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EQUITABLE TECHNOLOGIES FOR SMARTER URBANISM:

ENHANCING PRIORITY CAR PARKING AT WESTERN SYDNEY UNIVERSITY

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EXECUTIVE SUMMARY

Relocating university campuses to Central Business Districts (CBDs) changes the way people travel to and from campus. While CBDs are often considered accessible due to the increased availability of public transport and non-motorised transit options (e.g. walking, cycling), urban locations can also lead to social exclusion and transport disadvantage for some. For example, people with disabilities and caring commitments who are dependent on private car transport to facilitate their mobility, can find it more difficult to access urban campuses when accessible parking and transport options are not readily available.

In 2018, Western Sydney University opened its second city-based campus in the City of Liverpool, located in Southwest Sydney, New South Wales. With limited on-site car parking in the campus basement, plans were implemented to provide staff and students with disabilities and caring commitments with priority parking. DIVVY Parking Pty Ltd was commissioned to deliver a car parking service using their app and website based parking platform.

The research project outlined in this report examined DIVVY Parking's priority parking solution for people with disabilities and caring commitments at Liverpool City Campus. The research aimed to generate insights and recommendations for:

- the provision of priority parking at Western Sydney University's vertical (and horizontal) campuses into the future;
- the use of technology to provide priority and equitable parking in general;
- user experience and service design for, and with, people with disabilities and other priority needs, including people with caring responsibilities;
- ensuring more accessible and equitable urban spaces.

Through conducting focus groups with priority parking car park users and Liverpool City Campus parking stakeholders, the research found that provision of priority parking is essential for ensuring Western Sydney University's Liverpool City Campus is accessible to people with disabilities and caring responsibilities. The *key findings* of this research are as follows:

- **DISABILITY AS CONSTANT ADVOCACY WORK:** For people with disabilities, the need to self-advocate is a constant feature of daily life. Accessing priority car parking at Western Sydney University's Liverpool City Campus is no exception. Many students are not in a position to advocate strongly for themselves and are thus missing out on priority parking. Self-advocating for all manner of university services puts students with disabilities (and caring commitments) under significant stress and anxiety.

- **WIDENING PRIORITY:** There are students who would benefit greatly from access to priority car parking but are not captured by the measures used to determine access to priority parking at Liverpool City Campus. It was widely acknowledged that an equitable car parking system must draw upon more than an RMS permit to determine access to priority parking.
 - **THE NEED FOR A DROP-OFF/PICK-UP POINT:** There is a strong demand for a safe and accessible drop-off/pick-up point located directly outside the University building. This would not only serve people with disabilities, but improve accessibility and safety for all campus users.
 - **DESIGNING FOR ACCESSIBILITY:** Some students experience digital literacy issues, which impacts their ability to access mobile apps on personal devices. In addition, the car park design and layout, including exit/entry, also presents accessibility concerns for people with disabilities. The car parking system does not enable users to book spaces that suit their individual needs.
 - **THE NEED FOR SAFE AND DIVERSE TRANSIT OPTIONS:** Negative place perceptions of Liverpool City influence transport preferences and choices, contributing to fears of using public transport to get to campus. The distance between campus and the Liverpool train and bus stations further reinforces the need for on-site priority parking and a shuttle bus service between the campus and public transport hub.
 - **DESIGNING FOR SAFETY:** The basement car park creates a sense of isolation, darkness, and disconnection, which is amplified by the lack of mobile phone signal and WiFi access. On the whole, car parks are considered unsafe places to be, particularly for women. There are also significant driver safety concerns regarding entering and exiting the car park (e.g. merging into lanes with obscured vision, and being positioned in front of oncoming traffic), which are exacerbated for people with disabilities.
 - **INEQUITY ACROSS MULTIPLE PARKING SYSTEMS:** Staff and students often use multiple campuses, and this requires them to use DIVVY Parking in addition to Western Sydney University's parking permit system. This cost inequity impacts booking practices, particularly for professional staff. The main benefit of priority parking for staff is the ability to book in advance, however, professional staff are not doing so due to the financial implications and the need to break down parking costs into more manageable payments. As such, they are receiving limited benefit from having priority parking.
 - **A FAST PACED, IN-AND-OUT CAMPUS:** The fast paced temporalities of Liverpool City Campus, in comparison to suburban campuses such as Campbelltown and Bankstown (Milperra), are overwhelming some students, especially those with a disability. A lack of accessible and safe transit options exacerbates this situation. Furthermore, the 'in-and-out' dynamic of the campus is experienced as impacting the sense of belonging and community.
 - **THE CAR PARKING CONUNDRUM:** While there is support to broaden the criteria for who can access priority parking, there are also concerns about overloading the car park. During data collection, the car park was underutilised. This is a significant issue for the University as the basement levels could be repurposed to add to the limited amount of teaching space at the campus. However, a busier basement car park acts as a barrier to attending campus for those with priority parking needs. While an underutilised car park with an advanced booking system is functional, the priority parking system is vulnerable if use of the car park changes. The car park's accessibility to priority parkers works at present, as it is underpinned by an informal understanding that the car park is solely for priority parking. In actuality, anyone with a university email account can use DIVVY to book a space in the basement car park.
- Based on the above findings, the following recommendations have been developed to ensure priority parking at Western Sydney University is equitable and accessible for people with disabilities and/or caring responsibilities. Some of these *recommendations* will also improve campus accessibility for all users.

DISABILITY AS CONSTANT ADVOCACY WORK

- 4.1.1:** The advocacy work required for students and staff to access priority parking should be minimised. Western Sydney University could integrate parking requirements into Academic Integration Plans (AIPs) for students and Reasonable Adjustment Plans (RAPs) for staff.
- 4.1.2:** The University's priority parking system needs to enable and encourage staff to identify those less able, and/or likely, to self-advocate for priority parking.
- 4.1.3:** Western Sydney University should provide a wider and clearer definition of who qualifies for priority parking. This definition should extend beyond those who hold an RMS permit and also include those with caring responsibilities.

WIDENING PRIORITY

- 4.2.1:** Western Sydney University should provide a wider and clearer definition of who qualifies for priority parking. This definition should extend beyond those who hold an RMS permit and also include those with caring responsibilities.
- 4.2.2:** With a wider definition of priority in place, Western Sydney University should also develop initiatives to prevent misuse of the priority parking system. Any additional workload created for disability and welfare services as a consequence should also be accounted for.
- 4.2.3:** Western Sydney University should develop case study examples of priority parking users to assist staff and students to identify their eligibility for priority parking. Data from this research could be used as a basis for those case study examples.
- 4.2.4:** All University staff should be able to refer students for access to priority parking if they identify a need for it.

THE NEED FOR A DROP-OFF / PICK-UP POINT

- 4.3.1:** Western Sydney University should collaborate with Liverpool City Council to overcome the logistical challenges of providing a drop-off/pick-up point outside Liverpool City Campus.

DESIGNING FOR ACCESSIBILITY

- 4.4.1:** Western Sydney University should provide formal assistance and clear onboarding steps to support the digital literacies of those students and staff having difficulties locating, downloading and using the DIVVY app.
- 4.4.2:** The DIVVY website should be promoted clearly to allow students and staff who are not comfortable with the app to use an alternative booking service.
- 4.4.3:** At the start of semester, when large numbers of new students are commencing University, a car parking attendant should be posted at the entry and exit of the Liverpool City Campus to assist new car parking users and to ensure a safe car parking experience.
- 4.4.4:** Work should be completed to ensure QR readers do not require unsafe driving practices to access, and are easy to reach with a phone for a variety of users. Alternative technology, such as number plate readers, could also be considered.
- 4.4.5:** The car park should have at least a ten-minute grace period for early entry to avoid congestion at the car park entrance.
- 4.4.6:** Car parking spaces should be allocated to priority parkers based on individual accessibility needs. DIVVY's potential to sort and separate users by groups should be utilised to assign spaces on a needs basis (e.g. a group that needs wider spaces, versus a group that needs to be closer to a lift).

