



Transport Impacts of New High-Density Housing

Critical Policy Brief

Jewell Station development
Image provided by Neometro

This briefing draws upon the expertise of RMIT's transport and housing research community to inform policy makers and the wider community on critical opportunities for managing the transport impacts of new high-density housing.

Approvals for high-density housing in Australia have risen steeply, with the number of new apartments constructed each year tripling since 2009.¹ In the last five years, apartments accounted for around 40% of all residential building approvals in Melbourne.² This has significant implications for transport and urban planning, including effects on road congestion, car parking, and overcrowding on public transport.

Key Messages

- ▶ While growth in high density housing puts more people closer to jobs and services, it also increases road congestion and overcrowding on public transport services
- ▶ International best practice in planning for high density housing includes setting a noncar travel target of at least 80%
- ▶ A shift from 'minimum' to 'maximum' car parking requirements in high density housing developments can reduce car use and improve housing affordability
- ▶ To avoid car dependency in new precincts, safe, accessible and reliable public transport infrastructure needs to be established concurrently with new housing.

Overview

Over 2.5 million Australians live in apartments – over three-quarters of these in the cities of Sydney, Melbourne and Brisbane where transport pressures are greatest.³ While medium and high-density development supports housing growth in established areas close to jobs and services, it also has a significant impact on road congestion, exacerbating the problems associated with car dependence.

Victoria's Transport Integration Act recognises that land use and transport planning are interdependent, and that transport infrastructure and services should be provided in a timely manner to support changing land use patterns and associated transport demand.⁴ This policy brief focuses on three aspects of planning and transport infrastructure provision that can help reduce the transport impacts of high-density housing: "right-sizing" car and bicycle storage facilities in new high density developments; promoting mode shift from cars to other forms of transport; and integrating transport infrastructure provision in new precincts.

"Right-size" car and bicycle storage facilities in high density housing

The provision of car and bicycle storage facilities in high density housing has a strong influence on residential travel choices. Car storage also uses considerable space, limiting opportunities for affordable housing, while bicycle storage is often undersupplied.⁵

The use of 'maximum' rather than 'minimum' car parking requirements can better facilitate "right-sized" car storage facilities, placing a cap on the number of spaces required. In London, for example, car parking supply reduced by approximately 40% when requirements changed from a minimum to maximum standard.⁶ Lower maximum standards are also specified in areas with access to high quality public transport.⁷

The introduction of maximum car parking requirements in London reduced new residential car parking supply by 40%.

Car sharing facilities can be incorporated within high density housing developments, with access also provided for non-residents. In the United States, each car sharing vehicle has been found to account for 9 to 13 fewer privately owned cars.⁸

Bicycle storage facilities should cater for current and future demand and a range of bicycle types (e.g. cargo, electric), with at least 50% of spaces ideally provided at ground level. In designing new high density housing, electric charging should be made available for both bicycles and cars.

Shift transport modes

It is important that higher density developments provide options for alternative modes of transport to cars. Alternatives such as public transport, cycling and walking both alleviate road congestion and improve health outcomes.⁹ International best practice in higher density development is to aim for at least 80% non-car travel. Non-car trips in Greater London are projected to increase from 65% to 80% by 2041.¹⁰ San Francisco has set a non-car travel target of 80% by 2030 and New York is on track to achieve this outcome by 2050.¹¹ Australian cities could pursue a similar target, supported by planning for alternative transport modes around new higher density developments.

Infrastructure for alternative transport modes should aim to provide commuters with easy, reliable and safe access to places of employment, services and recreation. Public transport, bicycle and walking infrastructure is best provided before an area undergoes densification so that occupants can set travel practices before car use becomes habitual.¹² Development of higher density housing should prioritise sustainable transport options over private cars.



These options need to be convenient and allow for travel to a range of locations. This goal can be advanced by refocusing Transport Impact Assessments towards non-car travel outcomes.¹³

Increasing housing density in areas with established public transport infrastructure may require greater frequency of services over a longer duration, during both peak and off-peak periods. It is also important to connect local cycling and walking infrastructure to the broader transport network.

Integrate transport infrastructure in new precincts

Melbourne's urban form and much of its continued growth has been premised upon widespread car ownership and use. Residential intensification in Melbourne – especially in the 'greyfield' suburbs of Melbourne's middle ring – will require much better integration between land use and the provision of transport infrastructure.

The Suburban Rail Loop (SRL), to be progressively developed through to 2050, will support the development of high-quality residential and mixed-use precincts, improving the liveability of key growth areas by changing the way people move around Melbourne. The SRL provides an opportunity to rethink how Melbourne's public transport system supports urban renewal and successful high-density mixed-use precincts, enabling a significant mode shift from cars. This would not only improve the safety and efficiency of travel throughout the city, but also enhance the liveability and sustainability of higher density residential precincts.

For further information, contact Dr Chris De Gruyter
chris.degruyter@rmit.edu.au

Authors



Dr Chris De Gruyter
Centre for Urban Research
RMIT University, Melbourne



Dr Trivess Moore
School of Property, Construction and Project
Management
RMIT University, Melbourne



Dr Tom Alves
School of Property, Construction and Project
Management
RMIT University, Melbourne

¹ Rosewall, T., and Shoory, M. (2017), Houses and Apartments in Australia. Bulletin, June Quarter 2017, Reserve Bank of Australia. Sydney, Australia.

² Australian Bureau of Statistics, Building Approvals, August 2019. Canberra, Australia.

³ Australian Bureau of Statistics, Census of Population and Housing Data, 2016. Canberra, Australia.

⁴ Transport Integration Act 2010, No. 6 of 2010. Victoria, Australia.

⁵ De Gruyter, C., Rose, G. and Currie, G. (2015), Understanding travel plan effectiveness for new residential developments. Transportation Research Record, no. 2537, pp. 126-136.

⁶ Guo, Z. and Ren, S. (2013) From minimum to maximum: Impact of the London parking reform on residential parking supply from 2004 to 2010. Urban Studies, vol. 50, no. 6, pp. 1183-1200.

⁷ Mayor of London, The London Plan: The spatial development strategy for London consolidated with alterations since 2011. March 2016, Greater London Authority, United Kingdom.

⁸ Martin, E., Shaheen, S. and Lidicker, J. (2010) Impact of carsharing on

household vehicle holdings: Results from North American shared-use vehicle survey. Transportation Research Record, no. 2143, pp. 150-158.

⁹ Zapata-Diomedes B, Knibbs LD, Ware RS, Heesch KC, Tainio M, Woodcock J, Lennert Veerman, J. (2017), A shift from motorised travel to active transport: What are the potential health gains for an Australian city?, PLoS ONE, 12(10).

¹⁰ Greater London Authority, Mayor's Transport Strategy March 2018. London, United Kingdom.

¹¹ American Council for an Energy-Efficient Economy (ACEEE), State and Local Policy Database – Mode Shift, May 2019. Washington, D.C., United States.

¹² C40 Cities Climate Leadership Group, How to drive a modal shift from private vehicle use to public transport, walking and cycling, March 2019, www.c40knowledgehub.org.

¹³ Cooley, K., De Gruyter, C. and Delbosc, A. (2016) A best practice evaluation of traffic impact assessment guidelines in Australia and New Zealand. Paper presented to Australasian Transport Research Forum (ATRF), Melbourne, Australia.