



Accessible and Sustainable Transport

Overview

In this factsheet we discuss sustainable modes of transport including walking, cycling or public transport. To encourage uptake of sustainable transport, the built environment must provide easy, accessible connections between buildings, walkways, cycle paths and public transport stations. However, research indicates that access to sustainable modes of transport does not necessarily guarantee use. Transport mode choices have been linked to other factors, besides accessibility, including perceptions of convenience, practicality, safety, comfort, individuality and cost [1] [2] [3] [4].

Liveability benefits of accessible and sustainable mobility include:

- Health benefits from greater activity involved in walking or cycling to destinations or public transit stops
- Health benefits from reductions in local air pollution produced by vehicle exhausts
- Reductions in greenhouse gas emissions.

Walkability has been defined as “the extent to which the built environment supports and encourages walking by providing for pedestrian comfort and safety, connecting people with varied destinations within a reasonable amount of time and effort, and offering visual interest in journeys throughout the network” [p.248, 5]. Therefore, issues such as comfort, safety and time-efficiency must be taken into account when designing for accessible and sustainable mobility.

Dependence on private cars has been linked to loss of urban qualities such as walkability and efficient public transport [6].

What Our Findings Revealed...

Transport Accessibility

CAR-OWNERSHIP AND USE

WALKABILITY

CYCLING

PUBLIC TRANSPORT

- Time-efficiency
- Seamless Journey
- Destination / Purpose of Journey

Transport Accessibility

In the QUT High Density Liveability Study, the overwhelming majority of respondents (93%) 'somewhat agreed' or 'strongly agreed' that it is easy to walk to a public transport stop from their home and 91% 'agreed' that there are footpaths on most of the streets in their neighbourhood. Approximately 90% of respondents 'agreed' they felt safe walking or bicycling in their neighbourhood during the day, yet only half agreed they felt safe walking or bicycling at night. Interestingly, approximately two thirds of residents decided to live in the area because of public transport (64%) and because of accessibility (footpaths, bikepaths) (61%).

Car ownership and use

Car-use emerged as the preferred travel mode for many journeys, especially visiting friends and relatives (80%), going to the supermarket (78%), accessing medical services (63%) and the chemist (56%). Over half (57%) of the households surveyed owned one motor vehicle, 24% owned two vehicles and 11% did not own any vehicles. Of those who owned a vehicle, the majority (95%) drove a car as their main vehicle. When respondents were asked to indicate how many days they had driven in a motor vehicle in the past seven days, approximately one third indicated they had travelled in a motor vehicle every day, while only 8% had not been in a vehicle at all. In the seven days preceding survey completion, the average amount of time spent per day in a motor vehicle was one hour. Qualitative interviews allowed exploration for reasons why car-use may have been the preferred mode choice for certain destinations.

I pretty much use my car about, well, on the weekend the most and then, on weekdays, probably three weekdays or weeknights a week. I do a dance class and play touch footy and do tennis. So the three nights that that's on I'd be using my car and then for shopping and whatever. But it doesn't get a lot of use during the week, but, I probably wouldn't do away with it because I think that would really limit my ability to do these other activities.

Walkability

Walking was a common mode choice for various types of journeys, with almost 70% of respondents walking within the past day, 24% within the last week, and 4% within the last month. Residents would commonly walk to restaurants (71%), recreational facilities (61%) and the newsagent (61%). It can be assumed that these facilities are within the residents' local area. The reasons walking was preferred for reaching certain destinations was further discussed in interviews and included factors such as ease of access to local services, enjoyed sense of community and, for some, reducing environmental impacts.

I love the idea of walking through Southbank and you look up at the end of the Southbank gardens and you see all those high-rise developments... So the whole notion of some sort of built environment that incorporates parklands, greeneries, walkways, bike ways, restaurants, village type atmospheres within a city area, I really, really like the sound of that because when people have that sort of amenity um, it tends to contribute to a relaxed lifestyle. But people don't have to travel too far to get things they need in order to live, they might choose to but they don't have to.

Changes residents would like to assist walkers included more lights on path/trails (53%) and streets (50%), and more safety patrols (47%). In addition, respondents wanted to see footpath maintenance, more controls over cyclists, drinking taps, driver courtesy and traffic calming. Unmaintained footpaths, restricted pedestrian crossings and safety issues were also mentioned in qualitative interviews as undermining the walkability of an area.