THE NEED FOR SAFE AND DIVERSE TRANSIT OPTIONS

- 4.5.1:** In line with other campuses, Liverpool City Campus should have a designated shuttle bus service to and from public transport stations.
- 4.5.2:** The University could work closely with Liverpool City Council on projects that address negative perceptions of safety in the city. This could include research into improving safe transit to, from and within the city.

DESIGNING FOR SAFETY

- 4.6.1:** Physical design changes should be made to the basement campus to enhance feelings of safety and security (e.g. more lighting and security cameras).
- 4.6.2:** Introduce clearer signage throughout the car park so people know who to call if there is a problem, or how to access the help button.
- 4.6.3:** A panic button should be installed on each floor at a height accessible to everyone (including children and wheelchair users).
- 4.6.4:** Phone and WiFi reception should be enhanced to ensure people using the basement car park can use their personal devices to call for assistance if required.
- 4.6.5:** Western Sydney University should work with Westfield and Liverpool City Council to install pedestrian and traffic lights at the entry/exit to Westfield for pedestrian and driver safety.

INEQUITY ACROSS MULTIPLE PARKING SYSTEMS

- 4.7.1:** Continue to evaluate Western Sydney University's different parking systems to ensure an equitable cost structure for staff and students, noting professional staff are the most adversely impacted by the new systems being designed for vertical campuses.
- 4.7.2:** DIVVY could change their one-hour booking time deviations to 30 or 15 minutes, while retaining a one-hour minimum booking time.

A FAST PACED, IN-AND-OUT CAMPUS

- 4.8.1:** Increase the diversity and safety of transport options (particularly in the evening) to allow students to spend more time on campus, without feeling rushed.
- 4.8.2:** Ensure all students who require priority parking are aware of the basement facilities, and are provided with access. This will allow students with diverse accessibility needs to access campus more frequently and for longer.
- 4.8.3:** Western Sydney University should continue to design calm spaces within the building such as 'the spoon room'. However, a discussion should be had about changing the name of the room as the term 'spoon' can carry very different connotations than the intended use of the room. This could exclude people from using the space.
- 4.8.4:** Western Sydney University should work with Liverpool City Council to develop the 'hanging around' precinct, and to ensure that this caters for diverse needs.

THE CAR PARKING CONUNDRUM

- 4.9.1:** DIVVY and Western Sydney University should re-evaluate the advanced booking option as the main benefit of priority parking and consider other priorities.
- 4.9.2:** To ensure priority parking is beneficial to those who need it, the priority car parking system must be designed in the context of surrounding car parking options suitable for non-priority parkers.
- 4.9.3:** Car park usage should be monitored to ensure that priority parkers continue to have priority parking access.
- 4.9.4:** Western Sydney University should improve data practices to better understand how students and staff use, and travel to and from, the campus.

1. INTRODUCTION

EQUITABLE URBAN CAMPUSES AND CAR PARKING TECHNOLOGIES

The global higher education market is increasingly competitive, which means universities have to offer courses in campuses that are easily accessible, as well as attractive for both prospective students and engagement with local business and community (Newell, Manaf, & Marzuki, 2019).

In Australia, some universities are relocating their campuses and constructing new high-rise buildings in Central Business Districts (CBDs). When universities shift into vertical buildings in urban centres, people often need to travel to and from campus in different ways. Increasing public transport use, and non-motorised forms of travel (such as walking and cycling), can be a key component of sustainable transport strategies and transitions away from car-dependent campuses (Kaplan, 2015).

The transport policies a university endorses matter at the broader urban scale as universities have profound economic, social and environmental impacts on their surroundings, and are often significant contributors to local traffic (Delmelle & Delmelle, 2012). A central location can be a positive force for more environmentally friendly travel practices and increased accessibility, but urban campuses can also exclude people who are dependent on car transport for their participation in university and everyday life. People with disabilities, who use private vehicles more than public transport in Australia (Haning, Gazey & Wolmer, 2012), can struggle to access urban campuses (and urban spaces more broadly) due to vehicle congestion and limited car parking (Merriman, 2016). Furthermore, public transport systems and urban spaces are largely designed for highly mobile, able-bodied people. People with disabilities can, therefore, experience social exclusion and transport disadvantage (Hine, 2016). As Hamraie (2018) argues, urban ‘liveability’ plans, policies and practices are largely ableist due to their emphasis on mobility and walkability, which “devalue[s] disabled life on the level of everyday structures and experiences” (p. 39), such as getting an education and travelling for study. To ensure university campuses remain accessible, car parking that prioritises people with disabilities is a must. However, given the higher competition for space, on-site car parking is inevitably limited when university campuses are located in CBDs (Newell, Manaf & Marzuki, 2019).

New technologies are increasingly utilised to address the long standing ‘thorny’ issue of car parking in dense urban spaces (Lam & Yang, 2019). Car parking technologies are being implemented to save space, such as the use of

hydraulic racks to stack vehicles on top of one another. Real-time information, sensor data, and digital display boards are used to streamline the process of finding a vacant car parking space. Cashless payment systems are speeding up car park entry and exit, and pre-booking services are available through websites and mobile apps. To ensure cities are 'smart' in terms of both efficiency and environmental quality, Lam and Yang (2019) argue that urban governance must continue to integrate car parking technologies into the built environment in as seamless a manner as possible. This requires dynamic governance practices that integrate technology within an ever changing technological and infrastructure landscape (Lean, Condie, McNeill & Gorman-Murray, 2017). However, urban spaces can only be 'smart' and 'sustainable' if any technologies employed are equitable and accessible to all. University campuses are no exception, and should aspire to being community leaders in achieving equity and accessibility.

While technological innovations have the potential to alleviate car parking pressures (see Lam & Yang, 2019), the access needs and mobility concerns of people with disabilities are far from being centred in the design and implementation of car parking technologies. New car parking technologies present opportunities to re-work the way parking supports people with disabilities. Designated car parking spaces for people with disabilities are a legal requirement in Australia (Department of Social Services, 2019), however, there is much more that could be done to ensure social inclusion and accessibility in increasingly urban places. The field of Critical Disability Studies has shown how it is the social and physical conditions of society that make someone disabled, not a person's ability to walk and move (McLoughlin, McNicoll, Beecher Kelk, Cornford & Hutchinson, 2019). Australia is still a long way from having fully accessible places and equitable mobilities (Scheurer, Curtis & McLeod, 2017). Therefore, priority parking is an absolute necessity to ensure campus accessibility, and car parking technologies must place people with disabilities at the centre of their service.

1.1 PROVIDING PRIORITY PARKING AT WESTERN SYDNEY UNIVERSITY'S LIVERPOOL CITY CAMPUS

In 2018, Western Sydney University opened its second city based vertical campus in the CBD of Liverpool, a small city located in south-western Sydney in New South Wales, Australia. During the campus planning stage, it was decided that students and staff with disabilities and caring commitments should be provided priority access to the limited on-site car parking in the building's basement. To develop a priority parking system, the university commissioned the services of DIVVY Parking, a smart parking company that allows drivers to pre-book parking spaces through its app and website-based platforms.

Recognising the limited information available on the provision of priority parking using smart technologies, Western Sydney University and DIVVY Parking engaged Travel in the Digital Age and the Social Technologies research teams at Western Sydney University to complete research on the operation of priority parking at Liverpool City Campus. The following report presents the findings of this research, outlining a series of recommendations aimed at enhancing priority parking. The report also provides considerations about better utilising car parking technologies to allow equitable access to urban spaces.

