode of transport has not exhibited a general trend over all reporting periods but has increased since 2019, with the 2021 period reporting a similar share to that observed in 2013. Car use as sole driver has shown an upwards trend over the last two reporting periods, though it is still lower than 2013.

The challenge for Launceston campuses and their future development will be to enhance accessibility for students residing within the Launceston local government area as well as the greater region, especially growth suburbs to the south. As can be seen in Figure 3.11, more than 60% of students live within the Launceston postcodes 7250 and 7248 (see light and darker red area). More than 30% live in suburbs surrounding the Newnham and Inveresk campuses (Newnham, Mowbray, Invermay, Launceston - see darker red area in

Figure 3.11). Growing sustainable mode-use and maintaining its viability and attractiveness over time will be essential as UTAS transitions to its new facilities within Launceston. This will mean continued investment in infrastructure, public transport services and well-located student accommodation. Importantly, it will also require a review of parking and other incentives for car use, keeping in mind the needs of students travelling from regional locations.

While the student sample size for Cradle Coast campus locations in north western Tasmania is small (<100), it is of a sufficient size for analysis of crude indicators at least, though results should be considered with caution. Results for 2019 showed some promising trends, with a significant shift to bus and walk modes. However, 2021 results show a reverse trend. This might be partly because the 2019 Cradle Coast sample included students living at the West Park accommodation, which is more central to the Burnie city centre, while no students from this facility completed the survey in 2021. In addition, Metro Tasmania made changes to bus routes and timetables that may have had a negative impact on students. Cycling has been historically low for Cradle Coast campuses, however 15% of respondents used a bicycle in 2021 to attend a Cradle Coast facility in 2021.

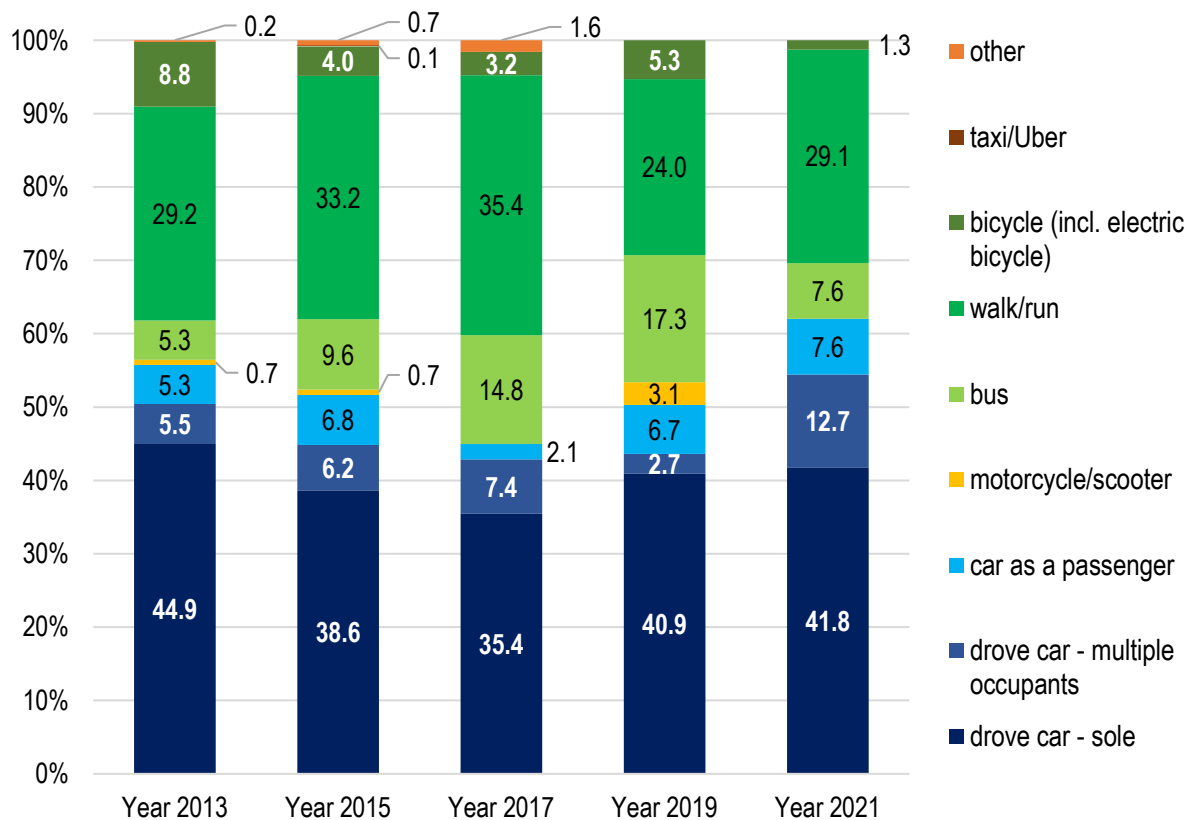


Figure 3.10: Main Mode Share per year – Students – Tasmania North (all Launceston)

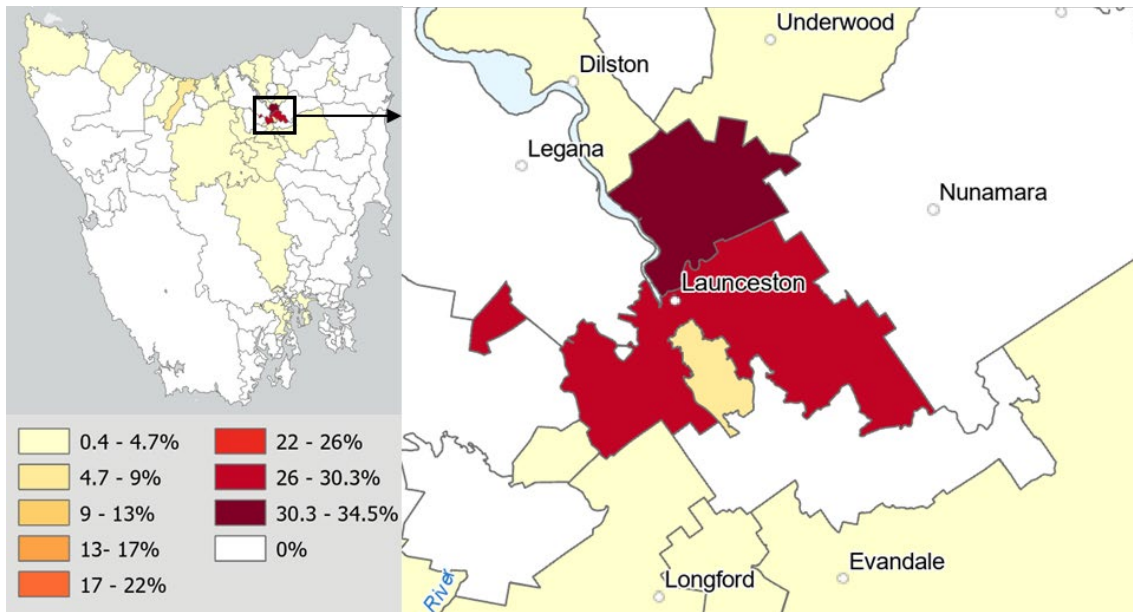


Figure 3.11: Residential Origin by Postcode 2021 - Students Studying at Launceston Campuses (Newnham and Inveresk)

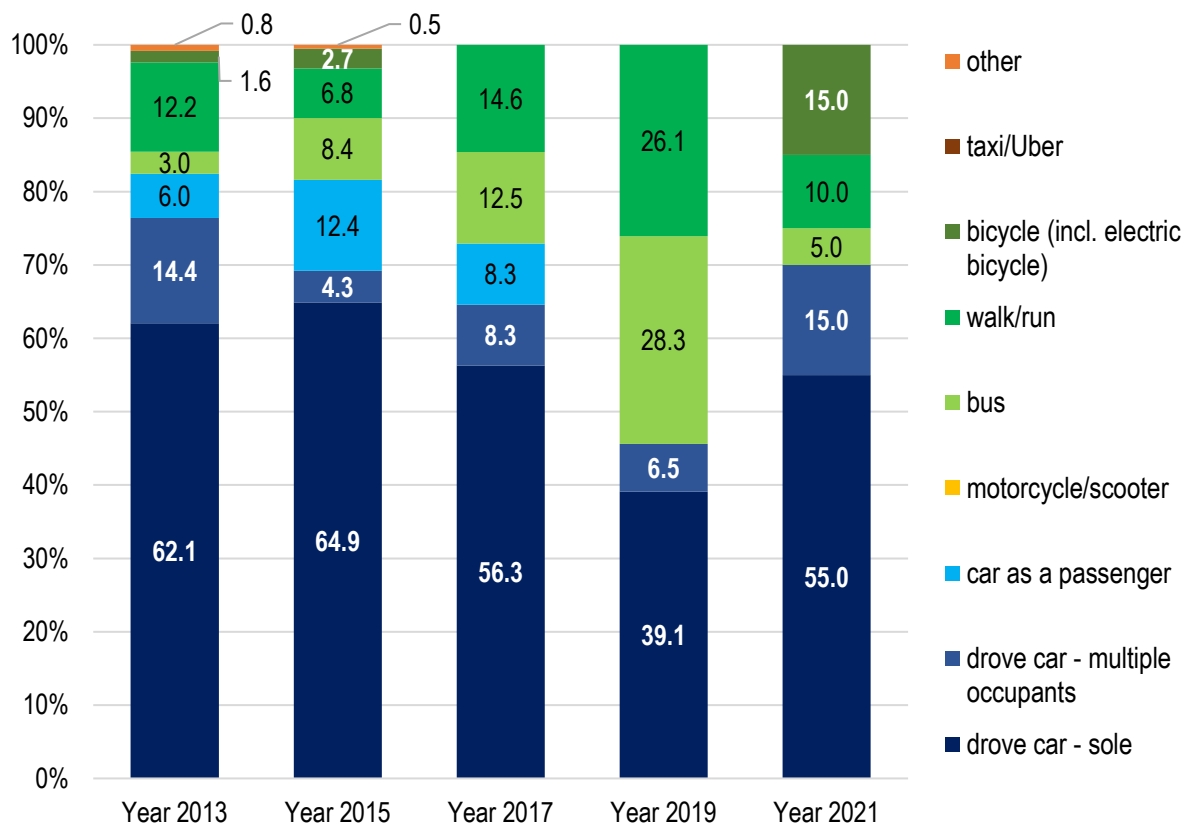


Figure 3.12: Main Mode Share per year – Students – Tasmania Cradle Coast (all Burnie)

Note: Year-to-year comparisons are to be taken with caution for this region as sample sizes for Cradle Coast are small, being <100. Instead, the data provides a crude indication only of the mode share.

### **Sydney Campuses**

Only seven respondents attended Sydney facilities (Rozelle and AMC Darling Harbour) in the 2021 student survey, therefore data comparison to previous years will not be represented graphically in this report. It can be noted that most respondents (71%) drove a car as a sole occupant, while remaining responses were equally distributed between riding a bike and driving a car with multiple occupants.

In previous years (2015 to 2019) public transport use increased notably over time while sole-driver car use steadily decreased. The lack of public transport use in 2021 may be due to the higher number of COVID-19 cases and lockdown periods in Sydney than experienced in Tasmania. Walking as the main mode fluctuated a little over the three previous survey periods, however there was no record of anyone cycling in the 2017 and 2019 samples. The latter is not so surprising since Sydney overall has experienced a steady decline in cycling participation<sup>11</sup>.

### **International and local students**

With the notable increase in on-the-ground international student enrolments until the global pandemic, the University has a growing responsibility to ensure students are accommodated appropriately and can get to and from their classes efficiently and without significant cost to themselves or the community. International students come from a wide range of countries and bring with them their own experiences and expectations of transport. Many, such as Chinese students, have experienced high quality public transport systems back home or different cultures of bicycle use and find it challenging shifting to a different, largely car-based transport culture.<sup>12</sup>

As an indicator of difference, we compared international and Tasmanian students attending Sandy Bay and Hobart CBD campuses. For international students mostly attending the Sandy Bay campus, 72% were living in either Sandy Bay (postcode 7005) or surrounding suburbs (postcodes 7000, 7004, 7007, 7053). This compares to 39% of Tasmanian students. These locations are largely accessible by walking, cycling, or short bus trips. For international students attending Hobart CBD facilities, 65% lived within Hobart (postcode 7000) or neighbouring suburbs to the south and north (postcodes 7004, 7005, 7008) compared to 46% of Tasmanian students. For international students in southern campuses some 19% live in UTAS student accommodation (the share is the same for those attending Hobart CBD facilities and Sandy Bay Campus) compared to 8% of Tasmanian students. In the north the share of international students living in UTAS student accommodation is 24% compared to 10% for Tasmanian students.

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<sup>11</sup> Australian Bicycle Council <http://www.bicyclecouncil.com.au/publication/nationalcycling-participation-survey-2017>

<sup>12</sup> Yelan Yang, 2017. *Understanding transport experiences and expectations of Chinese students in Hobart*. Thesis submitted in partial fulfilment of the requirements for Masters of Planning, School of Land & Food (Geography), University of Tasmania.



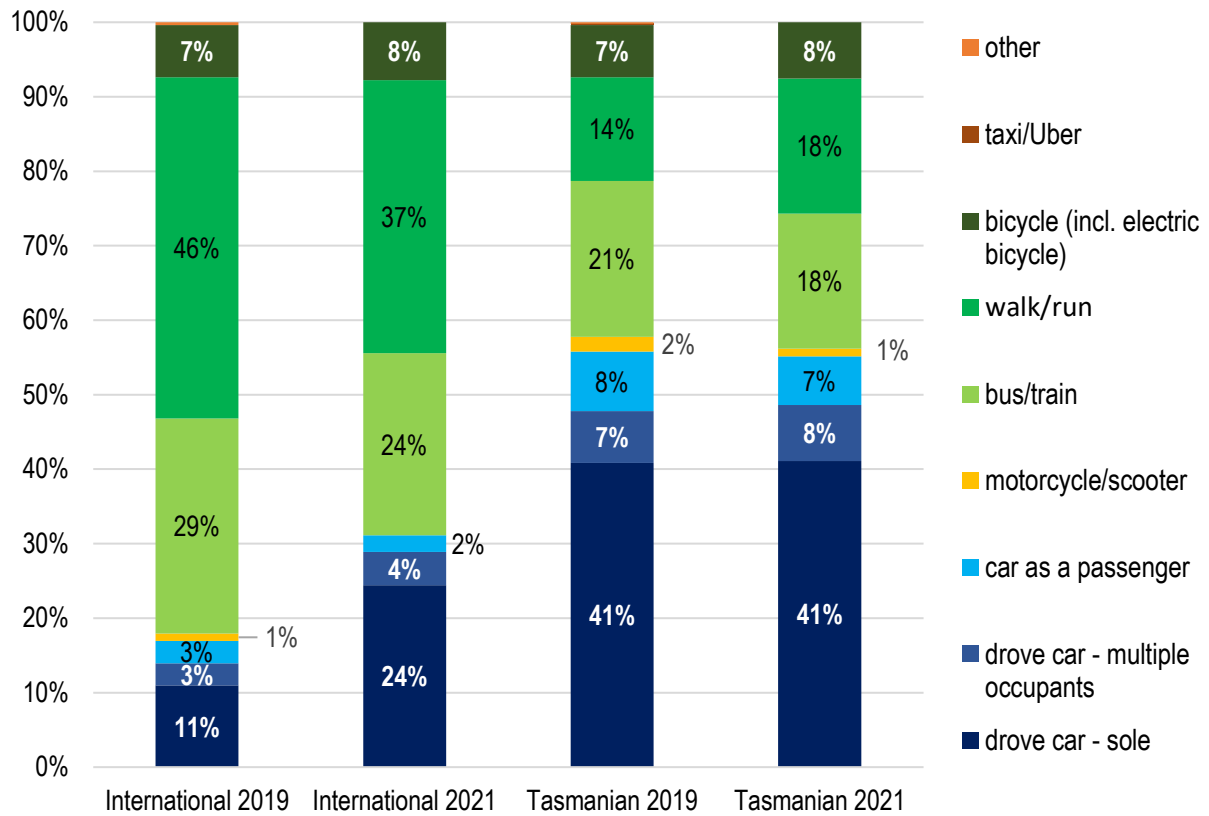


Figure 3.13: Main mode of transport to UTAS – international versus Tasmanian students

Tasmanian students are more likely to travel by car than international students (some 41% of Tasmanian students as sole driver compared to 24% of international students in 2021). This is most likely influenced by a range of factors, including the much more dispersed residential locations of Tasmanian students across (and outside) Greater Hobart and Launceston relative to the more centralised residential locations of international students, and public transport service quality and journey time from outer urban areas. The Australian culture of car use and the option for some local students to use family vehicles are also likely other contributors. However, the number of international students using cars as their main mode of transport increased, with the number of international students as the sole occupant of a car more than doubling from 2019 to 2021. The behaviour of Tasmanian students has remained rather consistent over 2019 to 2021 except for an increase in walking and decrease in taking the bus.