Racecourse Road is easy to get to [but] that's offset by the traffic ... monster trucks... They set the traffic lights for pedestrians so that you've almost got to run across because they're trying to keep the traffic moving down Kingsford Smith Drive. Older people just can't move quickly and so it's a bit dangerous being a pedestrian and crossing the road from here to the other side.

In order for me to get from my house when I walk on Gladstone Road, the footpath on Gladstone Road is quite literally three feet wide. And it's a major arterial road. Traffic, buses, trucks roar up and down that road. And the council has not done a very good job at maintaining the footpaths. It's quite badly undulating and because it's mainly bitumen, there's pot-holes in it, there's tree root ridges on it. And it is really not a good walk way.

Some interviewees suggested they avoid walking in certain areas due to personal safety issues, especially at night. Gender differences were evident in perceptions of how safe it is to walk the streets of inner-city precinct at night.

I: And do you ever walk at night around West End [inner-city suburb]?

P: Yeah, I would walk down to Boundary and I'd have no problems walking down that way. I don't walk home by myself after say six thirty from the city [to my] home. I guess it's just that extra bit of caution that I take to avoid any possibility of anything happening. Not that I've ever felt threatened or have ever seen anything but I am aware that there are some pockets that are pretty isolated and I just don't want, it's not worth the stress of [it]. (female resident).

Walking around the streets at night I do, coming back from the cinema, it's just dead quiet. After ten o'clock at night, the amount of traffic on the road is significantly less, so there's hardly any traffic noise, surprisingly. So yeah, there's just this feeling of peace and quiet and safety (male resident).

Interviews and public observations indicated people's tendency to form direct routes to their destination rather than take paths that were perceived as out of the way. The following interviewee indicated he often jay walks across a busy road to get to his bus stop rather than walk down the road and use the designated pedestrian crossing lights.

P: We usually cross straight across when we want to get the bus. The bus stop is underneath the hospital but if we are going to Southbank or Woolloongabba we go where the lights are. ..but when it's the bus [we're trying to catch] we dash right across. We join the crowd of thousands going to the medical centre ... there is a pathology and medical centre there. That's really busy, there [are] people charging over that road.

I: Has it caused any trouble? Any accidents?

P: There would be an accident, but I am not witness to a pedestrian accident there. You get a few push bike accidents, push bike riders going against the traffic flowing down the footpath here. ... I have seen a couple of bikes get collected by cars coming out of the drive way. ...the bikes don't tend to stop unlike pedestrians).

Cycling

Cycling was not a common transport choice in our sample, with approximately two thirds of survey respondents not riding a bicycle. Despite the low proportion of regular cyclists in our sample, respondents were generally satisfied that their neighbourhood was designed for making bicycling safe (43% satisfied while 21% were dissatisfied). Interview data provided additional insight into factors that influence cycling, including sustainability and health motivations of this travel mode.

I bike-ride to work. I work in the city so it's only 4kms to my work. So I bike-ride to and from work. Keeps me fit and healthy, reduces the carbon footprint and all that sort of stuff. It's been very, very convenient.

Changes respondents would like made in their neighbourhood for bicyclists included, over half wanting more paths (55%), more bike lanes (54%) while 46% believe that bikes should not be allowed on footpaths. Other changes the respondents would like to see made included: bikeway maintenance, barriers between bikes and traffic, bike parking areas, compulsory bell sounding, bike tunnels and pedestrian education.

Public transport

Residents reported high satisfaction with public transport in their neighbourhood. Survey findings indicated 80% of respondents thought public transport was available and convenient from their residence. However use of public transport was limited to certain destinations and locations. Interview findings further contextualise the survey results and suggest how travel mode choice was largely affected by perceptions of convenience related to time-efficiency, seamless journeys and journey destination or purpose.

Time-efficiency

Generally public transport was favoured for trips into the central business district where it was perceived as a more time-efficient mode. However, trips out of the central city area often relied on car-travel because it was seen as more time-efficient in comparison with public transport options.

I've got two jobs and three days I work in the city and I catch a bus and the other two days I work at Milton and I drive. I used to catch the bus because it's much better for the environment and I like the time having a read but the buses coming home were getting later and later and sometimes it would take me over an hour to get home, so now I drive to Milton.

