

CASE STUDY

Friendly Streets

| Singapore



An artist's impression of the Friendly Streets at Choa Chu Kang Avenue 2.

Singapore's limited land necessitated an integrated approach to transport infrastructure and land-use planning from the outset. The city's urban mobility landscape has, over the decades, transformed significantly into a dynamic tapestry of interconnected transportation systems, where urban planning initiatives and technological innovations foster seamless, sustainable and inclusive mobility for its residents.

This integrated approach is reinforced at the policy level through national strategies like the Singapore Green Plan 2030, which sets ambitious environmental targets across the whole of government, and the Land Transport Master Plan 2040, which guides the transformation of Singapore's transport system towards a greener and more connected future.

This reflects a broader recognition that mobility systems shape not only how people travel, but also how neighbourhoods function and how public spaces are experienced. Alongside investments in rail expansion, cycling networks and bus services, increasing attention has been placed on the design of streets and public spaces that support everyday mobility. It is within this context that the Land Transport Authority (LTA) introduced the Friendly Streets programme, a neighbourhood-scale initiative to make Singapore's residential streets safer and more accessible, and to support walk-cycle-ride (WCR) modes.

Singapore

in numbers

Area (2025)
744.3 km²

Population (2025)
6.11 million

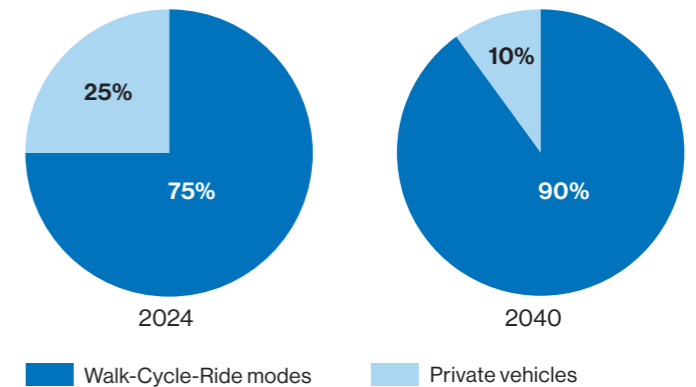
Population Density (people per km²) (2025)
~8,300

Land Used for Land Transport Infrastructure (2020)
11.4%

Accessibility and Proximity (2025)
9 in 10 Households Within 20 Minutes of Their Nearest Neighbourhood Centre via WCR Modes

Total Cycling Paths (2025)
760 km

Modal Share (Peak Period)



Land Transport Master Plan 2040

Aligning with the goals of the Singapore Green Plan 2030 to enhance the provision of sustainable transportation modes, the Land Transport Master Plan 2040 sets out the vision and strategies to create an accessible, sustainable and inclusive land transport system by encouraging commuting via its WCR approach.

This is coupled with a focus on creating mobility solutions to deliver these wider benefits:

- Greener streets that improve environmental quality
- Public spaces that promote health and social connection
- Infrastructure that supports economic vitality

Sources: Department of Statistics Singapore (Area,⁸² Population,⁸³ Population Density,⁸⁴ Land Used for Land Transport Infrastructure⁸⁵), Land Transport Authority (Modal Share,⁸⁶ Accessibility and Proximity,⁸⁷ Total Cycling Paths,⁸⁸ Land Transport Master Plan⁸⁹) (see endnotes for citations in full)

REFRAMING SAFER NEIGHBOURHOOD STREETS

In Singapore, the most frequent and routine journeys—walking to a nearby Mass Rapid Transit (MRT) station, accompanying children to school, or accessing parks and community facilities—take place within neighbourhoods. These everyday trips are shaped by the design and conditions of neighbourhood streets, which serve multiple functions: providing vehicle access while also supporting walking and cycling for short-distance trips. In residential areas, these streets are often shared spaces where motorists, pedestrians and active mobility users interact within the same environment.

As Singapore continues to encourage more walking and cycling as part of its WCR approach, there is an increasing emphasis on improving how streets function as shared spaces. This includes reimagining and redesigning road spaces to ensure that different modes can coexist more safely and comfortably within neighbourhood streets, making them more accessible to commuters of all ages and abilities and encouraging more considerate behaviour among road users.



Pedestrians using a raised zebra crossing at the Friendly Streets in Ang Mo Kio.

CREATING SAFER SHARED STREETS

The Friendly Streets programme, introduced by the LTA, reflects a shift in how neighbourhood streets are understood and designed as shared spaces that support a wide range of users, modes and activities.

The programme specifically targets areas with high pedestrian activity and key amenities, such as MRT stations, schools and neighbourhood centres, where improvements to street conditions can have the greatest impact on everyday mobility. It is guided by three key objectives:

- to make walking safer and more comfortable
- to improve access to key destinations, and
- to encourage more gracious behaviour among road users.