### 3.1.3. Staff main mode to work

Main travel mode for staff journeys to the university for work is quite different to that for students, with staff residential origins tending to be more dispersed. For the University overall, Figure 3.14 shows that there has been very little change in car-based modes and sustainable modes collectively (i.e., walk, bicycle, bus). Like students, however, mode distribution from region to region and campus to campus varies notably as shown in Figure 3.15. The proportion of staff using active or sustainable transport is considerably lower than that of the students at a whole university level (Figure 3.3 and Figure 3.14)

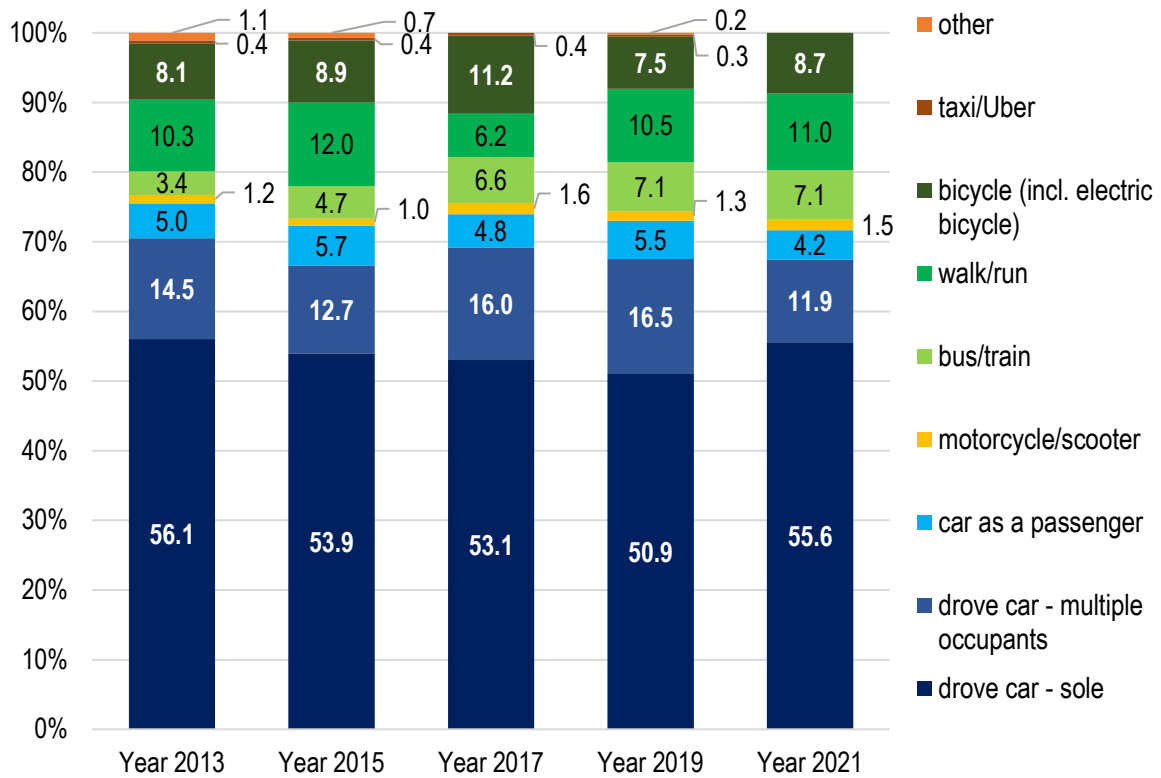


Figure 3.14: Main Mode Share per year – Staff – All University of Tasmania

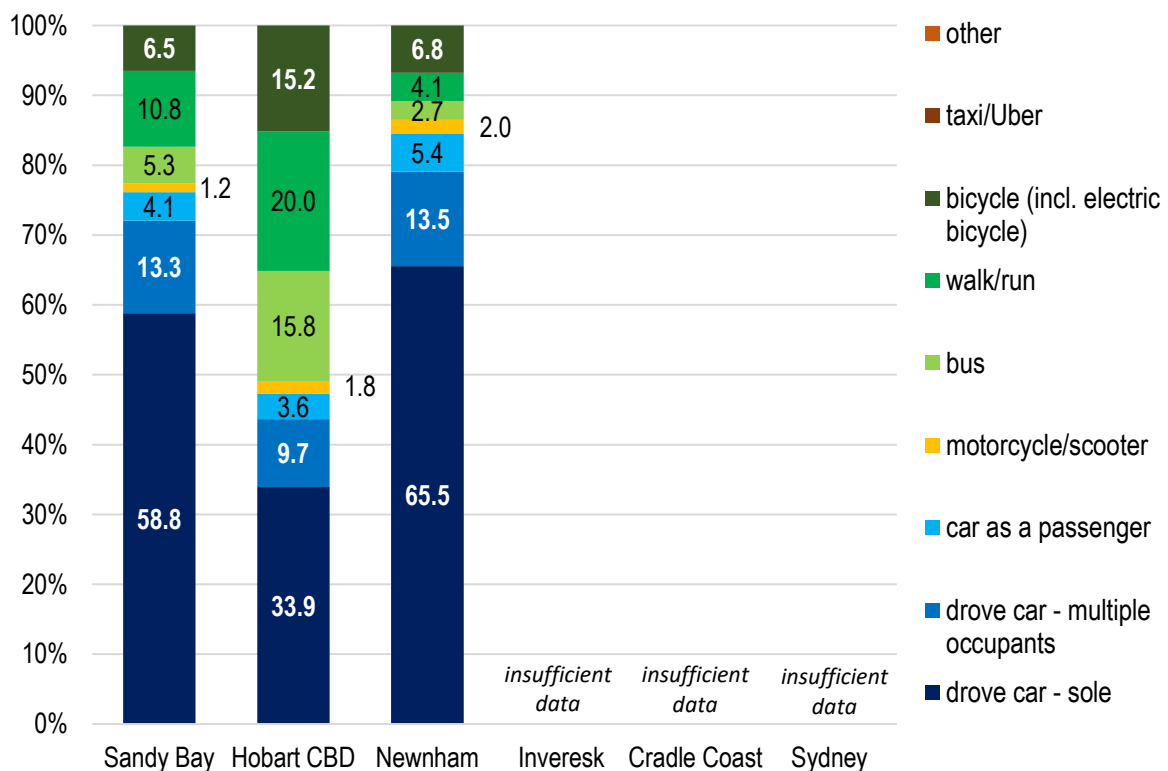


Figure 3.15: Main Mode Share 2021 – Staff – by campus and campus groupings (Note: The staff sample size for Inveresk, Cradle Coast and Sydney are too small to report)

### ***Southern Campuses***

Staff located in the Hobart CBD have more than double the share of sustainable mode use in 2021 compared to those located at Sandy Bay campus, with 51% of main modes being sustainable in Hobart CBD compared to 23% at Sandy Bay (Figure 3.17 and Figure 3.18)

Over time, steady positive changes in bus use are observed. Bicycle use has not changed much since 2019 but is still lower than the share achieved in 2017. The decrease in cycling in the South overall is driven by the trend observed at the Sandy Bay campus (Figure 3.17), whereas the Hobart CBD campuses have experienced increases in the rates of cycling since 2015 (Figure 3.18). The share of people walking has increased in each survey since 2017, bringing it close to 2015 levels (Figure 3.16). Walking patterns are similar for Sandy Bay and Hobart CBD campuses, but CBD campuses exhibit a higher amount of walking overall across each period (Figure 3.17 and Figure 3.18).

Car use in sole occupant vehicles across the South has increased to 52%, its largest rate ever recorded (Figure 3.16). This trend has been observed for both Sandy Bay and Hobart CBD campuses (Figure 3.17 and Figure 3.18). Carpooling decreased across all campuses in the South (Figure 3.16), with the majority of the decrease occurring at the CBD campuses (Figure 3.18). At Sandy Bay campus, the all-time high of sole occupant cars is paired with an all-time low of people driving cars with a passenger. However, the number of people as passengers within cars has remained relatively steady since 2013.

Bus use at the Sandy Bay campus has continued to slowly increase over time, with the share of bus use now over double that 2013 levels. Active transport modes have also increased since 2017 but are still not as high as in previous surveys (Figure 3.17). Sandy Bay campus staff have a less sustainable mix of main modes than Sandy Bay students. The trends in the share of main transport modes are dissimilar for Sandy Bay staff and students except for a notable spike in sole occupant cars (Figure 3.6 and Figure 3.17).

The share of sustainable main modes used to travel to Hobart CBD campuses by staff is now at the highest rate ever experienced. However, it is not clear if this is part of a larger positive trend, as both increases and decreases in the share of sustainable modes have been observed over reporting periods, especially for walking (Figure 3.18).

Figure 3.19 and Figure 3.20 show that in 2021 a higher proportion of staff live locally for those working at UTAS Hobart CBD facilities than those working at the Sandy Bay campus, though residential origin patterns do not differ significantly for either workplace locations. Living locally enables walking and cycling mode choice. A good number of staff still live in suburbs that have reduced public transport convenience, being away from transport hubs or high frequency corridors.

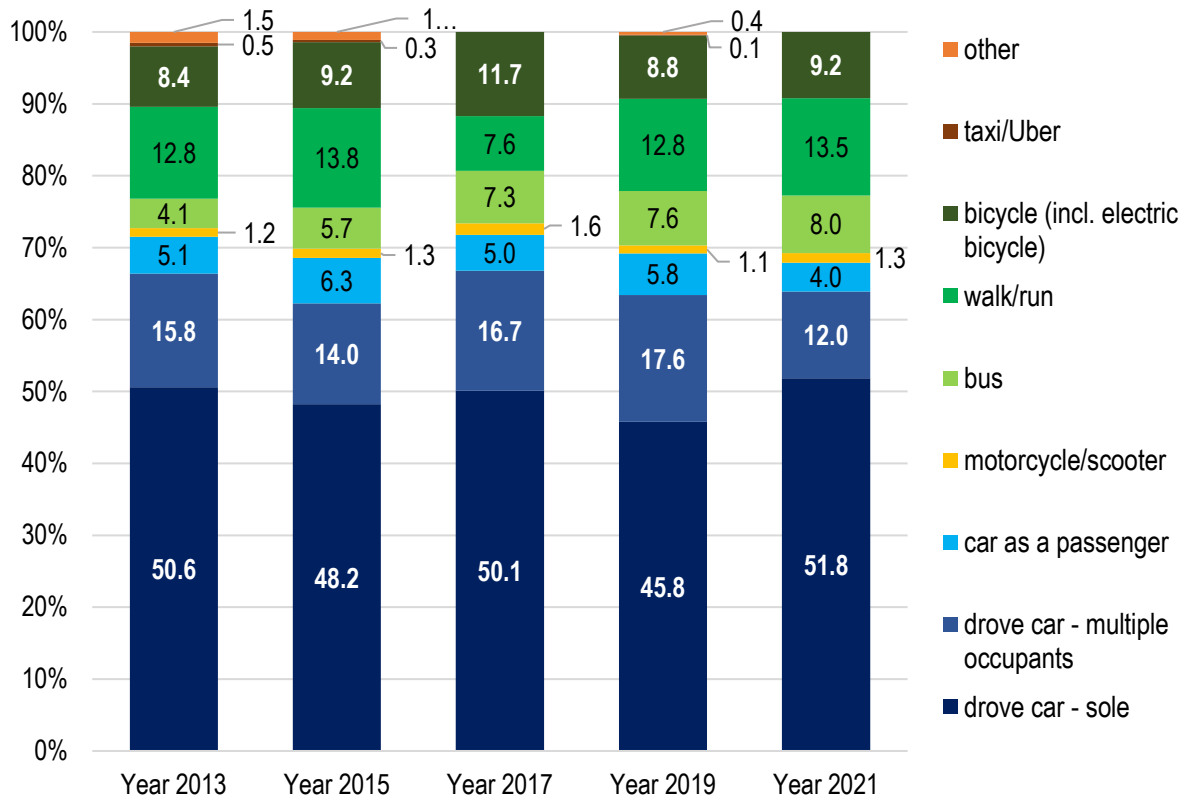


Figure 3.16: Main Mode Share per year – Staff – Tasmania South

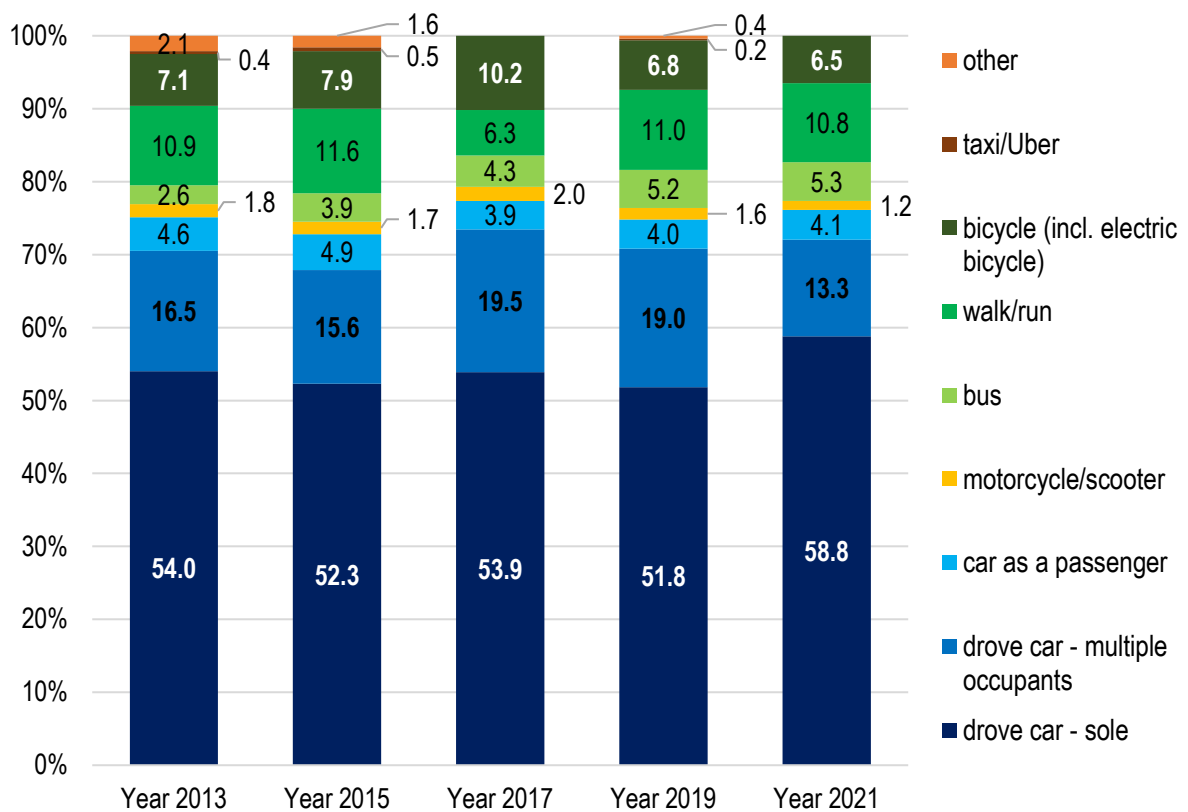


Figure 3.17: Main Mode Share per year – Staff – Sandy Bay Campus (Hobart)

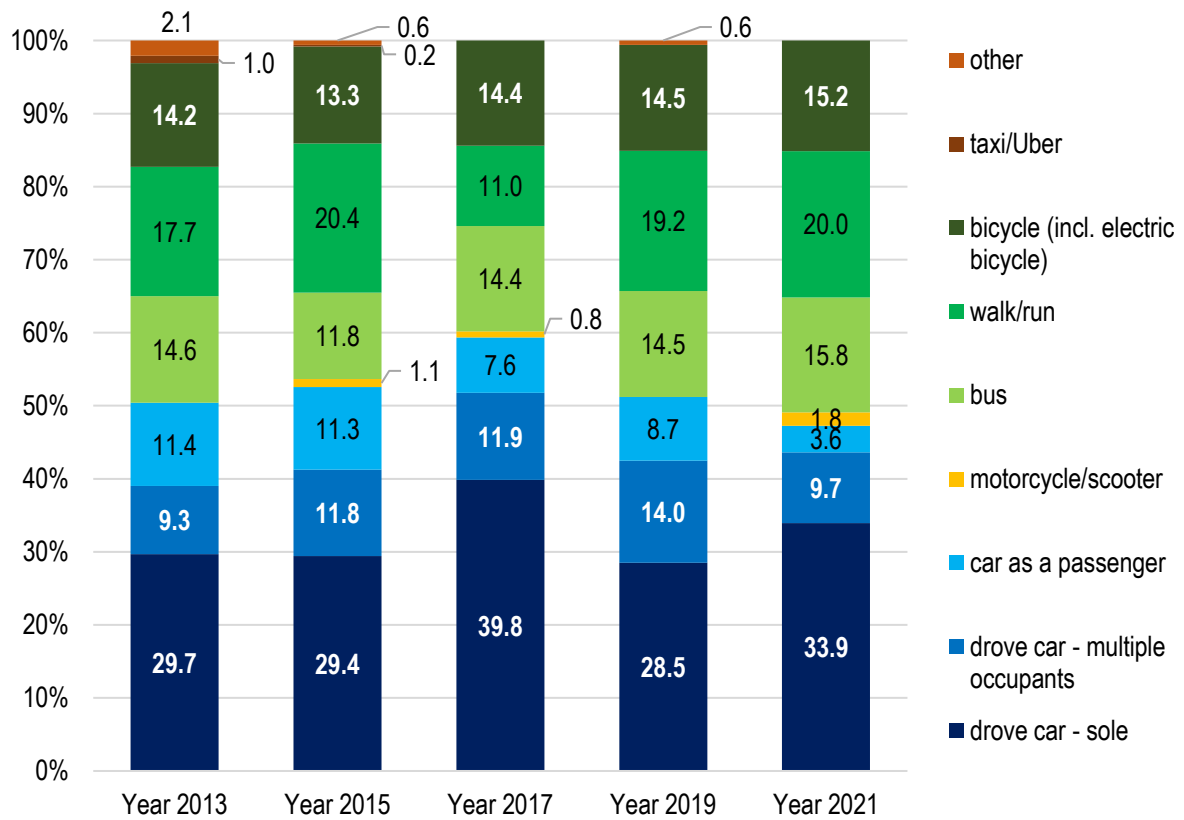


Figure 3.18: Main Mode Share per year – Staff – Hobart CBD.