(Use public transport) only to go to the city. If I go shopping I'll get the car. But if I go to the city, it's easier. It takes about 15/20minutes by bus, and about half an hour by ferry/citycat.

Seamless journey

Residents indicated a desire for seamless journeys that did not rely on a combination of modes to reach their destination. Satisfaction with public transport decreased if residents had to rely on more than one mode (e.g. two buses, bus and train), transfer to other services or wait for transport. To encourage public transport uptake, journeys need to be seamless with limited disruption from start to end of the trip.

The hospital where I work is a ten-minute drive and it's an easy drive [5km from dwelling]... The bus takes an hour to get there, that's the worst thing. If you go by bus you have to take two buses... It used to be a direct link from here, which it should be because a lot of older people still live here and need to go to the hospital.

Destination and purpose of journey

Another significant factor that influenced travel mode choice was the destination of the journey. As explained above, residents reported often using their car for shopping trips and visiting friends and relatives out of the local area, while public transport was commonly used for trips into the city. This may be related to time-efficiency.

I suppose what's not great is there's not that many local shops, so if you do have to go and do grocery shopping, you've got to get in the car and get somewhere. Public transport is not that crash hot if you don't want to go to the city. If you want to go across town, or maybe to Fortitude Valley around that way ... public transport's pretty poor from that perspective because you don't get any buses stopping around this area, you've got to walk up to the hospital or go up to, up to the 'Gabba to get any transport.

Recommended Guidelines

The following table presents practical suggestions for Residents, Local Authorities, Designers and Developers for ensuring the community has accessible and sustainable transport systems, including walking, cycling and public transport.

	Residents	Local Authority	Designer	Developer
Ensure location of high-density dwelling is close to and has good connectivity with well designed walking, cycling and public transport infrastructure; Ensure design of bike paths/ pedestrian pathways/night lighting is in accordance with desired/high frequency patterns of movement		✓	✓	✓
Ensure adequate spaces for residents' bicycle storage; Consider reducing the number of car park spaces for residents in favour of bicycle storage spaces and lower selling price for dwellings without dedicated car spaces			✓	✓
Arrange to walk with friends/colleagues to increase perception of safety	✓			
Ensure adequate shade provision, lighting and safety along shared cyclist and pedestrian pathways		✓		
Ensure adequate pedestrian crossing connecting major activity centres		✓		

(e.g. transport stops and shopping precincts). Provide safe mid-block pedestrian crossings, as well as crossings at intersections.				
Improve public transport service frequency and scale to match load and connect places outside of city area		✓		
Support educational campaigns to present public transport as a time-efficient travel choice		✓		
Contact authorities to inform of necessary maintenance of pedestrian and cycle ways	✓	✓		
Consider car-pooling if need to use car to travel outside of local area (e.g. join with neighbour for shopping trips)	✓			
Encourage car sharing (short-term car rental) and ensure facilities support this (i.e. accessible pick up and drop off car park spaces)	✓	✓		
Promote cycling and walking as healthy and sustainable travel modes		✓		
Provide rate relief for residents who forgo private vehicle		✓		
Consider the needs of people with a disability, the elderly and those who rely on walking and public transport.	✓	✓	✓	✓
Prioritise desirable climatic conditions for urban open spaces and pedestrian pathways including shelter from 'wind', rain, and summer sun, and access to winter sunshine. Where possible, the main pedestrian movement routes should run on a north-to-south alignment. Utilise arcades, overhead shelter awnings and substantial shade trees.		✓	✓	✓

Further Information

Transport Plan for Brisbane 2008-2026 – Strategic Objective 6: More Clean and Green Personal Transport

http://www.brisbane.qld.gov.au/BCCWR/_assets/main/LIB528/OBJECTIVE6_GREEN_TRANSPORT.PDF?xml=/BCC:PdfHitXml:svDocNum=9

Green Heart CitySmart “Sustainable Transport”

http://www.brisbane.qld.gov.au/BCC:BASE:1401984725:pc=PC_2651

Easy Steps A toolkit for planning, designing and promoting safe walking, by Queensland Transport, 2005.

http://www.transport.qld.gov.au/Home/Safety/Road/Pedestrians/Easy_steps/

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