2. RESEARCHING PRIORITY PARKING AT LIVERPOOL CITY CAMPUS

The primary aim of the research was to enhance the design and application of DIVVY's car parking platform in delivering priority parking for people with disabilities and caring responsibilities at Western Sydney University's Liverpool City Campus.

The research also sought to generate insights and recommendations for:

- the provision of priority parking at Western's vertical (and horizontal) campuses into the future;
- the use of technology to provide priority and equitable parking in general;
- user experience and service design for, and with, people with disabilities and other priority needs, including people with caring responsibilities;
- ensuring more accessible and equitable urban spaces.

The research was co-funded by DIVVY Parking and a NSW Technology Innovation Voucher awarded to facilitate research on app-based technologies for priority parking systems.

2.1 RESEARCH DESIGN

Several methods were utilised to achieve the project's aims. These included:

1. Researcher participation in a User Transit Experience Advisory Group established by University stakeholders during the construction phase of the Liverpool City Campus, and prior to the roll out of DIVVY Parking to manage parking on the campus. The Advisory group consisted of key stakeholders at Western Sydney University (including disability advocates) and representatives from DIVVY.
2. Two user focus groups with priority parking users (students and staff), and priority parking advocates (including Disability Services) were carried out to generate data on user experiences and issues. In addition to a semi-structured discussion, focus group participants also engaged in an app elicitation activity designed to deepen insights and illuminate user experiences of the app. During the focus groups, participants and facilitators visited the basement car park to contextualise their parking experiences in the material conditions of the car park.
3. A stakeholder focus group with Western Sydney University Liverpool parking stakeholders to gain insights about the implementation and functioning of the DIVVY Smart Car Parking system. Themes that emerged from the two focus groups with priority parking users and priority parking user advocates were presented as a catalyst for discussion with stakeholders. Stakeholders who participated in the focus group included the: Liverpool

City Campus Provost (Professor Brian Stout); Dean, School of Social Sciences and Psychology (Professor Kevin Dunn); Deputy Dean, School of Nursing and Midwifery (Dr Stephen McNally); Executive Officer, School of Social Sciences and Psychology (Melissa Linderberg); Senior Strategy Advisor and Project Manager (Christine Croser); Manager, Business Resilience and Campus Access (Vitt Cox); DIVVY Parking CEO (Grant Fowler); DIVVY Parking Marketing and Communications Manager (Katherine Fowler), DIVVY Business Development Manager (Kiara Pacheco). Unfortunately representatives from Western Sydney University's Disability Services and the School of Social Science and Psychology's Equity and Diversity Convenor were unable to attend the focus group. However, Disability Services participated in the user and advocate focus groups.

2.2 ETHICAL CONSIDERATIONS

This research was approved by Western Sydney University's Human Research Ethics Committee (Approval Number: H12886). All focus groups were audio-recorded with participants' permission. As the stakeholder focus group took place using Zoom video conferencing, a video-recording was also generated. Any information that could identify focus group participants has been excluded from this report in order to maintain confidentiality and anonymity. While those who participated in the stakeholder focus group are named above, given their involvement in the research was in their professional capacities, their specific contributions to this research have been reported anonymously in the report to maintain their confidentiality as much as possible.



3. LIVERPOOL CITY CAMPUS, DIVVY PARKING AND THE NEED FOR EQUITABLE ACCESS

3.1 LIVERPOOL CITY CAMPUS - A TRANSITION IN ACCESS

During its development, University managers determined that Western Sydney University's Liverpool City Campus would accommodate staff and students from the School of Nursing and Midwifery and the School of Social Sciences, which had previously been located on Western Sydney University's Milperra Campus (commonly referred to as the Bankstown Campus). Liverpool City Campus required a different approach to work and study owing to the unique set of design and usage constraints of a vertical campus. There were a number of issues that needed to be addressed in order to transition existing staff and students to a vertical campus, including redeveloping learning and teaching strategies to suit the design of the campus. One of the main concerns raised by both students and staff was the limited parking available on a city based campus, compared to the parking provided on Western Sydney University's suburban campuses.

According to Western Sydney University's (2018) *Liverpool City Campus: Access Guide*, the Liverpool City Campus aims to 'reduce the reliance on private cars, creating equality of access to tertiary education, and lessen our carbon footprint'. However, managers at the University acknowledge that some staff, students and visitors still need to drive to campus in order to participate fully in university life. This is partly owing to difficulties accessing other forms of transit from the Liverpool City Campus despite its inner-city setting. Liverpool City Campus is located 800 metres from the Liverpool transport hub, which includes the

Liverpool Bus-Rail Interchange, the Liverpool to Parramatta T-Way (rapid bus network) and the recently completed South West Rail Line. At the time this report was published, there was no University shuttle bus between the Liverpool Bus-Rail Interchange and campus. Other motorised transport options between Liverpool Bus-Rail Interchange and campus include taxi, rideshare apps such as Uber, and public bus.

Transitions in student and staff commutes can be further understood within the broader transitions in work and study practices that are shaped by a vertical campus located in a busy, urban centre with a faster pace of life. The new Liverpool City Campus instigates changes to the ways in which students and staff access and experience the University. While a number of staff members are required to be on campus all day given their roles and responsibilities, coming to campus for shorter bursts of time were expected and encouraged through the availability of nearby parking systems as well as the basement car parking system introduced and designed by Western Sydney University in collaboration with DIVVY Parking.

3.2 PARKING IN THE BASEMENT

Liverpool City Campus' basement car park is accessible via 113 George Street and shares an entry with the adjacent shopping centre Westfield Liverpool. The car park has relatively few spaces (76 bays across 5 levels) in comparison



to the almost 5,000 paid and free, short and extended stay parking spaces available within the Liverpool CBD grid Western Sydney University (2018). The decision to provide priority parking to staff and students with disabilities and caring commitments came from an awareness that the onsite (and most accessible) parking available would be in high demand.

To deliver priority parking on their Liverpool City Campus, Western Sydney University entered a partnership with DIVVY Parking. DIVVY is a technology business that allows customers to make real-time bookings and payments for parking spaces via the company's app or website. The parking spaces are made available by a range of entities with underutilised parking, or in need of a parking management system. DIVVY allows staff and students to book parking in advance. It is the first time the University has engaged an external provider to manage parking.

Staff and students need a DIVVY account before they can make a booking. They must create an account using their staff or student email address otherwise the basement parking spaces will remain hidden. General users of the car park pay for parking on an hourly basis (one-dollar per hour), via the DIVVY app or website.

3.3 PRIORITY PARKING

While all staff, students and visitors can use DIVVY to access the basement car park, students and staff who are granted 'Priority Parking' are provided with the following benefits:

- All students with priority parking, and staff with a RMS Mobility permit, can use the basement car park for free.
- Staff with priority parking, but without a RMS Mobility parking permit, are required to pay the one-dollar per hour regular fee.
- Students/staff who obtain priority parking for disability and/or caring reasons can pre-book parking spaces up to 42 days in advance, a 12 day extension upon the 30 days allowed for all other users.

In addition, students, staff and visitors with an RMS Mobility permit can use the two designated disability parking spaces on a first come first serve basis (provided as per the legal requirement).

3.4 ACCESSING PRIORITY PARKING

Priority parking is available to students and staff with disabilities and caring commitments. There are three ways people with a disability can gain access to priority parking:

1. Email a scanned copy of their RMS Mobility Parking Scheme License and their staff/student identification to Campus Safety and Security.
2. Provide documentation of an RMS Permit as part of applying for an Academic Integration Plan (for students) or a Reasonable Adjustment Plan (for staff members).
3. Complete a Priority Parking Application Form and send it to Campus Safety and Security (the university advises that this is the most suitable option for students and staff with a short-term mobility consideration where obtaining an RMS Mobility Parking permit would not be feasible).