Note: CBD facilities have changed over time as they were built/occupied. It should also be noted that there have been increasing percentage of staff and students located in the CBD over the period since 2013. Caution should therefore be taken comparing data trends that have not been normalised.

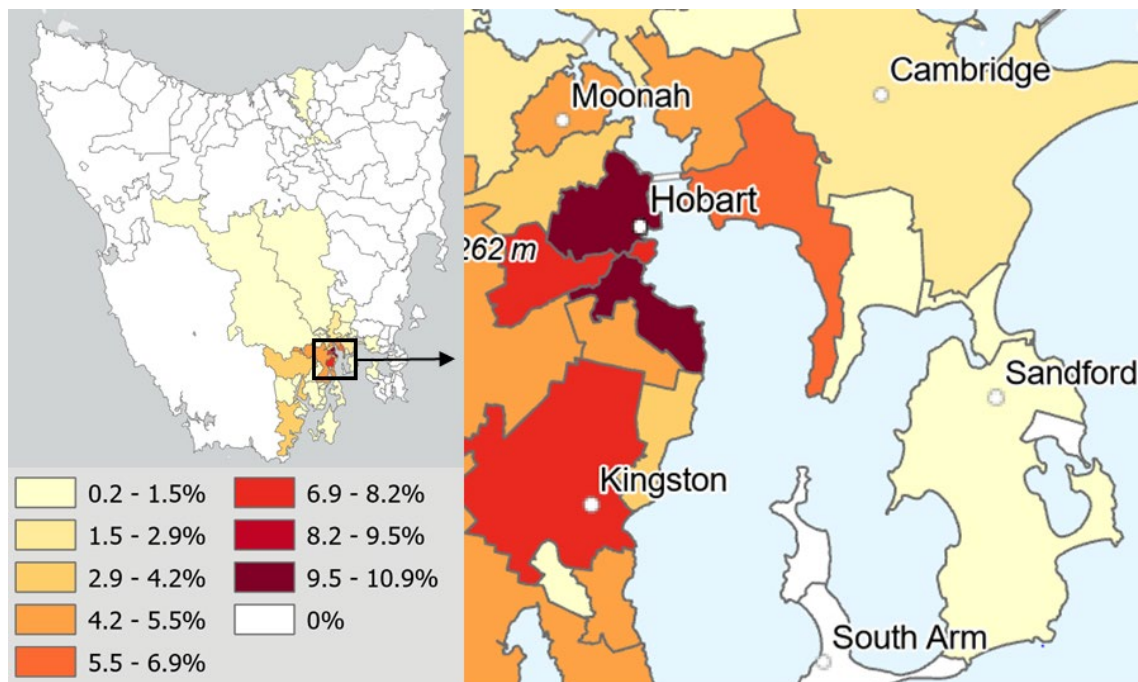


Figure 3.19: Residential Origin by Postcode 2021 – staff working at Sandy Bay campus

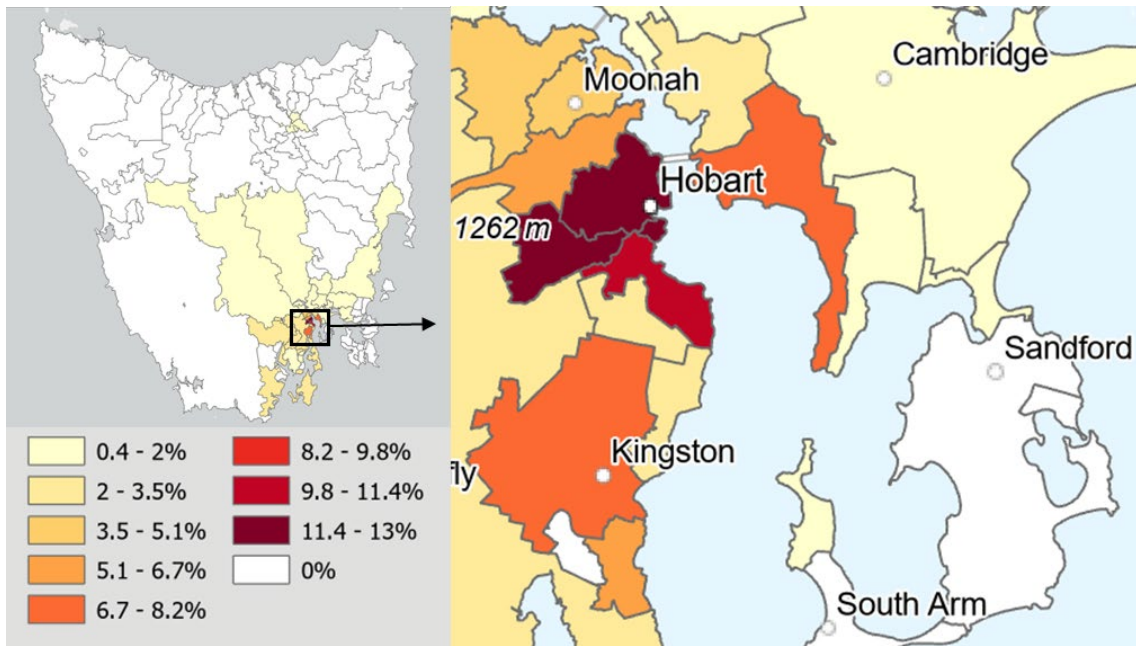


Figure 3.20: Residential Origin Postcode 2021 – staff working at Hobart CBD facilities

**Northern and North Western Campuses**

In the North there has been somewhat of a recovery in 2021 from the dip in the use of sustainable transport modes experienced in 2019 (Figure 3.21).

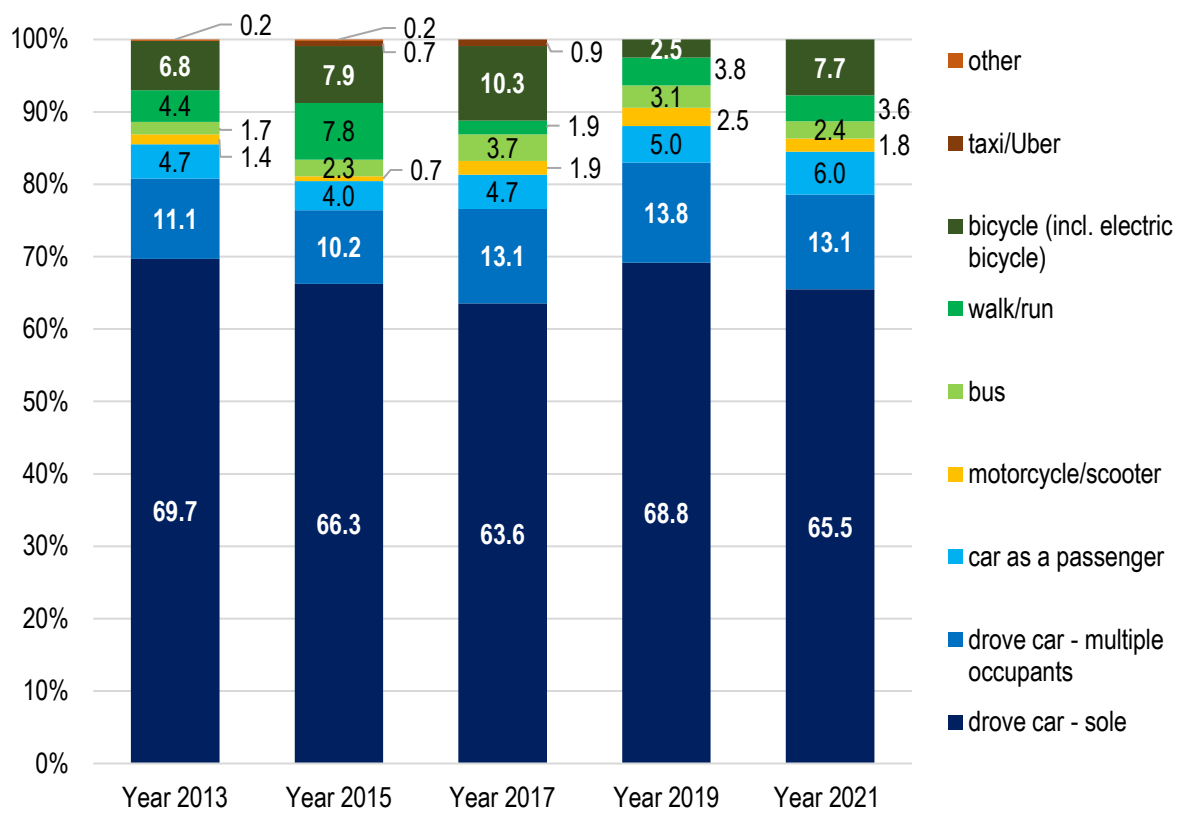


Figure 3.21: Main Mode Share per year – Staff – Tasmania North

Carpooling in the form of staff arriving at work as a car passenger or driver with multiple passengers has been steadily increasing over all surveys conducted. Bus use has been dropping since 2017, while bicycle use levels have notably increased since the previous survey. Unfortunately, survey responses from Inveresk and other Launceston facilities were too few to allow a reliable comparison with Newnham campus staff.

Among staff, the campuses with the highest single occupant car use are in Tasmania’s north (northern campuses combined). In 2019 some 85% of northern staff arrived at work by car with 66% of those as sole driver (Figure 3.21). Though Cradle Coast campuses show the highest single occupant car use in 2021 with only 12% of staff respondents reporting any sustainable mode use, sample sizes are very small and potentially unrepresentative, therefore they have not been shown here.

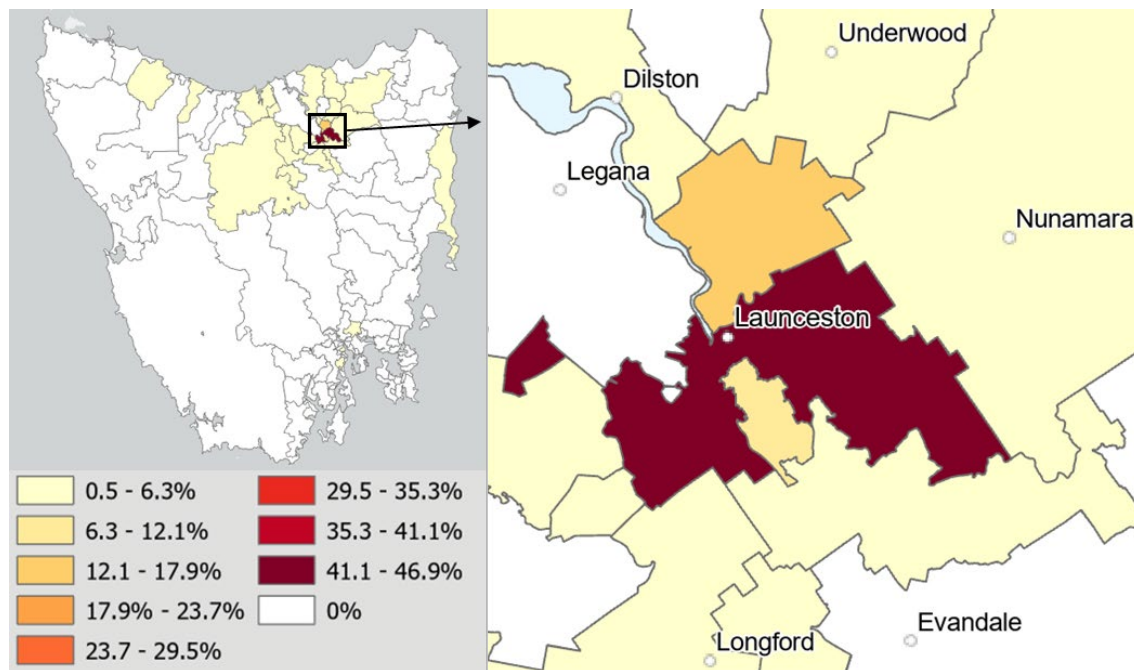


Figure 3.22: Residential Origin by Postcode 2021 – staff working at Launceston campuses (Newnham and Inveresk)

### 3.1.4. Working or studying from home or remotely (virtual transport)

Working from home reduces the physical need to travel to work and reduces overall travel demand during peak commute periods.<sup>13</sup> Staff tended to be more likely to not be working remotely towards the middle of the week, with Friday being the day where the highest proportion of staff worked from home across all regions except the Cradle Coast where there is a strong peak in remote working observed on Tuesdays (Figure 3.23). As depicted in Figure 3.23, the share varies from region to region and by weekday. In the north (all combined locations) the average staff daily work from home share was 21% in

<sup>13</sup> While tending to reduce travel demand in peak commuter periods, working from home may increase short local trips in the neighbourhood of the worker, which can have a negative and/or positive impact on that place.



2021 up from 7% in 2019. In the south (all combined locations) the average was 17% in 2021, up from 7% in 2019 (Table 3.1).

On average, some 18% of staff respondents reported working from home, or from somewhere else remote from the University, compared to 9% in 2019 (Table 3.1)<sup>14</sup>. The percentage of students studying from home has always been higher than staff but has now more than doubled compared to the previous survey (24% in 2019 and 55% in 2021), the highest increase being for students based in northern campuses. The large increase for both staff and students is likely attributable to the COVID-19 pandemic causing a shift to facilitate more people working or studying remotely, although a steady increase in staff working from home has been observed since 2013. This is not surprising given information and communication technology improvements that facilitate this mode of working.

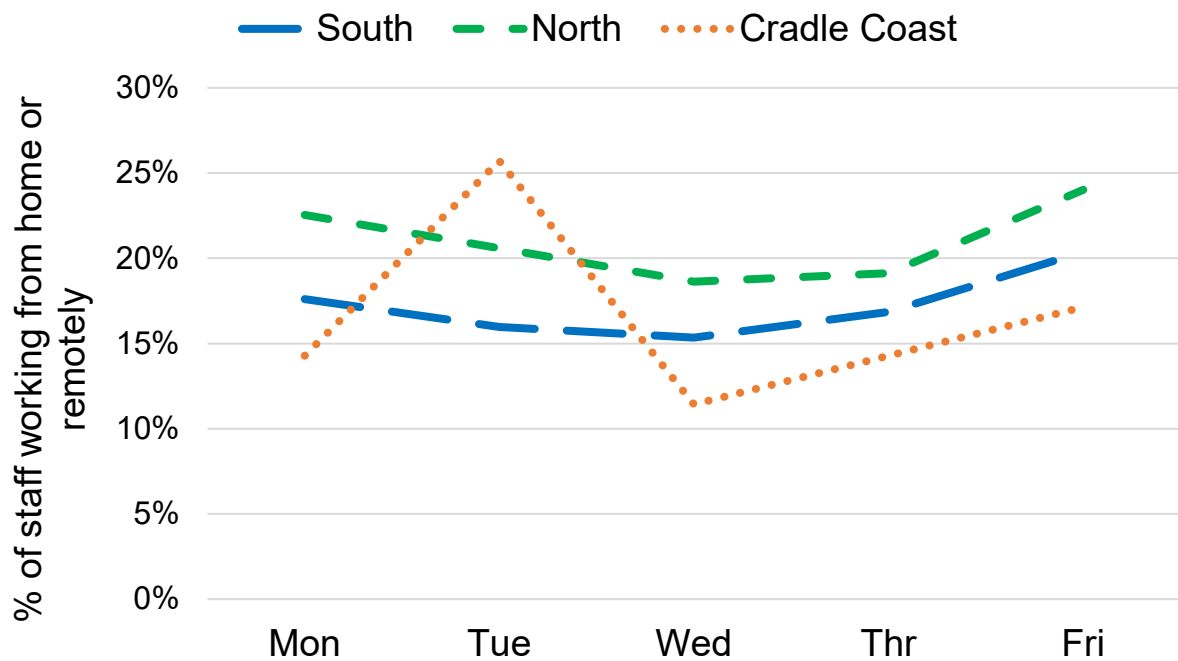


Figure 3.23: Proportion of staff working from home by weekday and region (2021)

Table 3.1: Proportion of staff working from home (or remotely) – Monday to Friday average

	Student survey				Staff survey			
	South	North	Cradle Coast	All UTAS	South	North	Cradle Coast	All UTAS
<b>2013</b>					2.0%	2.2%	5.2%	
<b>2015</b>					3.1%	3.4%		
<b>2017</b>					6.1%	8.2%	4.4%	7.3%
<b>2019</b>	22.3%	26.5%	38.3%	24.0%	7.0%	7.1%	9.7%	9.2%
<b>2021</b>	53.7%	59.6%	55.7%	55.4%	17.2%	21.0%	16.6%	18.1%

<sup>14</sup> Some staff may also be working remotely while on work business.



Note: In the 2013 and 2015 TBS, 'worked from home' was offered as a mode choice for the journey to/from work each day of the week and so was reported as a transport mode category. In subsequent surveys, respondents were asked if they: attended a university facility, worked from home/remotely, or did not work, before asking what transport mode they used to get to/from a university facility. The 'worked from home' share is calculated similarly as a share of total workers for each day for all years, despite the question adaptation from 2017.

## 3.2. Inter-campus travel

Both student and staff surveys asked about inter-campus trips, that is trips made between UTAS campuses or facilities rather than other places. Such travel does not include air or sea travel.

### 3.2.1. Student inter-campus travel

The incidence of student inter-campus travel is down by 6% since 2019, a decrease of two inter-campus trips per week for every 100 students. Some 66% of student inter-campus trips in 2021 were made within the southern region, compared to 18% within northern Tasmania and the Cradle Coast combined. Just over 5% of all inter-campus trips were inter-regional trips, the vast majority of these between Hobart and Launceston (although a high proportion of trips were between South campuses and unidentified locations).

Table 3.2: Main mode of transport for most prominent inter-campus trips (and return)

	MSP – Sandy Bay		Hobart CBD – Sandy Bay		Inveresk – Newnham	
	2019	2021	2019	2021	2019	2021
Private car – sole occupant	7%	36%	16%	16%	39%	33%
Private car – multi occupants	15%	4%	7%	11%	10%	17%
Motorcycle/scooter	2%	-	1%	-	-	-
Bus	55%	54%	45%	54%	45%	33%
Walk	11%	7%	22%	25%	-	10%
Bicycle	9%	-	9%	7%	3%	-
Taxi/Uber	-	-	-	-	-	-
Mode not specified	1%	-	1%	-	2%	7%

Table 3.2 shows the main mode of transport taken for the most prominent intra-regional trips:

- between the Hobart Medical Science Precinct (MSP) and the Sandy Bay campus – 10% of all student inter-campus trips;
- between the Sandy Bay campus and all Hobart CBD facilities – 46% of all student inter-campus trips; and

- between Inveresk and Newnham campuses – 10% of all student inter-campus trips.

For trips between the Hobart CBD and Sandy Bay campus, an increase in bus and walk modes was observed. In Launceston bus use is down for trips between Inveresk and Newnham though active modes are up. Importantly, there has been an increase in car use as sole occupants between MSP and Sandy Bay, but not for other trips.

The vast majority of inter-campus inter-regional trips reported by students in 2021 were between Hobart and unspecified locations (66%), with the remainder being movements between Hobart and Launceston and Launceston and Burnie. Some 44% of trips were made by carpooling, 25% by bus (coach service) and the remainder did not specify transport mode. Importantly, none of the respondents reported using a car as single occupant for inter-regional trips.

### 3.2.2. Staff business travel

In 2021, some 15% of staff reported travelling for work purposes, including inter-campus trips, in the previous week. This is the lowest proportion of staff reporting traveling for work since 2015. The sudden drop is likely related to the COVID-19 pandemic.

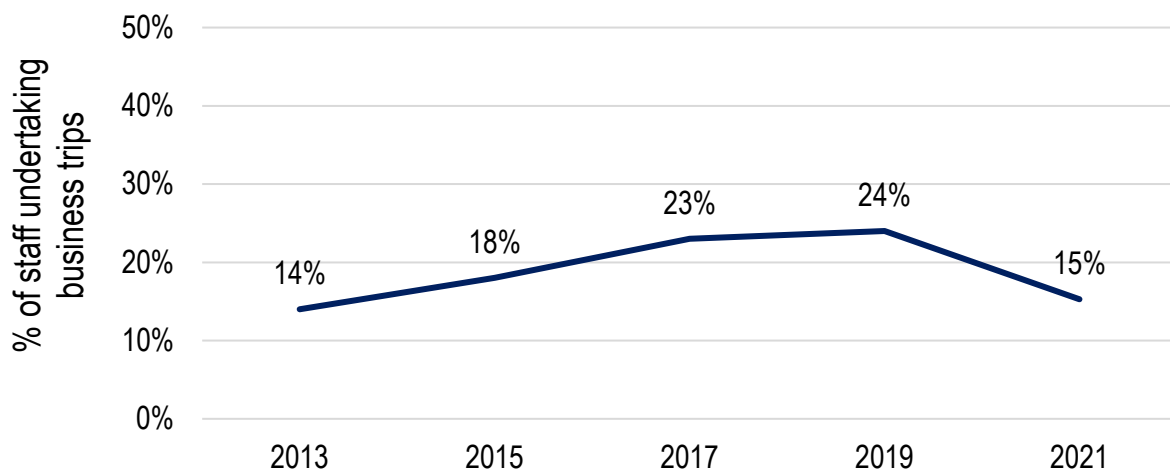


Figure 3.24: Proportion of staff undertaking inter-campus trips in previous week

Figure 3.25 highlights the change in the proportion of staff using university provided physical meeting-replacement ICT at least weekly, specifically telephone or PC-based teleconferencing/videoconferencing and university videoconference venues that allow groups of people to meet virtually.

Trends prior to 2021 indicate that while ICT use has increased, it is not necessarily replacing the need to travel for face-to-face meetings. However, it may have reduced the need to travel for longer inter-regional trips (e.g., between Hobart and Burnie or Launceston and Burnie) which have reduced in number and share.

In 2021, the proportion of staff making frequent phone and video calls increased to 92%. This was in line with the trend observed in previous years, but with a larger growth than previously experienced (Figure 3.25). This was paired with a decrease in the use of video

conferencing facilities and inter-campus trips. These observations are consistent with what would be expected from the impacts of COVID-19 increasing the need for people to work from home and socially distance from one another, resulting in room capacity restrictions. (Figure 3.25).<sup>15</sup> Whether there will be a reversion to this trend in a post COVID-19 environment is unclear.

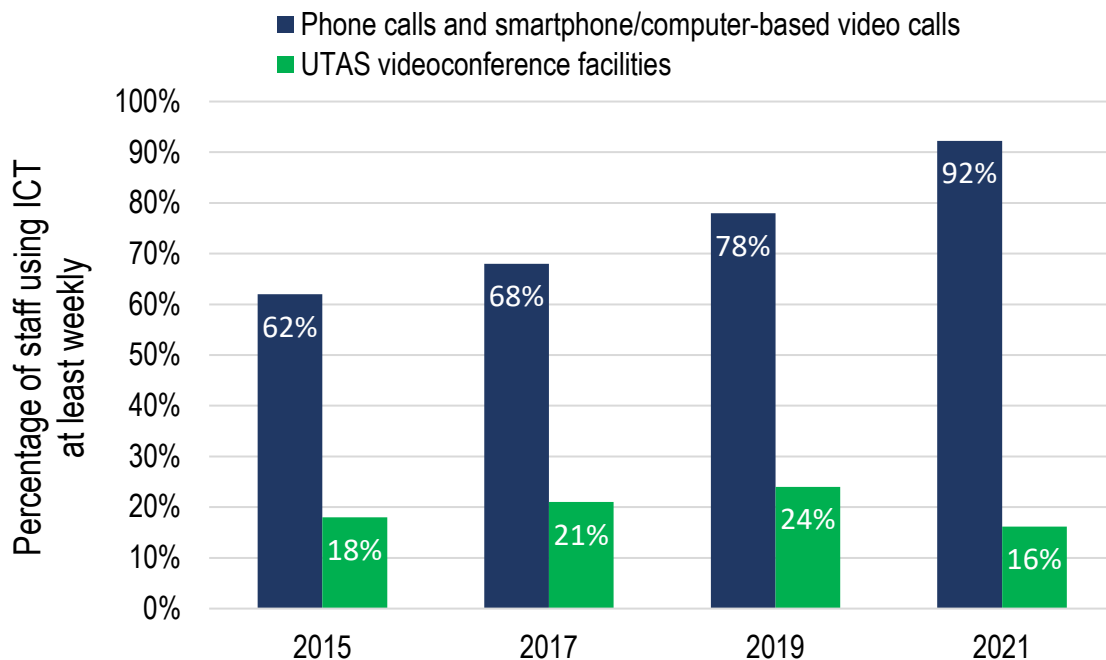


Figure 3.25: Proportion of staff using UTAS teleconferencing or videoconferencing ICT at least weekly

### **Type and mode of land-based work trips**

Of all land-based work trips made in Tasmania, 42% were associated with inter-campus travel (between UTAS campuses or facilities) in 2021, an increase from 30% in 2019.

Around 24% of intercampus trips occurred between Sandy Bay and the Hobart CBD. The majority (28%) of inter-campus trips occurred within Tasmania's southern region (e.g., between Hobart CBD facilities or between IMAS-Salamanca and IMAS-Taroona). Some 27% of all inter-campus trips involved movements in the north, while 10% of inter-campus trips were longer inter-regional movements, with the majority of these being movements between Hobart and Launceston campuses and facilities (Figure 3.26).

<sup>15</sup> The survey asked staff how frequently they had used ICT over the previous year. Results show that as the quality of ICT has improved and its accessibility enhanced, there has been a notable increase in regular use. An increasing number of staff are also using other personal ICT and smart-phone communication apps to carry out day-to-day business communications such as WhatsApp, Facetime and Google Hangouts.

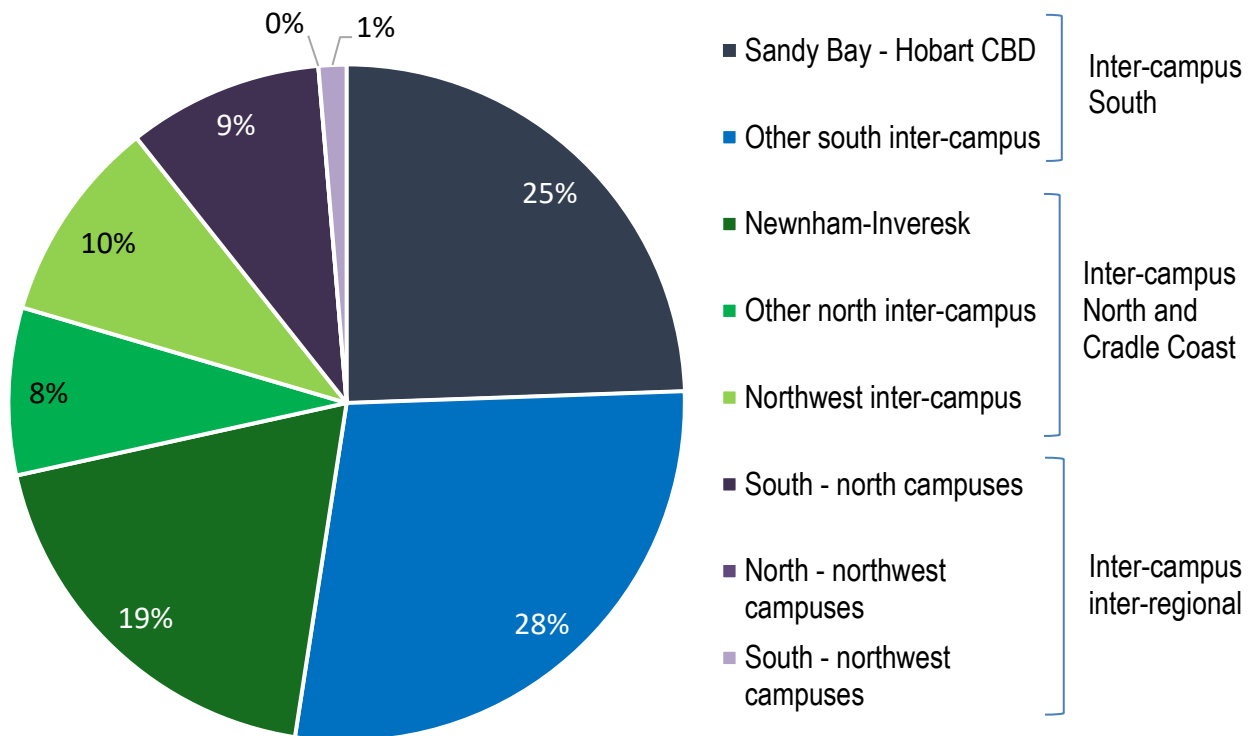


Figure 3.26: Tasmanian land-based inter-campus work trips – by trip type (2021)

Table 3.3 shows the primary mode of transport used for the most common inter-campus trips made. Key features include:

- Sandy Bay - Hobart CBD inter-campus trips (and return)
  - 23% of 2021 trips for this journey type were made using more sustainable modes (bus, walk, cycle), and 13% by active modes (walk or cycle). Walking decreased by more than half from 2019, while other sustainable modes remained at the same level.
  - Use of private and university fleet cars increased for sole and multi occupants, except for multiple occupant private cars which experienced a small decrease.
  - Fewer staff took the bus or used active modes of transport in 2021 than in 2019.
  - Taxi use has dropped to less than a third of the rate observed in 2019.
- Inveresk - Newnham inter-campus trips (and return)
  - While some 29% of trips were taken by taxi in 2019, no one reported taking a taxi for this journey type in 2021.
  - Sole occupant in private cars or university fleet cars was the preferred transport mode (47% and 51% respectively). This is an increase from 2019, when 71% of respondents reported travelling in a sole occupant private car, although there were no reports of university fleet vehicle use.
  - Use of multi occupant fleet increased from 0% in 2019 to 2% in 2021.
- Hobart - Launceston inter-campus inter-regional trips
  - The use of private vehicles increased from 21% to 65% of journeys, paired with a decrease in the use of fleet vehicles from 78% to 35%.

Not shown in Table 3.3 are shorter trips in and around the Hobart CBD (e.g., MSP to IMAS-Salamanca), or Sandy Bay. The vast majority of these were reported as walk trips (59%), with the recently offered Flexi-car car-share transport mode being second (24%).

Table 3.3: Main mode of transport for select Tasmanian inter-campus trips (and return).

	MSP – Sandy Bay		IMAS-Salamanca – Sandy Bay		Hobart CBD – Sandy Bay		Inveresk - Newnham		Hobart - Launceston	
	2019	2021	2019	2021	2019	2021	2019	2021	2019	2021
Private car – sole occupant	20%	55%	31%	36%	35%	51%	71%	47%	16%	50%
Private car – multi occupants	8%	7%	-	-	8%	4%	-	-	5%	15%
Uni fleet car – sole occupant	1.5%	-	-	-	0.5%	4%	-	51%	46%	25%
Uni fleet car – multi occupant	1.5%	-	-	-	1%	7%	-	2%	32%	-
Uni eco-fleet car – sole occupant	-	-	-	-	1%	-	-	-	-	10%
Uni eco-fleet car – multi occupant	-	-	-	-	0.5%	-	-	-	-	-
Motorcycle/ scooter	-	-	-	-	2%	-	-	-	-	-
Bus	22%	19%	12.5%	-	11%	11%	-	-	2%	-
Walk	3%	-	19%	27%	13%	6%	-	-	n.a	n.a
Bicycle	9%	-	12.5%	36%	6%	7%	-	-	n.a	n.a
Taxi/Uber	35%	13%	25%	-	22%	7%	29%	-	n.a	n.a

Note: there were only 11 responses for IMAS-Salamanca to Sandy Bay and return, so data should be interpreted with caution

Overall, three main observations can be made about the change in staff work trips including inter-campus trips since 2019:

- A decrease in the number and share of land-based work trips that are not associated with intercampus trips.
- A reduction in UTAS fleet vehicles for inter-city trips.
- A decrease in sustainable and active modes of transport between all campuses.

### 3.3. Bus use

As shown in section 3.1, the most striking and consistent increase in mode share for commuting until the COVID-19 pandemic was public transport (bus in Tasmania and public transport more generally in Sydney), particularly among students. The 2021 TBS survey asked staff and students about how COVID-19 impacted their use of public transport. About 24% of staff and 36% of student respondents who were using public transport before the pandemic reported lower or no use of public transport in 2021 because of COVID-19 (Figure 3.27).