To be eligible to obtain priority parking via the Priority Parking Application Form, students and staff need to meet one of the following criteria:

- Require the use of a wheelchair, crutches, walking frame or other specific mobility aid; or have a disability and/or medical condition that significantly impacts on mobility.
- Be an expectant mother, whose mobility is significantly affected by their pregnancy.
- Have a condition that prevents them from safely navigating paths of travel and managing public transport conditions (as stated in the Priority Parking Application Form).

Applicants require a General Practitioner (GP) or accredited health professional to sign off on the form. If the form is approved, the applicant gains access to priority parking for one teaching session and applicants are required to re-apply for priority parking for each additional teaching session.

The conditions for obtaining priority parking as a carer are not as well defined. Staff and students with children who need to drive to campus can apply for priority parking, however, this is dealt with on a case by case basis.



4. FINDINGS

This section presents findings from the focus groups conducted with priority parking users, and stakeholders with responsibilities for implementing priority parking at Liverpool City Campus. It also provides recommendations for improving the provision of priority parking at Liverpool Campus, and the accessibility of the campus more broadly.

4.1 DISABILITY AS CONSTANT ADVOCACY WORK

Nothing moves unless we advocate for ourselves.
(Student)

In our focus groups with staff and students, people with a disability highlighted that the need to self-advocate is a constant lived experience. University life is not an exception to this, and neither is the priority parking system at Liverpool City Campus. Obtaining priority car parking inherently requires more work for people with disabilities in the form of negotiations and meetings with people, which takes extra time, energy, and in many instances, additional costs. Costs can be explicitly incurred such as paying for a doctor's note, or implicitly occurred through the continual consumption of a person's time and energy:

I've got to go to the RTA [Roads and Maritime Service], they will only offer me six months, that's the maximum they would offer me on a disability sticker [RMS permit] and I'd have to reapply every six months. (Student/Staff)

The ability to self-advocate is critical for accessing University services. Focus group participants reported that a number of students are not in a position to advocate strongly for themselves and are thus missing out on priority parking. Some people are uncomfortable with speaking up and asking for support, whereas others are facing barriers to accessing important information and key people/services

across the University. As an example, the following quote was from a student with an AIP (Academic Integration Plan) who did not have access to priority parking:

I hear it [Liverpool City Campus car park] being spoken about, the basement car park, but I haven't had time to explore it and therefore utilise it ... not that it needs to be an excuse but I have dyslexia, dysgraphia, and dyscalculia, and I have a short term memory loss so it [email with information about priority parking] could have come in and I've just gone 'need to know basis' and all of those sorts of things [go] in the basket. (Student)

This case demonstrates how information-heavy administrative systems can have disabling effects upon those who could greatly benefit from priority car parking. Those who are less likely to advocate for priority parking access for themselves reported feeling like they did not deserve priority parking, despite there being reasons that would indicate otherwise. The need to widen definitions of priority and communicate priority parking to a broader group of students and staff in need, is discussed in the following section.

4.1 RECOMMENDATIONS

1. The advocacy work required for students and staff to access priority parking should be minimised. Western Sydney University could integrate parking requirements into Academic Integration Plans (AIPs) for students and Reasonable Adjustment Plans (RAPs) for staff.
2. The University's priority parking system needs to enable and encourage staff to identify those less able, and/or likely, to self-advocate for priority parking.
3. Western Sydney University should provide a wider and clearer definition of who qualifies for priority parking. This definition should extend beyond those who hold an RMS permit and also include those with caring responsibilities.

4.2 WIDENING PRIORITY

We should be a priority, there's not that many of us.
(Student/staff)

Focus group participants wanted to feel prioritised by the University and for their desire for full participation in campus life to be taken seriously. In order for diverse needs to be recognised, focus group participants called for priority parking to be based upon a wider range of evidence than simply possessing an RMS [Roads and Maritime Service] permit. Relatedly, the RMS permit was seen to legitimise certain forms of disability, and delegitimise others. For example, physical health issues get prioritised over, or taken more seriously than, mental health issues. Gaining access to priority parking is more challenging for those who do not fit neatly or easily into the criteria used to determine and evidence need. Making a case for priority parking is particularly challenging without evidence, such as in the case of a student or staff member being a carer for someone with a disability.

For my caring responsibilities, I don't receive, I'm not on a carer's payment ... whilst my child has cerebral palsy and developmental delay, I don't receive any payment for her. When she was at school I did, but [not] now that she's 21.
(Student)

As the student's child is an adult, she is no longer receiving a carer payment and does not therefore have easily available evidence to support her carer status. A member of the stakeholder focus group also recounted a situation where disability services had identified and advocated for a student who did not possess the required RMS permit, but who was in need of priority parking.

... last year we had a student who found that she had anxiety catching public transport to the extent that she would sweat profusely and the disability services staff member called me up and said look, she's not got an RMS permit but she does have this condition and in my engagement with her, I think this would be a really good option to put her in a priority group for parking for DIVVY.
(Stakeholder Focus Group Participant)

The knowledge that frontline staff members have about students, especially those accessing disability services, affords them an important role as advocates for students. As noted earlier, not all students and staff can advocate for themselves, particularly when establishing that their need for priority parking extends beyond the set criteria and definitions. There are students who would greatly benefit from being prioritised for car parking yet they are not captured within the current priority parking system. For example, they might be receiving a low income and have multiple caring responsibilities. These students are either missing out on priority parking at the Liverpool City Campus (which is affecting their ability to come to Liverpool City Campus), or they are going to other campuses for their study. It was widely acknowledged in both the user and stakeholder focus groups that an equitable car parking system must go well beyond the RMS permit as the primary evidence for obtaining access to priority parking.

If we could extend the priority group to capture the broader group [who would benefit from priority parking], I think there's definitely merit in it. I know that School Management, for example, made the argument to extend the group out to parents with childcare considerations.
(Stakeholder Focus Group Participant)

However, there were also concerns that the car parking system would be "gamed" and "abused" (Stakeholder) if definitions of priority became too loose and less evidence based.

Some people just want access as a preference, and it's not out of need, it's out of preference, so we have to say it's required and necessary, those are the buzzwords that's being used everywhere. (Disability Advisor)

“ I have two children in school, one in day care, by the time I then got on the train or a bus, I wouldn't be here until 11am. (Staff)

As there is currently no way of identifying students and staff at Liverpool campus who might require priority access through current university data systems, people must be able to recognise themselves as being eligible for, and in need of, priority parking. University stakeholders proposed that the phrasing “has a condition that prevents them from safely navigating paths of travel” would work to include a broader group in need. However, the user focus groups also identified a need for carers to be added to the priority access form, and this phrasing would not allow for this user group to be encompassed.

The issue for the University is communicating what priority means when its parameters are widened. The stakeholder focus group was concerned that any widening of the parameters for obtaining priority parking could result in a “really low take up or a lot of confusion” about who can apply for the advertised service. Given that this is already the case, there appears to be nothing to lose from testing a broader definition.

4.2 RECOMMENDATIONS

1. Western Sydney University should provide a wider and clearer definition of who qualifies for priority parking. This definition should extend beyond those who hold an RMS permit and also include those with caring responsibilities.
2. With a wider definition of priority in place, Western Sydney University should also develop initiatives to prevent misuse of the priority parking system. Any additional workload created for disability and welfare services as a consequence should also be accounted for.
3. Western Sydney University should develop case study examples of priority parking users to assist staff and students to identify their eligibility for priority parking. Data from this research could be used as a basis for those case study examples.
4. All University staff should be able to refer students for access to priority parking if they identify a need for it.