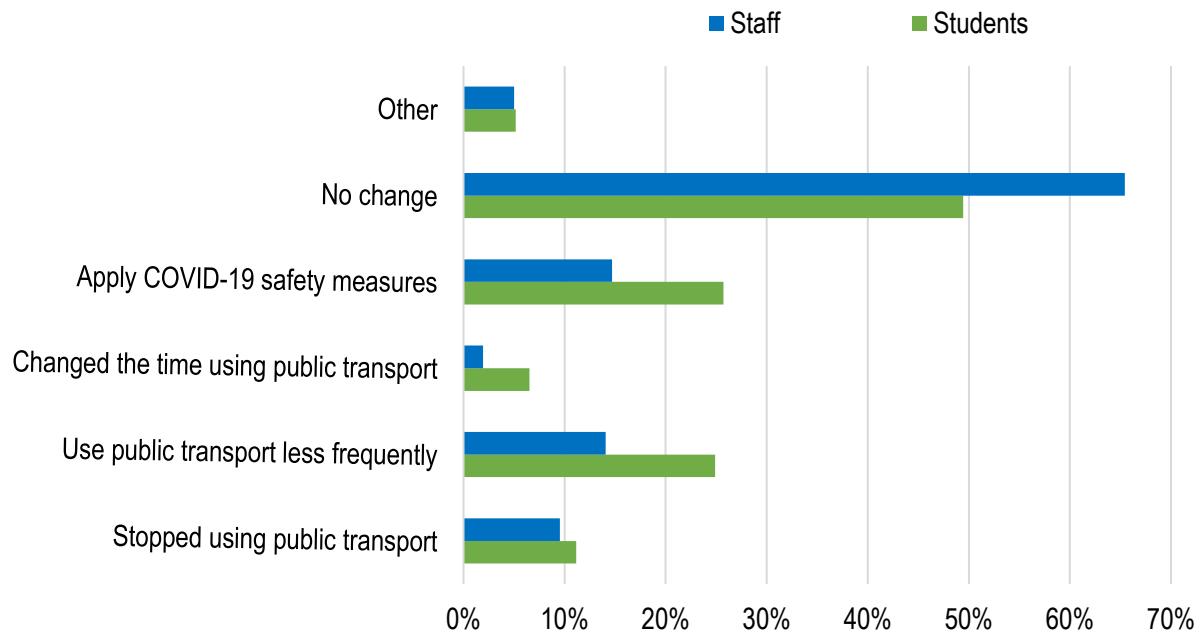


Figure 3.27. Impact of COVID-19 on public transport users

The survey also sought feedback on the use of public transport service information and auto-tap ticketing cards. This information helps us understand the level of awareness of, and engagement with, local public transport services.

#### 3.3.1. Greencard and Opal card ownership

The proportion of university staff and students in Tasmania and Sydney with auto-tap public transport ticketing cards has continued to increase since 2013 and is at its highest for staff in 2021. For staff based in Tasmania, 50% own Greencards. This compares to an ownership rate of only 28% in 2013. Greencard ownership is higher in southern Tasmania (55%) than in northern Tasmania (34%). However, the percentage of Tasmanian staff having regular credit on their cards has decreased from 81% in 2019 to 72% in 2021, likely a reflection of the aforementioned changes due to COVID-19.

In Sydney 92% of staff respondents reported owning the equivalent Opal card, with 91% of these having regular credit on it.

In 2021, 63% of students (including online students) had a Greencard or equivalent.

### 3.3.2. Use of online public transport information and apps

The survey also asked respondents how frequently they accessed public transport websites or apps such as the *Metro Tasmania App* (Tasmania) or *Opal Travel App* (NSW). Such tools include trip planners, timetable information, service updates and fare information. As shown in Figure 3.28, Sydney students reported the highest degree of access to such information. In Tasmania, the highest levels of access were in the south (Hobart), where some 44% of staff and 61% of students had accessed such information at least a few times a year, and 12% of staff and 20% of students weekly or more.

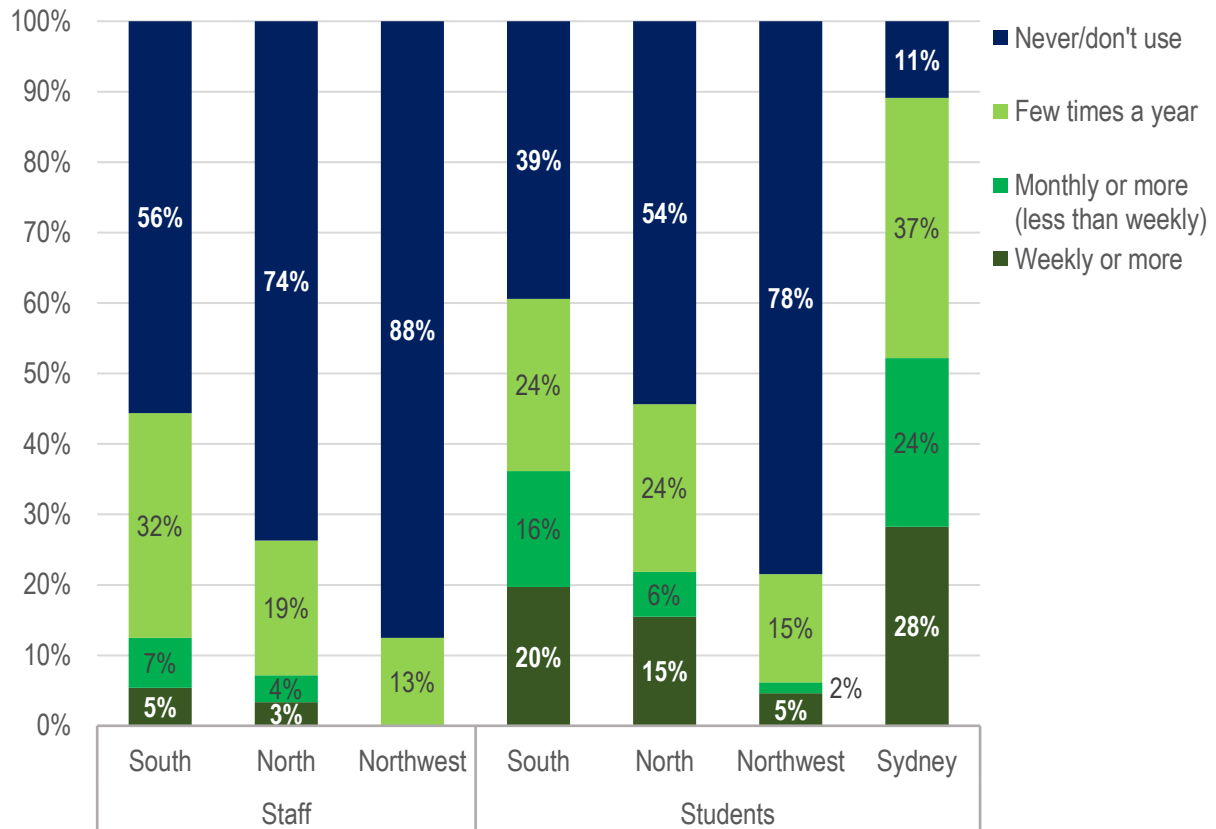


Figure 3.28: Use of a public transport information website or app (including trip planner) – all students and staff 2021

The proportion of staff and students accessing such information at least a few times a year has increased since 2019 for students but has decreased for staff in all regions. This is interesting considering that there was a higher proportion of students who reported lower or no use of public transport in 2021 because of COVID-19 (Figure 3.27)

### 3.3.3. Bus use incentives

In the 2019 and 2021 surveys, staff were asked: i) how likely they would be to take up an offer to salary-sacrifice annual bus fare expenses for the journey to and from work at UTAS; and ii) what the likelihood was of them using the bus more to get to or from work at UTAS if they were able to salary sacrifice the annual cost of their bus fares.

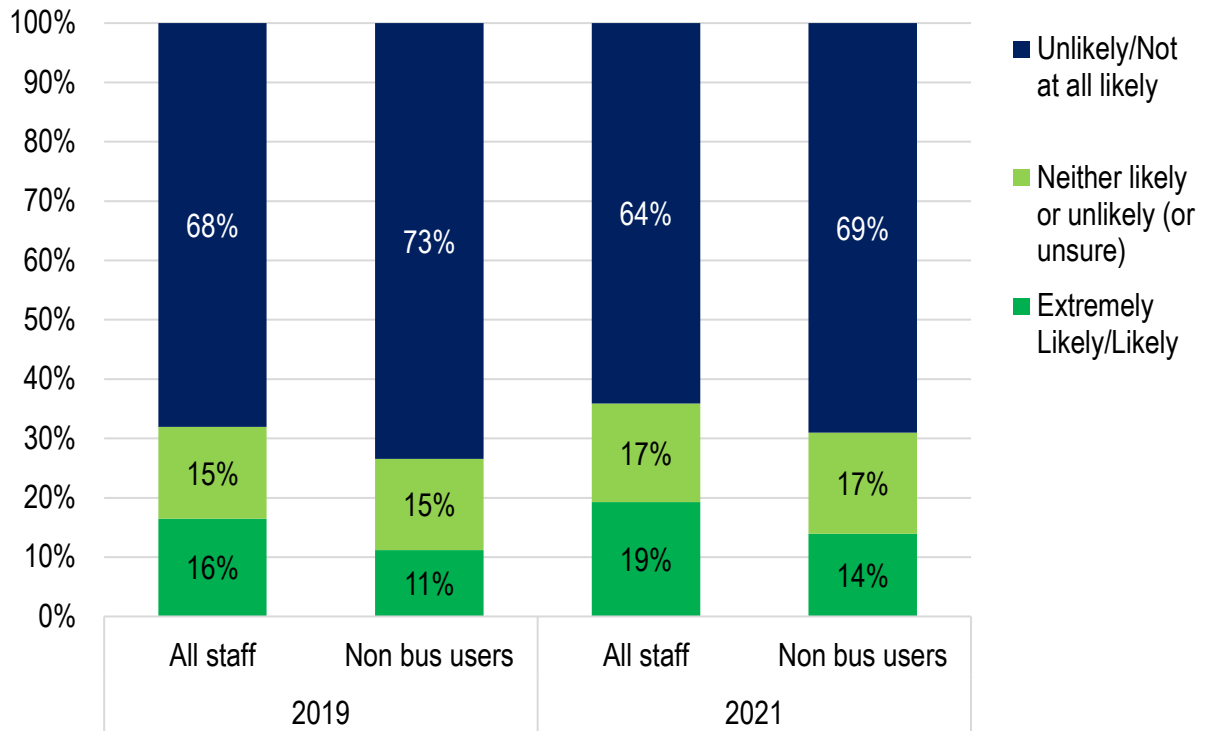


Figure 3.29: How likely would you be to take up an offer to salary-sacrifice annual bus fare expenses for the journey to and from work at UTAS?

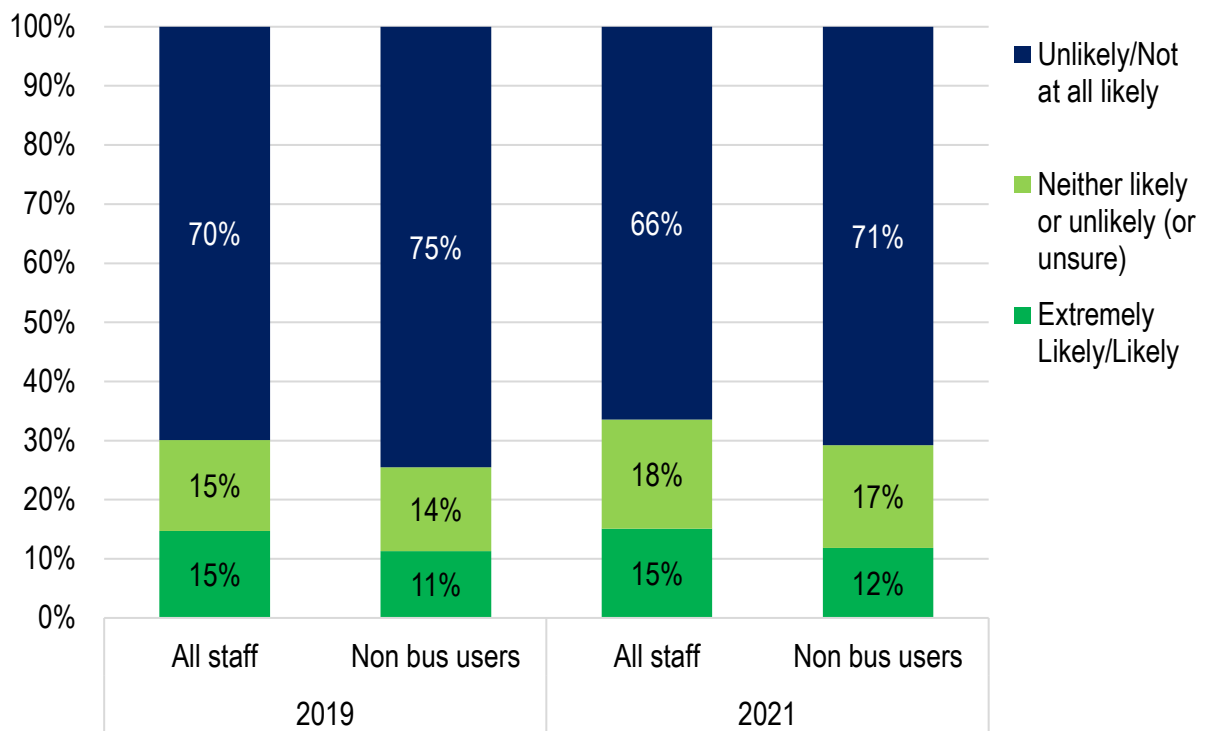


Figure 3.30: What is the likelihood of you using the bus more to get to or from work at UTAS if you were able to salary sacrifice the annual cost of your bus fares?



The number of staff who responded that they would be likely to take up a salary sacrifice offer has increased from 16% in 2019 to 19% in 2021. The increase was similar amongst staff that do not use buses, from 11% in 2019 to 14% in 2021. The proportion of staff that responded as unsure rather than unlikely also increased (Figure 3.29).

The proportion of all staff who indicated they were more likely to use buses to get to and from UTAS if they were able to salary sacrifice the annual cost of their bus fares remained at 15% from 2019 to 2021. However, the amount of non-bus using staff who responded that they would be likely to use buses more slightly increased from 11% to 12% (Figure 3.30).

While such figures appear low, especially for non-bus users, even a modest shift away from single occupant car use can remove a considerable number of cars from our roads and car parks.

### **3.3.4. Bus service challenges**

While we have seen an increase in bus use for students and staff over time, and the introduction of through bus services to the Sandy Bay and Newnham campuses in recent years (501 from Glenorchy and 601 from Howrah in the south, and 110 from Kings Meadows in the north), there remains significant variation in bus service level across the Greater Hobart and Greater Launceston regions. The survey included a question about the use of bus services that did not require a transfer in the city to get to Sandy Bay or Newnham campuses.<sup>16</sup>

Overall, the survey tells us that 81% of student bus users took one bus. While this may mean that some are mixing modes (such as travelling as a car passenger to access a direct bus route), the share suggests a good level of access overall.

Inner suburbs and middle suburbs near high frequency corridors tend to have the best levels of direct service to the Sandy Bay campus. Outer suburbs to the north, east and south, and middle suburbs away from high frequency corridors, frequently require transfer in the city and at least two buses to access the Sandy Bay campus. Table 3.4 shows the availability of direct bus services to Sandy Bay and the likely number of buses required from various Hobart suburbs. It demonstrates there is a need to focus attention on either bus service improvement in areas where multiple buses might be required or bus route access, potentially through park-and-ride facilitating access to higher frequency corridors and most direct services.

For students attending campuses in the north there are likely to be some similar issues, particularly access to Launceston's Newnham campus from outer growth suburbs. Direct services to the Newnham campus are available from Kings Meadows and intermediate suburbs connecting to Newnham, and from Launceston northern suburbs. Other suburbs require more than one bus and transfer at the Launceston CBD.

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<sup>16</sup> *If you travelled on a Metro Tasmania bus to the Sandy Bay or Newnham campus last week and travelled through the city, did you use a bus service that did not require a bus transfer in the city (e.g., routes 501, 601 for Hobart and 110 for Launceston)?*

It is anticipated, with a shift of main campus activity from Sandy Bay to the Hobart CBD and from Newnham to Inveresk over the next decade, that the issue of through servicing will become less of a problem while improved services in service-deficient suburbs will need to be the focus.