“ That drop-off zone is a huge priority for disabilities. (Staff)

4.3 THE NEED FOR A DROP-OFF / PICK-UP POINT

The biggest issue for students with disabilities is there’s no drop off point, so a lot of students have drivers that will drop them off and pick them up, especially at Bankstown and other campuses as well, and there is nowhere for people to be dropped off. (Staff)

There is currently no designated drop-off/pick-up point outside Liverpool City Campus. User focus group participants stressed that there is a significant demand for a safe drop-off/pick-up point located in close proximity to the University building. Many people who have special access needs do not actually require a car parking spot (indeed many do not drive), but just somewhere close to the building to get out of a vehicle. While University stakeholders reported that the provision of a drop-off/pick-up point had been discussed with Liverpool City Council, it has not been put in place due to busy and complex traffic conditions. As such, Liverpool City Council have indicated that they are not able to consider approving a drop off/pick up point outside the campus at this point in time.

In the stakeholder focus group, participants proposed an alternative solution of a drop-off/pick-up point located within the basement parking area. A University stakeholder suggested this could be achieved by providing designated parking bays with grace periods to allow for drop off/pick up. DIVVY advised that grace periods are usually five to ten minutes, however this period of time would not be adequate for some users. For example, a carer may not be able to time their arrival to the exact time a student or staff member is ready to leave. They may also have more complex assistance needs than a five or ten minute window allows. Extending the grace period for certain users would also add an additional layer of complexity to managing priority parking, and extending it to all users could impact the commercial

viability of the car park. Having a drop-off/pick-up area in the basement car park also raised concerns about car park congestion, as well as security considerations in terms of how to manage access to the site, and the need to know who is entering and leaving the car parking facility.

More importantly, a basement drop-off/pick-up system is not the most convenient or equitable solution. The most equitable solution would be a designated drop-off/pick-up point outside campus. An area like this would not only serve people with disabilities, but it would also have accessibility and safety benefits for all users of the site. For example, people who call a taxi or rideshare service for a lift to and from the train/bus station (also see Section 4.5 'Designing for Safety') would have a clear and safe place to be picked up and dropped off. When the access needs and mobility concerns of people with disabilities are centred, other car parkers can also benefit from the increased usability of design interventions (Hamraie, 2013).

4.3: RECOMMENDATIONS

1. Western Sydney University should collaborate with Liverpool City Council to overcome the logistical challenges of providing a drop-off/pick-up point outside Liverpool City Campus.



“ When you swing around to that top level there to put your app [QR code] in, it’s such a tight swing I’ve actually got to reverse back there.

(Staff)

4.4 DESIGNING FOR ACCESSIBILITY

I’m terrible on these little tablets and little phones and stuff. I’m managing on my laptop and that’s because computers are different, a different veggie [vegetable] because it [DIVVY] opens on there. (Student)

Using the DIVVY app, and apps in general, was challenging for some user focus group participants. As a new system, some people required human assistance and support to be able to download, navigate, and use the app successfully. Human assistance also helped to provide the legitimacy and trust required by students and staff to download a new app from a third party provider.

Users and stakeholders reported that assistance to use the app was provided on an informal basis by members of Disability Services and the Western Sydney University divisions responsible for setting up the Liverpool City Campus. However, users also pointed out the need to streamline, and formalise, the onboarding process so that people can find information about priority parking and sign up more easily.

While DIVVY parking has a website, which is more suited for people with digital literacy issues and those who own older mobile devices, the service is promoted and designed as being primarily app-based. User focus group participants described themselves as lacking the digital skills required to find, download, and use apps. For most, it generally takes some time to adjust and become comfortable with booking parking with the DIVVY app, and then entering and exiting the basement car park.

When first using the car park, participants reported struggling to find where to scan the QR code that the DIVVY app

generates in order to access the car park. Signage was added later to assist, but focus group participants still reported confusion on how everything worked on their first few visits to campus. Some participants reported not being able to enter the car park when they arrived early as entry can only be made at the exact start time of the booking. Participants were left in the stressful circumstance of needing to maneuver their vehicle out of the way of other traffic.

If you get there more than five minutes early, you can’t get in, and there’s nowhere to sort of pull over. And so you just sit there and then it’s just, it becomes a Work, Health and Safety issue. (Staff)

The exit process also caused difficulties. The location of the QR code reader on the right hand-side of the entry/exit requires drivers to make a sharp right-hand turn to position their vehicles correctly, but this maneuver also puts them in front of oncoming traffic entering the car park. All participants reported missing the QR reader on their first exit, and some found it challenging to position themselves adequately on subsequent exits.

... I just go really wide there now because I know where it is [the QR reader], I know it’s there. (Student/Staff)

I just had issues trying to get out of the car park and my code not reading and I’m sitting there screaming at the camera ... so yeah, it wasn’t until week 5 [of semester] that I could get out of the car park without assistance. (Student)

There were also instances of participants not being able to exit after using their QR code because of oncoming traffic entering at the same time. In such cases, the QR code would not work again on a second attempt and security had to be called via the assistance button on the QR reader. People both with and without physical mobility issues found reaching their phones out of their car window and across to the QR reader difficult.

In regard to parking, user focus group participants had concerns about their use and access to particular car parking spaces. A key issue was the need to better organise parking allocations to reflect individual needs of priority parkers. Participants asked whether the DIVVY app has the capacity to

allow people to select a spot that is aligned to their individual needs. For example, someone might need a wider parking bay, or a parking bay that is closer to a lift

I can't select which spot or anything, it just puts me in the disabled spot. (Student)

... I would happily give up the RMS spot if I knew I had another spot, for someone who had a wheelchair ... But that's where it tells me to park, bay 40. It always tells me to park in bay 40. (Student)

Some participants with disabilities had larger vehicles and many car parking spaces in the basement were unsuitable. If the two RMS spots were in use, participants would struggle to park in a standard sized space. The RMS spots should be non-bookable and available on a first come first served basis as government legislation prevents them being booked through a car parking service such as DIVVY. However, there are other spaces in the basement car park that are wide enough and located in close proximity to lifts, which could be utilised as priority parking spaces for people with special accessibility needs. The ability to select suitable parking spaces and to not take up spaces that would be better suited to someone else's needs was important to participants. Participants felt that a tailored booking system where they have control over which space they book would make DIVVY Parking at Liverpool a more equitable service.

In the stakeholder focus group, DIVVY representatives reported that it is possible to categorise users and car parking spaces in an "almost infinite number of ways". However, for DIVVY, it is much harder and less financially viable to make substantial changes to the app's user-interface to give priority parkers more control over the spaces they can select and book.

I mean if there was a need to write it into the app or make it variable by the user, then I guess it's possible, we'd have to look at it but we're very careful about what kind of critical detail like that can be user changed. (Stakeholder)

A University stakeholder suggested not being allocated a parking bay number at all as a "good interim solution while DIVVY investigates the financial feasibility of building in those filters for each individual before they book a spot" (Stakeholder Focus Group Participant). At the time of writing, DIVVY had moved to no longer allocating specific parking bays.

4.4: RECOMMENDATIONS

1. Western Sydney University should provide formal assistance and clear onboarding steps to support the digital literacies of those students and staff having difficulties locating, downloading and using the DIVVY app.
2. The DIVVY website should be promoted clearly to allow students and staff who are not comfortable with the app to use an alternative booking service.
3. At the start of semester, when large numbers of new students are commencing University, a car parking attendant should be posted at the entry and exit of the Liverpool City Campus to assist new car parking users and to ensure a safe car parking experience.
4. Work should be completed to ensure QR readers do not require unsafe driving practices to access, and are easy to reach with a phone for a variety of users. Alternative technology, such as number plate readers, could also be considered.
5. The car park should have at least a ten-minute grace period for early entry to avoid congestion at the car park entrance.
6. Car parking spaces should be allocated to priority parkers based on individual accessibility needs. DIVVY's potential to sort and separate users by groups should be utilised to assign spaces on a needs basis (e.g. a group that needs wider spaces, versus a group that needs to be closer to a lift).