Table 3.4: Direct bus services to Sandy Bay and the need for multiple buses by suburb

	Direct bus to Sandy Bay (limited by location and time)	Number of buses required (multiple selected based on availability 7am – 6pm)		
		1	2	≥ 3
<b>Metro fringe (&gt; 25 km)</b>				
Brighton			✓	✓
Dodges Ferry			✓	
<b>Outer (15-25 km)</b>				
Austins Ferry			✓	✓
Chigwell			✓	✓
Rosetta			✓	✓
Old Beach			✓	✓
Margate			✓	
Howrah	601	✓	✓	
<b>Middle (5-15 km)</b>				
Glenorchy	501	✓	✓	
Goodwood	501	✓	✓	
New Town	501	✓	✓	
Blackmans Bay	408	✓*	✓	
Kingston	429**	✓	✓	
Lindisfarne			✓	✓
Lenah Valley			✓	
<b>Inner (≤ 5 km)</b>				
West Hobart	501	✓	✓	
South Hobart	401 / 501 / 601	✓	✓	

\* Includes a 20 min walk

\*\* Via Tarooma

### 3.4. Bicycle use

The University has an interest in encouraging cycling. This is a relatively inexpensive and healthy way to get around, particularly when the journey is considered a little too far to walk. Travelling to work or study by bicycle appeals to some more than others, with personal factors (health and enjoyment related) identified as significant motivators for urban cycling. Factors constraining cycling are largely reported in the literature as being environmental concerns related to traffic conditions, motorist aggression and safety, with

women reporting more constraints than men<sup>17</sup>. In Tasmania, hilly topography and seasonal change (i.e., cold or wet weather, and dark evenings) are frequently referred to as limiting cycling take-up. The wider body of literature around shifting behaviours also points to an array of other social, personal, and external constraints (including the influence of social norms, personal habits and time constraints, and cycling competency and confidence issues) that are perhaps not commonly considered in the development of strategies to grow cycling<sup>18</sup>.

In this survey, we measure bicycle mode share for the journey to work or study and also ask how cyclists are using university bicycle infrastructure and information.

### 3.4.1. Change over time and gender

Change in the share of bicycle as the main mode for the journey to/from work or study is inconsistent across campuses and depends on whether you consider student or staff travel behaviours. Figure 3.31 and Figure 3.32 show that cycling is generally higher mode share for staff than students. Interestingly, bicycle mode share has decreased for students in northern campuses but has increased for staff in the same area and for Hobart CBD students for the same period. The relatively limited change in bicycle mode share over time points to the limits of urban cycling infrastructure and cycling road safety conditions.

An interesting feature of bicycle mode share change revolves around the gender breakdown of cyclists. Table 3.5 depicts the proportions and ratios of male to female cyclists over the period 2015-2021 for the University's largest campuses and overall<sup>19</sup>. In the 2015 TBS report, we discussed the male gender bias in cycling nationally and how this was also evident across the university community<sup>20</sup>. The 2015 TBS showed that university female staff and students cycled less than male staff and students, with the male to female cycle ratio across the University being 3:1 in 2015<sup>21</sup>. Overall, in 2021 the University has a male to female cycling ratio of 3:2 (or 1.5 male riders for every female ride), with an improvement (more female riders) observed for Sandy Bay, while the proportion of female riders decreased in northern campuses when compared to 2019.

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<sup>17</sup> For example, see Heesch, K.C., Sahlqvist, S., Garrard, J. 2012. Gender differences in recreational and transport cycling. *International Journal of Behavioral Nutrition and Physical Activity*, 9(106). DOI: 10.1186/1479-5868-9-106.

<sup>18</sup> For example, see Shove, E. 2010. Beyond the ABC: Climate Change Policy and Theories of Social Change. *Environment and Planning A*, 42(6): 1273-1285.

Cupples, J., Ridley, E. 2008. Towards a Heterogeneous Environmental Responsibility: Sustainability and Cycling Fundamentalism. *Area* 40(2): 254-264.

<sup>19</sup> Data has been standardised according to the university population and to adjust for the female gender bias in survey response.

<sup>20</sup> Lyth, A., Archer, A., & Peterson, C. 2015. University of Tasmania Travel Behaviour Survey: Summary of findings, University of Tasmania, Hobart.

<sup>21</sup> In Queensland, Heesch et al. (2012) found that only 24% of transport cyclists are women, while in Sydney only 17% of bicycle commuting trips are made by women (a male to female ratio of nearly 6:1) with the ratio in Melbourne 4:1.

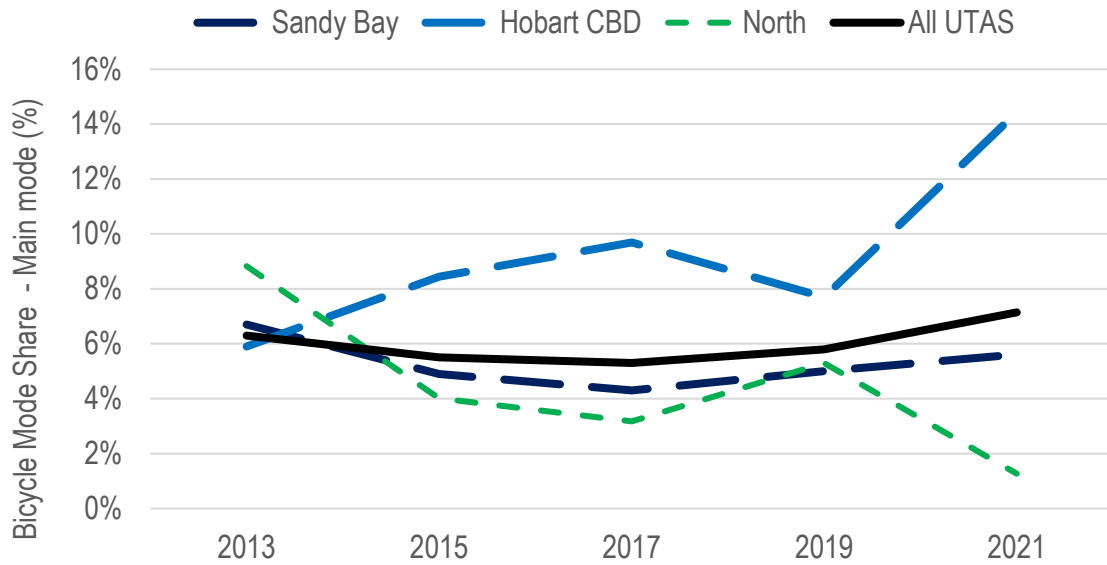


Figure 3.31: Bicycle as main mode – students – change over time

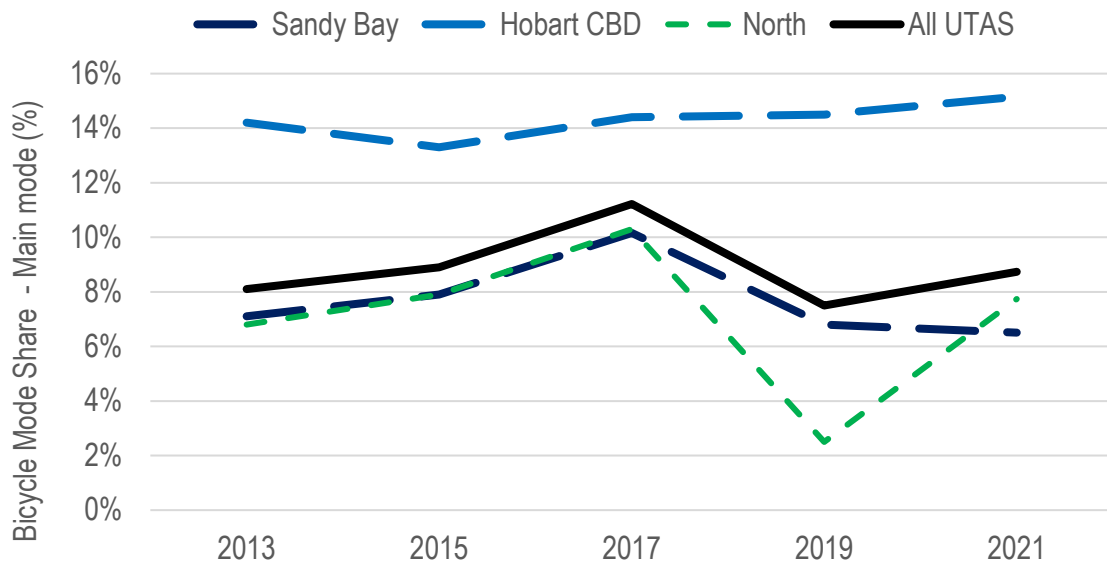


Figure 3.32: Bicycle as main mode – staff – change over time

Table 3.5: Ratios of male to female bicycle riders. Note: male to female ratios have been rounded

	Male:Female ratio			
	2015	2017	2019	2021
<b>Sandy Bay</b>	2:1	2:1	2:1	3:2
<b>Hobart CBD</b>	4:1	1:1	1:1	1:1
<b>Northern campuses</b>	10:1	2:1	1:1	3:2
<b>All UTAS</b>	3:1	2:1	3:2	3:2

### 3.4.2. Use of bicycle infrastructure

The TBS asked participants to give feedback on the bicycle infrastructure and information they used if they had ridden a bicycle to the University on any day in the previous week, and also asked whether anyone had ridden an electric bicycle or scooter.<sup>22</sup> All new UTAS facilities or major refurbishments since 2011 have included significant provision for cyclists and other active transport users. End-of-trip (EoT) facilities include electric bike (e-bike) charging stations, maintenance stations, water stations, showers, and lockers.

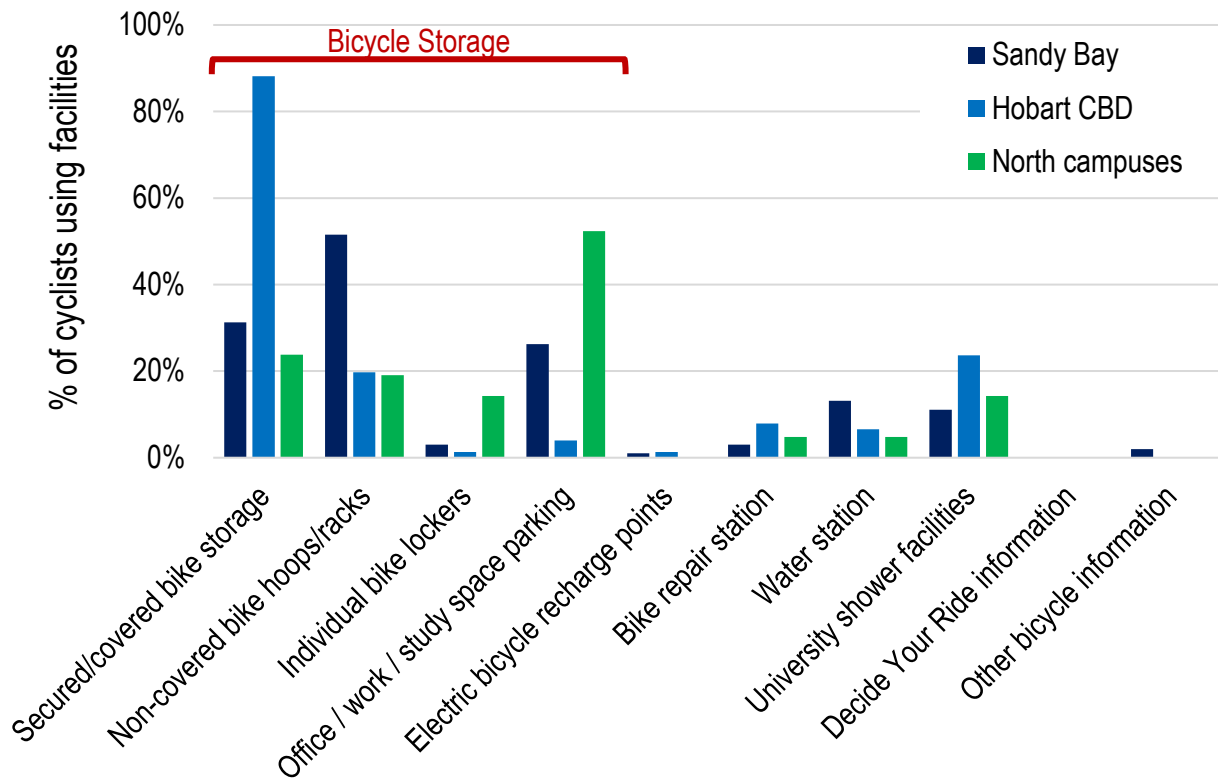


Figure 3.33: University facilities or information used by all bicycle riders (2021)

Figure 3.33 outlines the facilities and information both student and staff bicycle riders reported using. These range from different types of bicycle storage to bicycle maintenance and information.<sup>23</sup> The Hobart CBD shows the highest levels of usage of secured or covered bicycle storage, reflecting the high-quality end-of-trip infrastructure that has been installed at several facilities there. There is barely any storing of bicycles in workspaces/offices in Hobart CBD facilities, whereas this is still an issue at northern campuses and Sandy Bay. Water stations, shower facilities, and bike repair facilities were moderately used with highest levels of use in locations where such facilities were more

<sup>22</sup> Electric scooters are plug-in electric vehicles with two or three wheels powered by electricity. Electric scooters (as distinct from motorcycles) have a step-through frame.

<sup>23</sup> The [Decide Your Ride videos](#) are a series of online cycling videos for those interested but unsure about cycling to and between Sandy Bay and Hobart CBD campuses, and Newnham and Inveresk campuses in Launceston.

prevalent. The survey did not seek feedback on opinions surrounding the quality of this infrastructure and information, although other smaller ad hoc user opinion surveys are undertaken from time to time.

### **3.4.3. Electric bicycles**

E-bike use has shown growth since 2015, with the share of e-bike users increasing to 18% in 2021 for staff and students combined. E-bike use among staff made up 19% of all staff cyclists. All but one staff and all but two student users of e-bikes were in the south.

The potential to grow the electric vehicle market, including e-bike use, is anticipated to be significant in the next 5-10 years as electric vehicles become more prominent and economically viable<sup>24</sup>. Further, electric vehicle stakeholders have recommended financial incentives for take-up in the Australian market and measures to encourage the supply of supporting infrastructure (such as charging facilities and dedicated parking).<sup>25</sup>

The University of Tasmania has become an early Tasmanian adopter of electric vehicle fleet conversion and charging infrastructure for electric cars and e-bikes. Further attention thereby points to other stakeholders to help grow this initiative, including the improvement of bicycle route connectivity and safety, and system-wide e-vehicle infrastructure in a State that enjoys the benefit of majority renewable energy supply. In addition, the University is currently offering (from mid-2021) a salary sacrifice option for e-bikes through the University's e-bike provider.

## **3.5. Car use and parking**

### **3.5.1. Car type**

The University has been providing infrastructure for public electric vehicles charging for several years and will continue to do so while concurrently electrifying its vehicle fleet.

In 2021, staff and students who drove to the University in the week prior to the survey were asked to identify the size and power source of the vehicle they used. A similar question was asked in 2017, although the 2017 questionnaire did not separate hybrid from electric only vehicles, but grouped both categories under 'super-efficient or light car' (meaning <1.5L cars were also included in this category).

While the percentage of efficient cars remains low for both staff and students, there has been an increase in the number of electric and hybrid vehicles driven by staff members (3.5% in 2021). However, the percentage of efficient cars has slightly decreased over time for students (Figure 3.34). This could be a consequence of more infrastructure provided for staff, and economic issues for students, especially during the COVID-19 pandemic as many students were not able to find work.

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<sup>24</sup> [ClimateWorks Australia, 2017](#). The State of Electric Vehicles in Australia. Report prepared on behalf of the Electric Vehicle Council.

<sup>25</sup> Climate Works Australia, 2016. The path forward to electric vehicles in Australia: Stakeholder recommendations.

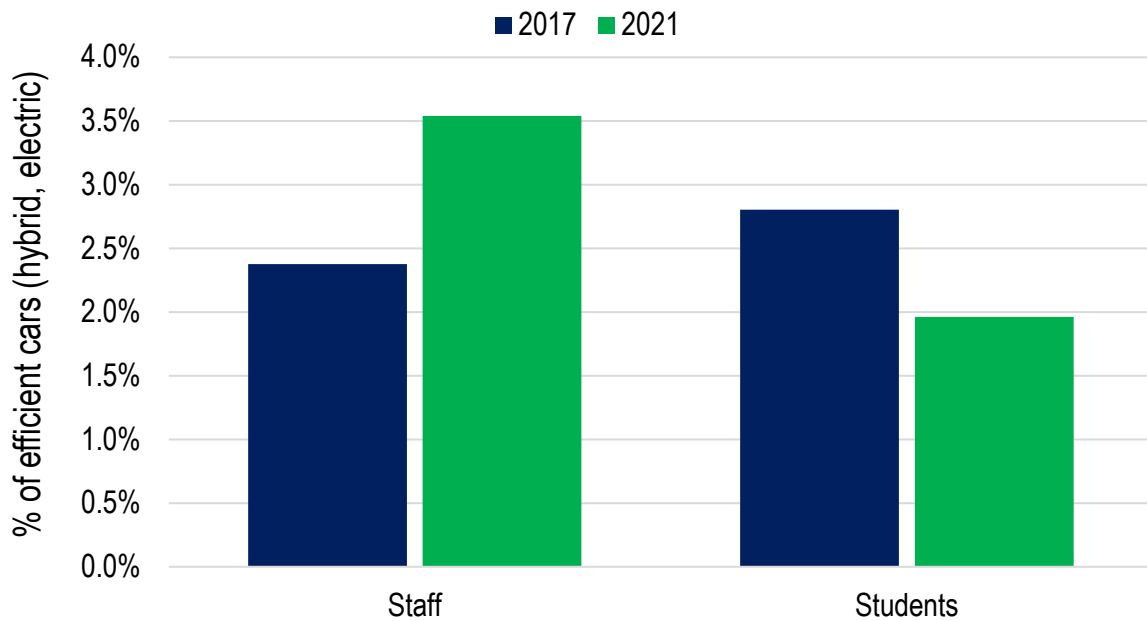


Figure 3.34. Percentage of efficient cars driven to the University in the week prior to the survey.