“ I grew up nearby. I would say it’s not fun being on those trains, especially the later you get at night... (Staff)

4.5 THE NEED FOR SAFE AND DIVERSE TRANSIT OPTIONS

What I’m saying is that it’s not a nice place to be.

(Staff member talking about Liverpool City)

User focus group participants raised a number of safety concerns about travelling to and from Liverpool City Campus. In addition to those specifically related to the basement car park (see section 4.6 ‘Designing for Safety’), participants also identified general concerns about the safety of transit to campus in general. The fear of moving through the area, and catching public transport, particularly at night and for women, not only serves to reinforce a car travel culture, but also highlights the importance of providing priority parking for people who might be particularly vulnerable.

Fear of crime and negative perceptions of Liverpool as a place more broadly heavily framed participant transport preferences and choices, contributing to fears of using public transport to get to campus.

I grew up nearby. I would say it’s not fun being on those trains, especially the later you get at night. There’s nearby, you’ve got any number of brothels, there’s the methadone clinic, there’s some pretty dodgy businesses running around there of a night time. (Staff)

Participant experiences of using public transport to access campus emphasised the need for priority parking on-site at Liverpool City Campus. Parking in the basement was seen as more safe than using other car parks such as the Westfield shopping centre, which felt unsafe as they required a longer walk, as well as being “quite dark” (Student) and feeling “dangerous at night” (Staff). The distance between campus and the Liverpool train/bus station further highlighted the need for on-site priority parking and for a shuttle bus service between campus and the public transport hub.

You have to walk up to that station in the dark and last year what really annoyed a lot of us is that the person running the meetings, it’s only a ten-minute walk but it’s like ten-minutes for you not carrying anything, it’s a 20-minute walk for someone like myself whose got a laptop and a handbag and a bloody lunch bag and a trolley to carry and you know, that’s a considerable safety concern that a lot of us have as women as well. (Staff)

As the participant notes above, safety concerns around public transport use are more acutely felt by women. Furthermore, public transport was reported as inaccessible and unsafe for people with disabilities, particularly when they have walking aids. The congestion, design and travel practices on public transport are not conducive to the needs of people with disabilities.

It’s mental, people push and shove to get into the doors and like it’s really full on. So a lot of people or students with disabilities haven’t had really good experiences with public transport, especially with walking frames as well, that can become an issue. (Student)

4.5: RECOMMENDATIONS

1. In line with other campuses, Liverpool City Campus should have a designated shuttle bus service to and from public transport stations.
2. The University could work closely with Liverpool City Council on projects that address negative perceptions of safety in the city. This could include research into improving safe transit to, from and within the city.

4.6 DESIGNING FOR SAFETY

With regard to the safety of the basement car park, participants expressed concerns about the shared entry/exit with the Westfield shopping centre. A pedestrian crossing runs the length of the entrance/exit to the car park, which makes entry/exit challenging (also see Section 4.4 'Designing for Accessibility'). Safe entry/exit is compounded when a driver needs to make a right-hand turn onto George Street to leave, as drivers have to cross both the pedestrian crossing and a busy lane of northbound traffic into the equally busy south lane. In addition, before reaching the Westfield exit, drivers exiting the Western Sydney University car park, must merge with traffic coming down an exit ramp from the shopping centre. There are a number of blind spots created by pillars and car park infrastructure which result in a difficult merging procedure. Focus group participants with physical impairments reported that it was particularly difficult for them to make this merge given the number of blindspots. The exit speed of vehicles down the shopping centre car park ramp varies, adding to the complexity of joining the lane. The experience of entering and exiting the basement car park was described as "dangerous" and "scary".

Once inside the basement car park, there is a sense of isolation, darkness, and disconnection, which is amplified by the lack of mobile phone signal and WiFi access. If there is an emergency or help is required, car park users need to be close to the entry/exit to notify someone and call for help. Participants pointed out that there does not seem to be a process in place or an emergency response system to help people should they require assistance in the car park.

The only thing about downstairs is that there's no emergency button, so you have to wait for the lift, if something happened you would have to wait for a lift to get back up to security ... (Staff)

Participants were unclear as to who to call for help in an emergency and conversations were had as to who would be most responsive - campus security or DIVVY. The lack of signage in the basement contributes to not knowing who to contact in an emergency situation. Participants were also unsure if they were being surveilled in the car park by CCTV systems. What added to feelings of being safe was the inability of building users to go down to the basement car

“ It's scary ...
I've been quite scared
trying to get out of there
and with apologies and
trying to negotiate and
thank yous. (Student)

park via the lifts. Although having to ask campus security (based at ground floor reception) to provide access to the basement floors via the lift was time consuming and inconvenient for car parkers, any inconvenience was willingly compromised for a more securitised car park and the alleviation of some of the safety issues raised.

I think it's a security thing [asking security staff at ground floor reception to give lift access] that stops anyone going down there and when you're going down there at six o'clock at night it's dark because the lights aren't on until you step out [of the lift]. (Student/Staff)

I prefer them [security] to be buzzing me down. (Student)

In general, car parks are considered unsafe places to be, particularly for women (Loukaitou-Sideris, 2014). As such, some participants would rather avoid using the car park all together and instead use a designated pick-up/drop-off point immediately outside the campus in the line of sight of the security desk (see Section 4.3 'The Need for a Drop-Off/Pick-Up Point'). Given the closer proximity, parking in the same building provides a greater sense of safety than parking in nearby car parks such as Westfield shopping centre. The basement car park, while feeling unsafe due to its isolation and darkness, felt safer for participants in contrast to walking over to Westfield to return to their vehicle, especially at night.

Safety while travelling to and from campus is a major concern that extends beyond priority parkers (who feel safest when able to park on campus) to others who park in nearby locations as well as those that travel by public transport (see Section 4.5 'The Need for Safe and Diverse Transit Options'). Safety concerns were gendered (women expressed greater concerns about their safety), and amplified in the evenings, at night time, and by the darkness of the basement car park.

4.6: RECOMMENDATIONS

1. Physical design changes should be made to the basement campus to enhance feelings of safety and security (e.g. more lighting and security cameras).
2. Introduce clearer signage throughout the car park so people know who to call if there is a problem, or how to access the help button.
3. A panic button should be installed on each floor at a height accessible to everyone (including children and wheelchair users).
4. Phone and WiFi reception should be enhanced to ensure people using the basement car park can use their personal devices to call for assistance if required.
5. Western Sydney University should work with Westfield and Liverpool City Council to install pedestrian and traffic lights at the entry/exit to Westfield for pedestrian and driver safety.

4.7 INEQUITY ACROSS MULTIPLE PARKING SYSTEMS

To park at Western Sydney University suburban campuses, staff and students are encouraged to purchase a parking permit through an in-house parking permit system (half-yearly and annual permits), or a daily parking ticket from an on-site machine. Buying a permit is much more affordable than paying for parking on a daily basis. However, Western Sydney University parking permits cannot be used at its vertical campuses (Parramatta City and Liverpool City) due to the limited availability of parking at these sites. Furthermore, the Liverpool City Campus parking solution to outsource car park booking to DIVVY creates two parking systems that are separate and difficult to integrate with one another. As such, students and staff who are required to access more than one campus often need to engage with multiple parking systems, and face additional costs in doing so.

Priority parking is free for students with disabilities, therefore they are not impacted by additional costs when

using multiple campuses. However, staff with priority parking pay \$1 per hour to park with DIVVY at Liverpool City Campus. Participants argued that paying by the hour for car parking is better suited to students who only need to be on campus for 2–3 hour classes. Whereas paying by the hour for parking with DIVVY at Liverpool City Campus is not working well for professional staff who are required to be on campus for full days. Professional staff felt doubly disadvantaged, given the greater likelihood of them also earning lower incomes, when compared to academic staff, and having no option to work from home.

I has been brought up a few times that the people who have no choice in their hours and what days they're here also earn the least. (Student/Staff)

The cost inequity felt by professional staff impacts their booking practices. While a key benefit of having priority parking is the ability to book in advance, professional staff are not taking advantage of this due to the need to break down parking costs into more manageable payments:

I book as I go ... it's hard to book ahead. I mean you can cancel it [DIVVY booking] but I think it's also if you book it daily, the money comes out slowly, doing it weekly splits up the bill. (Staff)

Participants also felt that the half-hour booking time deviations used within the DIVVY system do not work well with campus user schedules. For example, if a staff member starts work at 9am and finishes at 5pm, the DIVVY system requires them to book from 8.30am to 5.30pm. Bookings can

“ It's like \$1,800 a year it's costing me compared to like \$250 a year that it used to cost, like that's a dramatic cost. (Staff)

only be made in one hour blocks, and the system does not allow for early entry, and automatically charges an additional hour for late departure. Overall, the design of the current car parking system at Liverpool City Campus generates inequity felt most acutely by professional staff, especially those who have to be on campus for full days, are on lower incomes, and are required to use multiple campuses.

Focus group participants advocated for “some kind of offset” to compensate for the economic inequity that professional staff members are facing. Within the stakeholder focus group, one participant was keen to point out that this equity issue was not specific to Liverpool City Campus but was also impacting staff at the Parramatta City Campus, where parking costs can be upwards of \$20 per day. As such, the University’s strategy of moving to vertical campuses in CBDs needs to better redress any inequitable mobilities being designed into University life from the outset. It is important to note that since the time of focus group data collection, some of the cost inequities experienced by staff particularly, have been addressed. There was consensus within the stakeholder group to ensure that priority parking is not only available and accessible, but also affordable.

We do know that there are a number of people who just can’t use public transport because of their circumstances, where they live, their childcare responsibilities, and I think when those are our professional staff who are there every day, if we can take steps to make their lives easier and more affordable, we should take those steps.

(Stakeholder)

4.7: RECOMMENDATIONS

1. Continue to evaluate Western Sydney University’s different parking systems to ensure an equitable cost structure for staff and students, noting professional staff are the most adversely impacted by the new systems being designed for vertical campuses.
2. DIVVY could change their one-hour booking time deviations to 30 or 15 minutes, while retaining a one-hour minimum booking time.

“ It’s the quick teaching. It’s the nowhere to breathe. Students are thrown in quick, quick, and out. (Staff)

4.8 A FAST PACED, IN-AND-OUT CAMPUS

The car parking system sits in the broader context of a vertical campus located in a busy, urban setting with the accompanying temporalities of fast paced city life. User focus group participants discussed their faster paced experiences of the Liverpool City Campus and it was observed that students are structuring their course work and their time in classes around a three hour window (often to align with free parking available in the adjacent Westfield shopping centre). This often means students arrive late for classes, leave classes early, and leave classes quickly when they finish. Such time regimes are changing the practices of being a student and the experiences of student life.

I just don’t hang around. I’m not mentally or physically encouraged in my mind to do so. (Student)

If the goal is to create a fast-paced, in-and-out campus, then the kind of parking system where you book as you need it functions well. However, if the goal is to create a ‘hang around campus’ where people stay longer, use the building and surroundings, and build a sense of community and belonging, then hourly paid parking is perhaps counterproductive. Students reported coming into campus for the “bare necessities then gone” and staff reported that “trying to keep people here is a bit of an issue”. When asked what type of campus and associated rhythms and uses are being encouraged at Liverpool, a University stakeholder reported that the aim is to create:

a fast-paced, in and out of the building but within a precinct, hanging around, I’m pretty good with that.
(Stakeholder Focus Group Participant)

While a fast-paced campus might be desirable and preferable for certain students, students in the user focus groups spoke about how the city campus is overwhelming some students, especially those with a disability.

A disability advisor reported that “this environment has been triggering a lot of students”. These experiences have been noted and calm spaces have been created on campus such as ‘the spoon room’, a comfortable space for people experiencing stress or anxiety to retreat.

It is important to note that experiences on Liverpool City Campus were often understood in relation to, and positioned against, experiences on other campuses. As a “high impact campus” (Staff), Liverpool is experienced very differently to the University’s peri-urban campuses such as Campbelltown where the nursing students relocated from, and the suburban Bankstown campus to which social science students were accustomed. At Liverpool, in comparison to the green grounds of Bankstown campus, “you don’t get that sense of calm around the building here ... even when you go out, you know, it’s frantic” (Student). Difficult to access via public transport, Bankstown campus is more accessible by car and therefore has much car parking also available on site. Parking also takes a vital role in ensuring the Liverpool City Campus is an accessible and inclusive space for people with disabilities. Priority parking is essential for reducing the number of barriers that people with disabilities experience when coming to campus.

It’s just that there’s a lot of barriers to getting in and out of this building and a lot of them for people are just overwhelming, it’s just too hard for them to get around, they just don’t come. (Staff)

One student in the user focus groups told us they had not previously known about the basement car park until a lecturer mentioned it at the end of their second semester. The student had been choosing to work from Campbelltown Campus instead as they were concerned about having difficulties with parking in the Liverpool CBD.

4.8: RECOMMENDATIONS

1. Increase the diversity and safety of transport options (particularly in the evening) to allow students to spend more time on campus, without feeling rushed.
2. Ensure all students who require priority parking are aware of the basement facilities, and are provided with access. This will allow students with diverse accessibility needs to access campus more frequently and for longer.
3. Western Sydney University should continue to design calm spaces within the building such as ‘the spoon room’. However, a discussion should be had about changing the name of the room as the term ‘spoon’ can carry very different connotations than the intended use of the room. This could exclude people from using the space.
4. Western Sydney University should work with Liverpool City Council to develop the ‘hanging around’ precinct, and to ensure that this caters for diverse needs.

4.9 THE CAR PARKING CONUNDRUM

If you advertise this [DIVVY parking] to all students, you’re going to be overwhelmed downstairs. (Student/Staff)

Somebody like myself [with caring responsibilities] will miss out if it’s just open to everyone. (Staff)

During data collection, the basement car park was underutilised and participants reported that there were often many empty spaces when they visited Liverpool City Campus. Underutilised car parking is an issue for the University as basement levels could be repurposed as further teaching spaces, which are in high demand and operating at full capacity.

While there was support to widen definitions of who is prioritised for parking, concerns were raised about the impact of increasing publicity about the basement car park.

Those who use the priority parking service reported that the car park was never busy enough to require advanced booking. A busier basement car park may act as a barrier to attending campus for those with priority parking needs.