### 3.5.2. Car ownership and use - International students

In 2021 students were asked about whether they owned a car/motorcycle for their sole access or had regular access to a shared car. About 41% of all UTAS international student respondents stated they either owned a car (or motorcycle) for their sole use or had regular access to a shared vehicle. The proportion was slightly higher for those attending Sandy Bay campus primarily and lower for those attending Launceston campuses. The most interesting finding, however, is the use of such vehicles. For those international students based primarily at the Sandy Bay campus with regular access to a car, 65% stated that they drove to the university at least once in the week prior to the survey. This is quite different to international students primarily attending Hobart CBD facilities. Here, of the 43% of students who owned a vehicle or had regular access to one, only 48% used it to drive to the university at all in the prior week. In Launceston the share reported is 50%. The difference in car usage between Sandy Bay international students and Hobart CBD international students despite car ownership/access suggests that for many of the Hobart CBD students, their vehicles are used for trips not associated with movements to and from the university, such as weekend activities. The observation also points to the more restrictive parking environment in the Hobart CBD compared to the Sandy Bay campus, which undoubtedly influences the degree of car usage in Hobart.

These observations point to the value of a car-share membership scheme for students that allows access to a vehicle for trips where alternative modes are unrealistic. Such a scheme would reduce the need for students to seek and purchase parking and reduce the cost of maintaining their own vehicle. A car-sharing scheme is available to UTAS students in Hobart CBD and Sandy Bay since March 2021.

The relatively low degree of car usage despite vehicle ownership or access in Launceston likely reflects the very high proportion of international students living on, or very close to, campus at Newnham or Inveresk.

Table 3.6: International student car ownership/access and use

	International students who own /have regular access to a car (%)		International students who drove to the University (%)	
	2019	2021	2019	2021
<b>Sandy Bay</b>	30%	46%	81%	65%
<b>Hobart CBD</b>	32%	43%	25%	48%
<b>Launceston</b>	38%	39%	39%	50%
<b>All UTAS</b>	33%	41%	61%	57%

When comparing with the 2019 TBS survey, it is worth noticing that there has been an increase of international students who own or have regular access to a car in the south campuses, while the number of these students who drove to the University in the week before the survey has decreased for Sandy Bay based students and increased for Hobart CBD and Launceston students. This change might be related to the impact of COVID-19.

### 3.5.3. Parking

For those students and staff that drove to university campuses and facilities, we asked what type of parking they used in order to get a sense of:

- demand for parking at different campuses;
- the potential impact of parking in neighbourhoods surrounding university facilities;
- the take-up of paid and non-paid parking options.

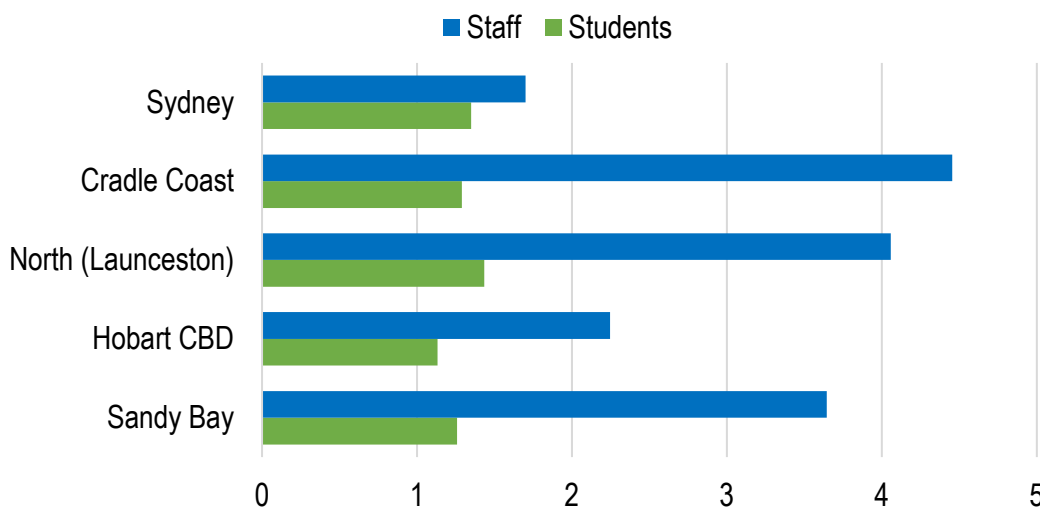


Figure 3.35: Average parking days per week by car driver



Figure 3.35 shows the average parking days per week by car driver to each campus/location. For students, the Cradle Coast and Hobart CBD have the fewest car parking events per week and Launceston the most, although there is not great variation. For staff, the Sydney and Hobart CBD facilities has the fewest parking events and Cradle Coast the most. Comparing the Hobart CBD with Sandy Bay, Sandy Bay has more than 50% more parking events per week for staff.

The proportion of parking days by parking category are presented in Figure 3.36 and Figure 3.37.

**Student parking**

For students attending the Sandy Bay campus primarily, some 583 students reported parking their vehicle at some point Monday-Sunday. Some 17% of the vehicles parked by students attending Sandy Bay in 2021 were on-campus with purchased permits or vouchers. This proportion is a reduction from 26% in 2019. Some 36% of student vehicles were reported as being parked off-campus at no charge in surrounding streets in 2021 compared to 51% in 2019. Some 43% of student vehicles were parked on-campus at no charge.<sup>26</sup>

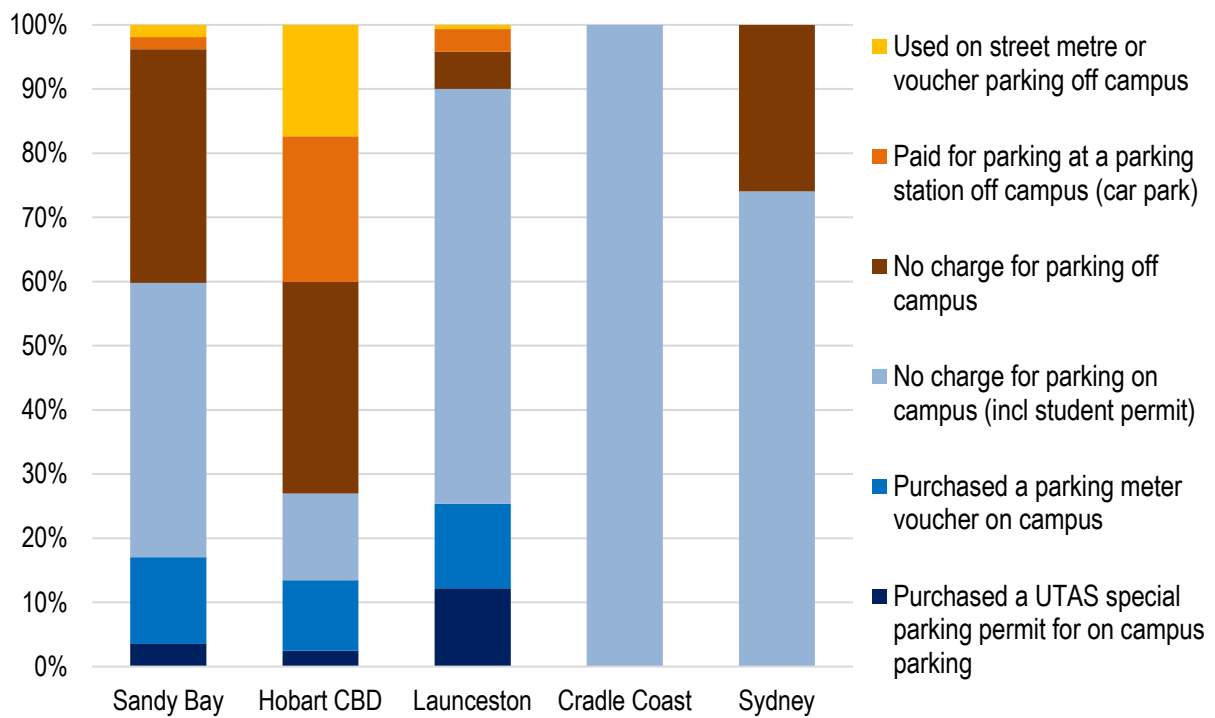


Figure 3.36: Students – % of cars parked by category Mon-Sun

For students attending the Hobart CBD primarily, some 249 students reported parking their vehicle at some point Monday-Sunday. Some 33% of students attending Hobart CBD facilities parked off-campus at no charge. This proportion is a small decrease from 2019

<sup>26</sup> The Sandy Bay Grace Street carpark and a section of College Road provides car parking free of charge providing the student has a student permit.

though the number of students attending UTAS in the Hobart CBD is lower in 2021. Such parking is likely to be on streets on the city fringe largely accessible by foot. Some 54% paid for parking in some form, this share being similar to 2019. Approximately 75% of paid parking was either obtained in a parking station or on-street parking meters, the remainder being obtained on University parking premises.

At Newnham and Inveresk campuses some 25% of students parked their vehicles on-campus with paid vouchers or permits in 2021, while 65% of students indicated that they used a student permit. As the 2019 questionnaire did not have an option for using free student permits, it is unclear whether students with a student permit picked the 'there was no charge for parking on campus' option or 'I have purchased a University of Tasmania special parking permit for on campus parking'; thus, it is difficult to compare 2019 and 2021. Only 23% of students reported free parking on campus, which seems unlikely.

On the Cradle Coast, all students parked on-campus at no charge. At Sydney facilities (Rozelle) all students reported not paying for parking, with the majority of these being on-campus (74%).

**Staff parking**

Almost half of staff who reported parking Monday-Sunday parked to attend the Sandy Bay campus (49% of all staff reported parking). Some 70% of Sandy Bay staff parking involved the use of purchased parking permits or a paid parking voucher on campus. This proportion is down from 2019. Some 24% of parking was reported as being off-campus at no charge in 2021 - the same as in 2019.

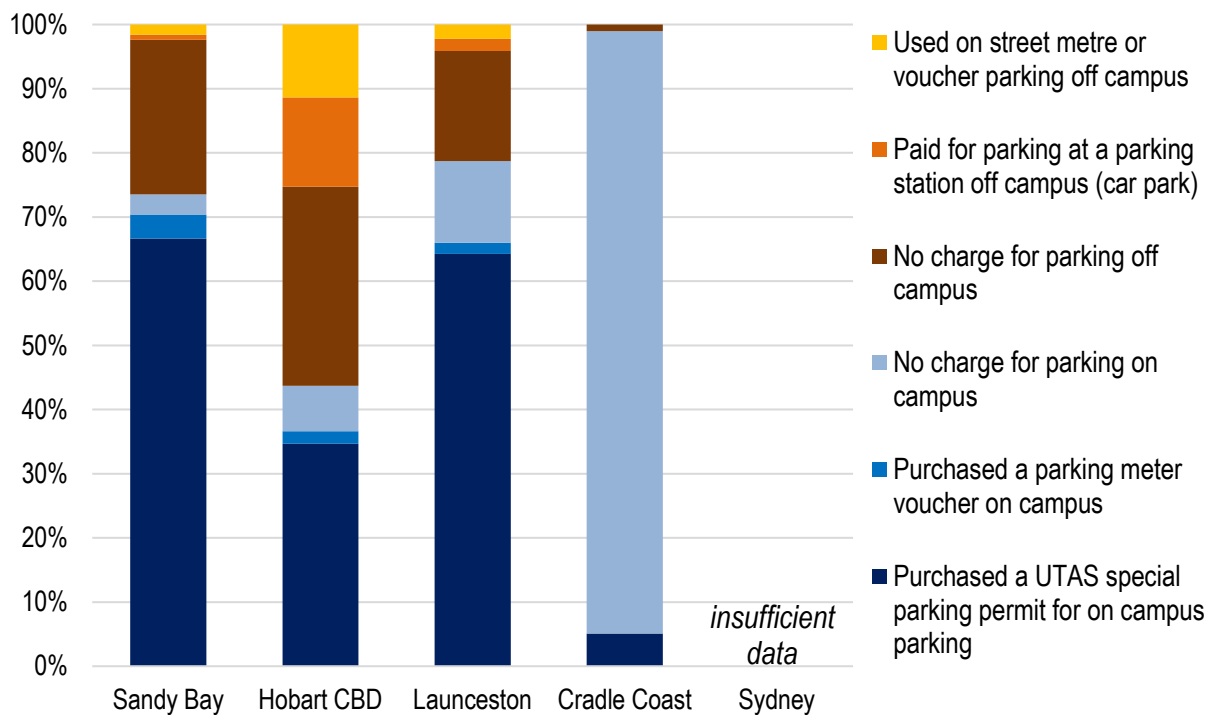


Figure 3.37: Staff – % of cars parked by category Mon-Sun

Staff parking vehicles in the Hobart CBD accounted for 24% of the total university staff parking reported Monday-Sunday. Of these, 37% were on-campus (or UTAS dedicated city parking) paid parking permit or voucher parks in 2021 – down from 2019. Another 25% of staff drivers obtained parking in CBD parking stations or on-street meters. Some 31% parked off-campus at no charge in 2021 – similar to 2019.

### **3.6. Transformation Program-related questions**

The University has established a Transformation Program (North and South) to oversee planning and development of new campuses and facilities across all three Tasmanian regions. As transport is a major focus in these efforts, several questions were included in the 2021 survey to support effective delivery of infrastructure and services.

Staff and students that were based at the Sandy Bay and Newnham campuses at the time of the survey were asked about their likely travel mode(s) if they were to move to a Hobart CBD or Inveresk campus respectively. Respondents were also asked to assess a list of initiatives on whether these would encourage uptake of public transport.

#### **3.6.1. Northern Transformation: Newnham to Inveresk**

##### ***Likely transport mode(s)***

Respondents were asked to pick up to 3 likely or extremely likely transport modes if they were to be relocated to the Inveresk campus.

More than half of staff responses (56%) indicated that they would be likely to purchase a UTAS parking pass to park near Inveresk campus, with 74% of these already doing so at Newnham. The next more popular answers were riding a bike (non-electric) (24%) and seeking parking for free on inner city/residential streets and walk a little further (22%).

For students, the most popular choices were seeking parking for free on inner city/residential streets and walk a little further and purchasing a UTAS parking pass to park near Inveresk Campus (both 35%). However, it is unclear whether some students picked the second choice with free parking permits in mind, as these permits are the only student permits currently being offered for parking at Newnham campus and 74% of these respondents indicated that they were already doing so. The third most popular option was taking the bus (only one bus) for most of the way (32%).

The least popular options for staff were catching a lift as a passenger and then taking the bus/cycling and riding an e-scooter (1% each). These were also the least preferred options for students, together with driving to a 'park n ride' car park in/near their suburb and then catching a bus/riding a bike and riding a motorbike/moped (less than 1% each).

##### ***Public transport incentives***

Respondents were asked about the likelihood of using more public transport if they were to be relocated to the Inveresk campus in relation to specific initiatives.

Staff respondents indicated they would be likely or extremely likely to use public transport more if they only needed to take a bus (48%), had real-time bus information

about when to expect the next bus (41%) or if parking at Inveresk/Launceston CBD was difficult (40%). Students also valued the need to take only one bus (54%) and having real-time bus information about when to expect the next bus (54%), but their preferred option would be lower bus fares (56%).

Least preferred incentives (not at all likely or unlikely) included park and ride at Newnham or other dedicated 'park n ride' car park then take the bus for students (50% and 47% respectively) and staff (63% and 58%). Staff respondents also indicated that a loyalty program where you earn points every time you use the bus would not incentivise their use of public transport (62%).

Additionally, staff and students were asked if they would continue to use the bus (if they were already doing so) if relocated to Inveresk, with 33% of staff and 11% of students indicating that they would stop using the bus. It is unclear if the change would result in more sustainable transport modes being used (e.g., cycling or walking if leaving close to the city).

### **3.6.2. Southern Transformation: Sandy Bay to Hobart CBD**

#### ***Likely transport mode(s)***

Almost half of staff responses (43%) indicated that they would be likely to take the bus (one bus only) if they were relocated to a Hobart CBD facility, with only 22% of these already doing so at Sandy Bay. The next more popular answers were seeking parking for free on inner city/residential streets and walking a little further to their workplace in the CBD (29%) and purchasing an annual parking permit (19%).

The most popular choices for students were taking the bus (one bus only) (51%, with 45% of respondents already doing so to go to Sandy Bay), seeking parking for free on inner city/residential streets and walking a little further to their workplace in the CBD (28%) and catching a lift as a passenger with another person all the way to the CBD (23%). The option of purchasing a UTAS annual parking permit scored very low (<2%) compared to northern respondents, noting that an indicative cost of such parking permit was provided for southern but not northern respondents.

Least preferred incentives included catching a lift as a passenger and then cycle or take a bus for staff (<1% each), and park and ride at Sandy Bay then ride a bicycle and riding an electric scooter for students (<0.5% each).

#### ***Public transport incentives***

Staff respondents indicated they would be likely or extremely likely to use public transport more if they only needed to take a bus (52%), if there was an increased frequency of buses during peak hours (51%) or if parking at the CBD was difficult (47%).

Students also valued the need to take only one bus (65%) and increased frequency of buses during peak hours (60%), but their preferred option would be lower bus fares (67%), with the provision of real-time bus information also being highly valued (62%).

Least preferred incentives were all related to the eastern shore (Bellerive) to CBD ferry service (either with or without parking facilities near terminal and bicycle ferry boarding

option) for both staff and students (more than 60% not at all likely or unlikely). Students' responses also indicate that the 'park n ride' option at the Sandy Bay campus at a cost was not a likely option (64%).

When asked if they would continue to use the bus (if they were already doing so) if relocated to Hobart CBD, 14% of staff and 16% of students indicated that they would stop using the bus.

## 4. TRACKING PROGRESS

The following figures show how the University community has progressed in terms of demonstrating more sustainable travel behaviours when commuting. Overall, the story is positive, although for staff there is some variability between campuses and regions. Figure 4.1 and Figure 4.2 show the change between 2013 and 2021 for students and staff in all regions and larger campuses or campus groupings according to key performance indicators - 'main mode to university' and 'active modes'.

### 4.1. Students

For students, the largest population group, the picture is generally positive with a consistent decline in the proportion of student drivers of single occupant vehicles in city campuses (except for Sydney). City campuses also show an increase in active and public transport modes (Figure 4.1).

The most obvious and consistent improvement has been the increase in public transport use in Tasmania within the sustainable mode category, with changes in the walk and bicycle mode more variable depending on the campus or region. In addition to provision of bus stop shelters, improvements to Metro Tasmania bus services to University campuses in both Launceston and Hobart (especially through services which avoid bus changes in the Hobart CBD and service frequency) continue to impact on student bus patronage levels, despite the impact of COVID-19.

The decline in walking as the main mode for students in Sandy Bay has been offset by a marked increase in bus use (although this was not the case in Newnham and Sydney, which show a decline in both active and public transport). Since bus use usually involves walking either end, walking activity associated with this is hidden, as it is with those drivers parking vehicles some distance from a campus (Figure 4.1).

Between 2013 and 2021 the only campus increasing the share of students primarily undertaking active modes to get to university were those attending city facilities – Hobart CBD and Inveresk (Figure 4.2). This reflects the growing proportion of students living in and around these locations, facilitating the option to walk, run or cycle.

Note: Sample sizes for some campus locations are < 100 partly due to the increase in students studying from home (Newnham n=54, Inveresk n=18, Cradle Coast n=20, Sydney n=7). Analysis of data collected from these campuses is taken with caution.

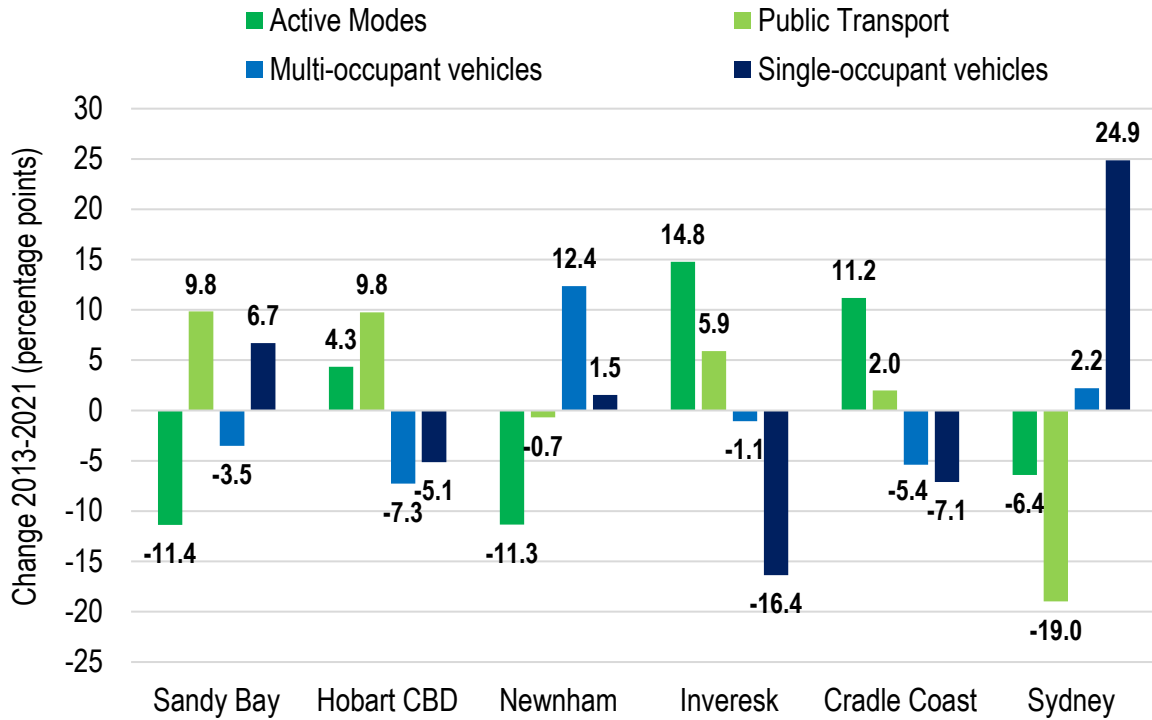


Figure 4.1: Student mode change over time by campus location – main mode to UTAS

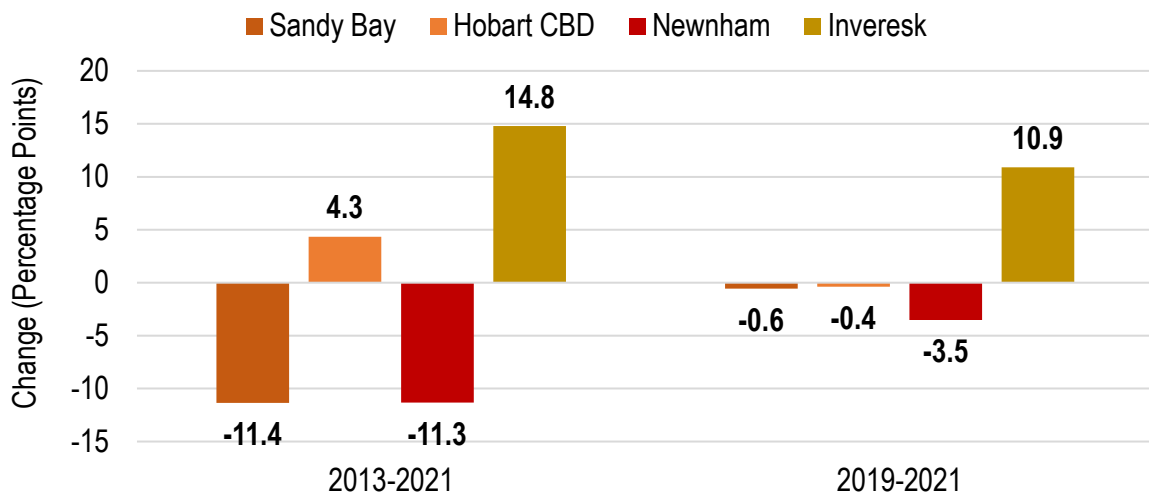


Figure 4.2: Student active mode change by major campus 2013-2021 and 2019-2021

## 4.2. Staff

For staff there is evidence of a small shift to sustainable modes away from single or multi-occupant vehicle drivers across the whole University. The shift is largely attributable to an increase in bus use, though this is from a low base. There is also evidence of a small shift to informal car-pooling in Newnham, where staff are arriving as a car passenger or as a driver with multiple occupants.

At Sandy Bay, we see a reduction in active modes for the period 2013-2021 despite an increase in bus use (Figure 4.3). This suggests that some walk or cycle journeys are being replaced by bus journeys, though there has also been an increase in vehicle use.

For staff attending Hobart CBD facilities we see an increase in active modes since 2013, the only notable increase for major campuses where we have good sample sizes (Figure 4.4). Since 2019, the most noticeable increase has been for Newnham.

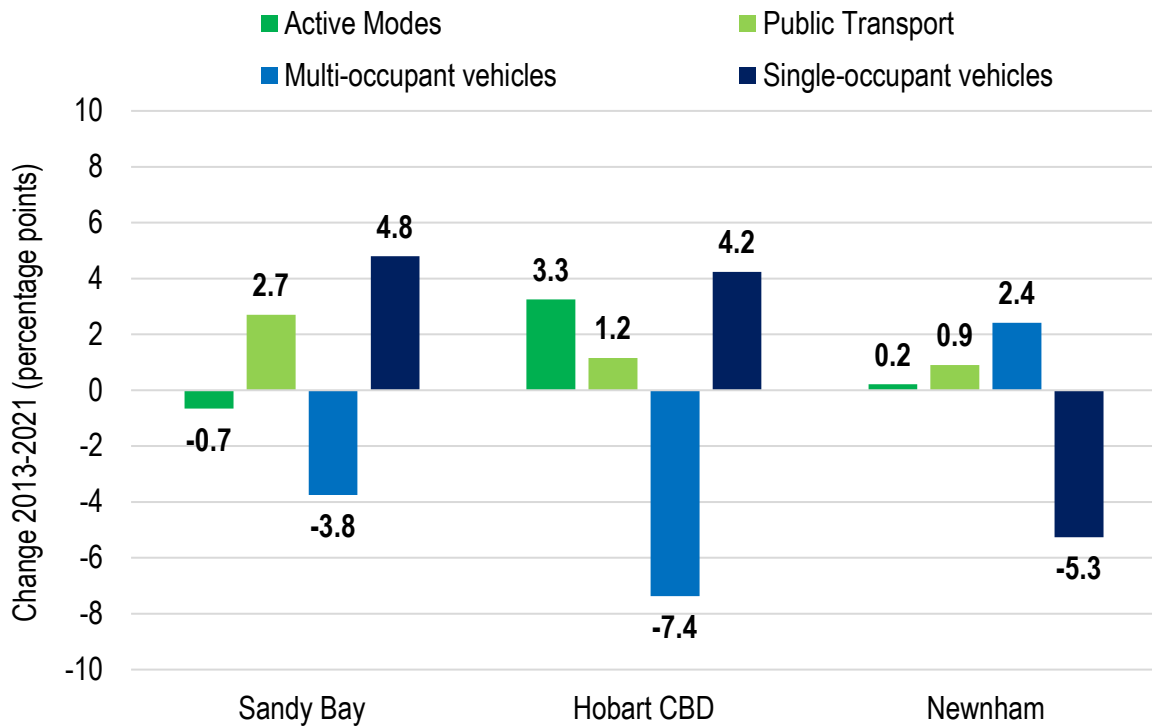


Figure 4.3: Staff mode change over time by campus location – main mode to UTAS

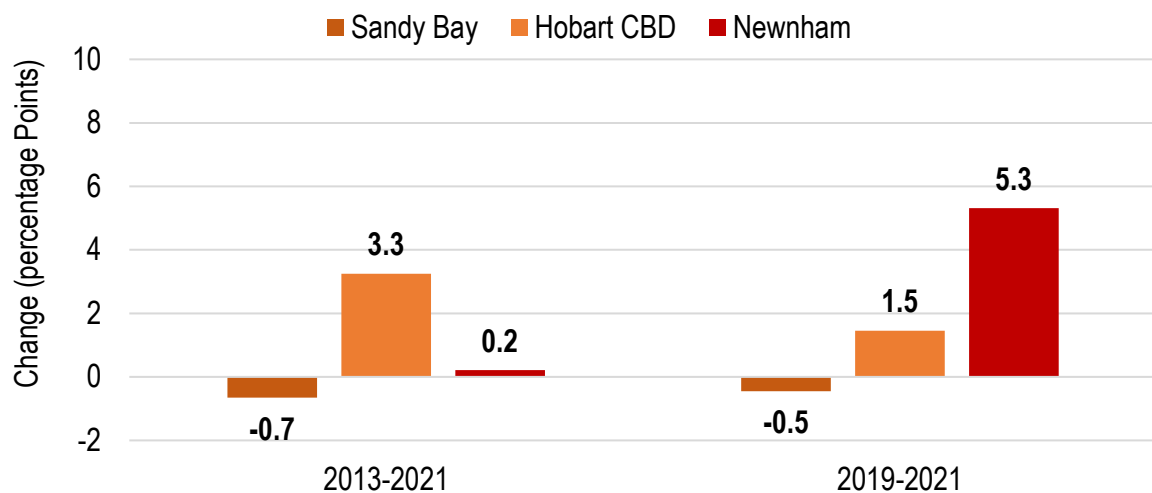


Figure 4.4: Staff active mode change by major campus 2013-2021 and 2017-2021



## 5. SUSTAINABLE TRANSPORT STRATEGY REVIEW

The UTAS Sustainable Transport Strategy 2017-2021 has the following objectives:

1. Maximise and promote access to the University by sustainable, healthy and safe means
  - University access and equity improvement
  - Health, safety and wellbeing enhancement
  - Increase in no or low carbon transport modes
  - Community co-benefits and collaboration
2. Increase sustainable transport mode choice and reduce the incidence of unnecessary travel
  - Increase in no or low carbon modes
  - Travel demand reduction
  - Single occupant vehicle parking demand reduction
  - Community co-benefits and collaboration
3. Reduce greenhouse gas emissions from university transport sources and work towards transport carbon neutrality
  - Increase in no or low carbon modes
  - A carbon neutral university fleet
  - Reduce university vehicle fleet costs
  - Community co-benefits and collaboration
4. Demonstrate leadership in sustainable transport practice
  - Community co-benefits and collaboration
  - Collect and share transport data and knowledge
  - Support innovative practices and processes
  - Integrated operations and academic programs

The current strategy finishes in 2021 with the next iteration under development for 2022-2032 to better cover the period for completing the Transformation Program across the state. All the UTAS sustainable transport strategies have focused on supporting modal shift through improved infrastructure and services within UTAS' control or direct influence through stakeholder partnerships while working to influence community changes, such as safer active transport connections. Notwithstanding COVID-19 impacts, the TBS results broadly validate these efforts with successful modal shift evident over time. The surveys also enable a fine grain assessment of the impact of specific initiatives and interventions to support such modal shifts. The focus at its most basic has been to increase bus use and active mode choices and reduce the share of students and staff driving as sole occupants.

## APPENDIX: QUESTION TOPICS

	Students	Staff
<b>Commuting (previous week)</b>		
Campus attended for work/study each day	✓	✓
Main transport mode to and from work/study	✓	✓
Time of arrival/departure to/from work/study	✓	✓
Trip steps for each journey (by mode and approximate time)	✓	✓
<b>Car/parking (previous week)</b>		
Driver licence allowing driving in Australia	✓	✓
Car/motorcycle access	✓	✓
Car type (size and power)	✓	✓
Journey combined with other activities	✓	✓
Parking type	✓	✓
<b>Business/study travel (previous week)</b>		
Campus/facility of origin	✓	✓
Trip steps for each journey (by mode and approximate time)	✓	✓
Destination campus/facility	✓	✓
<b>ICT use (previous year)</b>		
Face-to-face vs online activities frequency (e.g., meetings, conferences)		✓
ICT technology use frequency (by type)		✓
<b>Working from home (previous year)</b>		
Working space size and heating/cooling system		✓
Working space individual vs shared use		✓
ICT equipment used		✓
<b>Public transport use</b>		
Public transport card ownership and credit	✓	✓
Public transport website/app use frequency	✓	✓
COVID-19 impact on public transport use	✓	✓
Likelihood of taking up offer to salary-sacrifice bus fare expenses		✓
Likelihood of using more public transport if salary-sacrifice		✓
Direct (no transfer) bus service use	✓	✓
Likelihood of using more public transport if no transfer required	✓	✓
<b>Bicycle use (previous week)</b>		
Use of University bicycle facilities/information	✓	✓
Likelihood of cycling more if salary-sacrifice bicycle cost		✓
<b>Transformation Programs (Sandy Bay and Newnham)</b>		
Likely main transport mode if relocating to the city	✓	✓
Incentives that would encourage more bus use	✓	✓

	Students	Staff
<b>Demographic</b>		
Main campus	✓	✓
Employment status		✓
Enrolment status (full/part-time)	✓	
Study mode (online/on-campus/mixed)	✓	
Gender and age group	✓	✓
Place of origin (international/interstate/Tasmania)	✓	
Student accommodation residence	✓	
Residential postcode and suburb (previous week)	✓	✓