It would be very difficult for me as a PhD student, I don't have set classes and times, to fight with every other student to get a parking spot. If I'm going to go through all of this hassle for priority parking, I expect that I would have a priority spot. (Student)

Similar concerns were shared by members of the stakeholder focus group, particularly in relation to widening priority parking to encompass those with caring commitments:

I think everyone in the room is agreeing that we should definitely do something like that [extending the priority parking to include people with childcare commitments]. But [we need] a control to make sure that the system isn't abused ... so that's probably what would be really helpful, if we did think about how do you deliver the university's accessibility promises without setting up a system that is almost a complete labour on the staff that are in disability services and in welfare services, and that it [priority car parking] doesn't get abused. (Stakeholder Focus Group Participant)

Concerns about creating a car parking system that can be abused (also see Section 4.2 'Widening Priority'), and burdening those who manage it, may be countered by the community-orientated practices being supported and encouraged in the user focus groups. There was a 'pro-social' relationality between priority students and staff. Priority parkers did not want to take a parking spot from someone who needed it more than they did (see Section 4.4 'Designing for Accessibility').

The key issue for people with disabilities and caring responsibilities is that they want to feel prioritised by the University and therefore priority parking needs to be structured in a way that actually prioritises them:

... The difference ... between priority parking and normal parking ... t's just a slight advancement on days you can book ahead, it's not really saying you're a priority person. (Staff)

The main benefit of having priority parking is being able to book a space in the basement car park 12 days before any other car park users. However, this is not proving helpful or giving a sense of feeling prioritised for the following reasons:

1. Staff members who have been given priority access due to caring responsibilities cannot afford to book parking 42 days in advance.
2. It is difficult for staff and students to predict their movements 42 days in advance. Additionally, as people are frequently required to travel between campuses, being able to book in advance is not particularly helpful as schedules cannot be predicted so far ahead.
3. At present, the car park is underutilised and advanced booking is unnecessary.

While an underutilised car park with an advanced booking system is functional, the priority parking system is vulnerable if use of the car park changes. The car park's accessibility to priority parkers works as it is underpinned by an informal understanding that the car park is solely for priority parking. In actuality, anyone with a university email account can book a space in the basement car park. There is much tacit knowledge around the DIVVY service and its use within Liverpool City Campus depends on it. User group participants were concerned that they may struggle to park if the basement parking was more widely advertised. In such a case, advanced booking would become necessary, but problematic for the reasons outlined above.

As such, the priority parking system needs to take into account the parking practices of non-priority users as well as the parking options that surround the Liverpool campus. For example, many students are using Westfield shopping centre parking as it provides three hours of free parking, rather than pay one-dollar per hour for DIVVY basement car parking (although this is not a viable option for many of those seeking priority parking due to mobility restrictions). As a stakeholder pointed out, the perspective on parking needs to broaden out beyond the basement to consider how the University can activate the parking spaces surrounding the campus:

We've got to be really careful about not getting caught up in how can we get more people down into the car parks [when] someone who's actually desperately in need can't get a spot. Instead we go 'how can we get more people to use the spaces that are around us here that by virtue of us moving to Liverpool CBD are available to us that wouldn't have been elsewhere?' (Stakeholder Focus Group Participant)

A useful reminder here are the calls noted earlier for a drop-off/pick-up point outside of the campus to ensure people with disabilities have as much access to the campus as possible (see Section 4.3 'The Need for a Drop-Off/Pick-Up Point') should the basement car park become busy and reach its capacity in the future. Overall, there is a strong need to learn more about the ways in which students and staff with a disability and those with caring responsibilities travel to and from campus. There are data gaps around the ways in which people journey to campus, but also in how people are using the University's campuses for studying, working, socialising, and other activities. With greater insights into student and staff travel journeys and campus experiences, the better the provision of priority parking will be, as will the University's contribution to sustainable forms of travel and more equitable mobilities in the western Sydney region.

4.9: RECOMMENDATIONS

1. DIVVY and Western Sydney University should re-evaluate the advanced booking option as the main benefit of priority parking and consider other priorities.
2. To ensure priority parking is beneficial to those who need it, the priority car parking system must be designed in the context of surrounding car parking options suitable for non-priority parkers.
3. Car park usage should be monitored to ensure that priority parkers continue to have priority parking access.
4. Western Sydney University should improve data practices to better understand how students and staff use, and travel to and from, the campus.





5. CONCLUSIONS

The research outlined in this report aims to enhance the design and application of DIVVY's car parking platform at Western Sydney University's Liverpool City Campus, with a specific focus on its delivery of priority parking for people with disabilities and/or caring responsibilities.

As university institutions change the way they deliver higher education, it is important that research critically assesses the impacts of these changes on the work and study practices of people with disabilities and/or those with caring responsibilities. The quest for sustainability often underpins the physical design changes made to university campuses (including the construction of new buildings in new locations) (Kaplan, 2015). It is therefore important that such developments centre the access needs and mobilities of people with disabilities and caring responsibilities to avoid furthering any disabling effects of mainstream society.

Western Sydney University Liverpool City Campus' priority parking system is a much needed service for people with disabilities. It provides people with specific access needs, greater accessibility to the campus, enabling them to participate in university life. However, gaining access to priority parking at Liverpool City Campus has proven challenging for some people who require it; and this has been an experience not dissimilar to difficulties fulfilling other access requirements in their everyday lives. The need to self-advocate is a feature of life for people with disabilities, however, not everyone with a disability has the ability to self-advocate. More importantly, the need to self-advocate for aspects of life that are provided to others, can cause unjust stress and harm. There is a need to enable staff to better support students who struggle with self-advocacy, and a need for systems that reduce the already heavy burden of labour applied to people with disabilities to access the services they need.

Calls for widening priority parking to those with caring commitments have been well championed by staff and students alike. It is important that disabilities and caring responsibilities are not defined by a person's capacity to provide evidence as proof of their priority need. Disability services play a key role in using their expertise to advocate

for, and approve, priority parking for those in need. The advertising of priority parking at Liverpool City Campus needs to keep pace and ensure that those in need can find out about priority parking and apply for it easily.

When designed with disabilities in mind, technologies such as mobile apps and car parking systems can be more accessible to all. There is a strong need to streamline the onboarding process to using DIVVY Parking at Western and ensure those who experience digital literacy issues have support and options to book parking made available to them. The physical design and the layout of the car park itself is far from ideal. More could be done to improve the accessibility of the car park and technology has a key role to play in ensuring car park user's safety, particularly at the entry/exit.

Going into the future, there are some concerns around the car park becoming too busy so much so that the main benefit of priority parking – that of advanced booking – becomes more important. Right now, with an underutilised car park, advanced booking is not particularly helpful nor seen as particularly prioritising. There is a balance to be struck between ensuring priority parking is always available for those in need, but also ensuring that the car park is more activated as a space in use. Achieving this balance will require an ongoing commitment to review the car parking system by Western Sydney University and DIVVY Parking stakeholders.

Universities make a significant contribution to the fabric of the places in which they reside. Safety concerns about traveling to and from campus are shaped by negative perceptions of Liverpool as an unsafe place to be. Western Sydney University could work with Liverpool City Council to activate spaces and encourage students to 'hang around' more in the precinct. Travel options including car parking but also public transport have a key role to play in making Liverpool a place people want to stay.

A vertical campus in an urban location might at first appear more accessible given the closer proximity of public transport infrastructure. However, the everyday experiences of people with disabilities and caring responsibilities are far from conducive to public transport use. Without significant change, redesign and funding, public transport is unlikely to be able to meet the needs of people with disabilities and caring responsibilities travelling to Liverpool campus in the near future. A successful collaboration with Liverpool City Council for a drop off point outside the Liverpool City Campus would make a significant contribution to ensuring Western Sydney University's transition to vertical buildings in urban centres is inclusive of people with disabilities.

Finally, it is important to better understand the ways in which people are using Western Sydney University campuses and how they are travelling to and from campus. To create a smarter, more equitable car parking system in the future, a data-informed approach to campus development and strategies for inclusive higher education can go some way to ensuring priority parking remains there for those who need it the most.

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