Rather than relying on large-scale infrastructural changes, Friendly Streets focuses on targeted interventions within residential areas, combining physical design measures and behavioural cues.⁹⁰ These include widened footpaths, the addition of barrier-free and raised zebra crossings, longer pedestrian crossing times, and shorter waiting times at signalised crossings to improve access and walking comfort to key destinations. Visual elements such as gateway treatment, with reduced speed limits and green road surfaces, are used to signal to motorists to slow down and watch out for pedestrians. Traffic signs with a bright smiling sun emblem have been installed along all Friendly Streets to connote a welcoming environment where the community can move around in a safe, comfortable and enjoyable way.



An artist's impression of the Friendly Streets at Bedok North Street 2
Mapping the cross-domain outcomes of the Friendly Streets programme.





In addition, Friendly Streets may opportunistically bring about improvements to bus stops and connections to MRT stations to support more seamless first- and last-mile journeys within the public transport network. The impact of such interventions is often most visible not only within individual streets, but in how they strengthen connections across the wider neighbourhood.

Prior to implementation, the LTA engaged residents and local stakeholders to better understand needs and challenges within each neighbourhood.⁹¹ While some motorists raised concerns about reduced traffic speeds, most residents supported the proposed traffic calming measures and pedestrian-friendly features and gave feedback on the proposed scheme.

The LTA used this feedback to refine the design and location of interventions where feasible—shifting crossing locations, redesigning crossing types to reflect local demographics, and optimising the scope of traffic calming measures, especially in areas with a larger number of competing needs. By responding to local needs, Friendly Streets reflects a paradigm shift in street design that is not only functional but grounded in how residents use and experience their neighbourhoods.

INTERPRETING FRIENDLY STREETS THROUGH A CROSS-DOMAIN LENS

So far, Friendly Streets pilots have been implemented in several neighbourhoods across Singapore, including Ang Mo Kio, Bukit Batok West, Tampines, Toa Payoh and West Coast. The framework was applied retrospectively to these pilots to gain meaningful insights into the cross-domain potential of the Friendly Streets programme. As an early-stage programme, the evidence base draws primarily from observed behavioural data and perception surveys from residents in these pilot sites, rather than data from longitudinal studies. Nonetheless, initial findings across the four pillars offer meaningful insights into the programme's cross-domain potential.

PILLAR	PRIORITY	RATIONALE
 MOBILITY	High	The Friendly Streets programme was primarily designed to improve the safety and accessibility of neighbourhood streets for all road users. Reducing vehicular speed limits and supporting active mobility were central objectives guiding the design of the programme.
 ENVIRONMENTAL	Low	While not a primary focus, environmental improvements are embedded within the design approach. Measures such as traffic calming and support for active mobility may contribute to reduced noise levels and calmer street environments.
 SOCIAL & HEALTH	Medium	Improving safety, particularly for pedestrians and other vulnerable users, was a key consideration in the design of the programme. The emphasis on safer and more inclusive streets reflects strong alignment with social and public health outcomes.
 ECONOMIC	Low	While not a primary focus, the programme supports neighbourhood accessibility and street usability. These improvements strengthen everyday access to amenities and may contribute to local activity and neighbourhood vitality over time.

The outcome priorities for the Friendly Streets programme, as determined by the application of the Prioritisation Tool.



MOBILITY PILLAR OUTCOMES

- Across the pilot sites, over 50% of motorists agreed that the green road markings and humps were useful in encouraging them to slow down. Average vehicle speeds decreased by up to 25% following the introduction of traffic calming measures.⁹²
- Active mobility volumes—including pedestrians and cyclists—increased along the pilot corridors, suggesting that when streets are perceived as safer and more comfortable, residents are more willing to walk or cycle for neighbourhood trips.
- These outcomes are also reflected in user perceptions: 95% of residents reported improved comfort and confidence when walking or cycling within neighbourhood streets, and over 80% indicated they would choose to walk more following implementation.⁹³
- The observed modal shift has been little to date, which is consistent with the early-stage nature of the pilots. Long-term monitoring will be needed to assess whether behavioural changes translate into measurable reductions in traffic intensity and associated environmental impacts.



ENVIRONMENTAL PILLAR OUTCOMES

- The observed reduction in vehicle speeds is likely to contribute to lower traffic noise levels, particularly in residential settings, which in turn will help to create quieter street environments.
- The traffic calming measures could discourage through-traffic on residential streets over time. Where fewer vehicles pass through, neighbourhood streets may experience reduced traffic intensity, contributing to lower emissions and calmer pedestrian-friendly environments in the long term. Long-term monitoring will be needed to assess whether reductions in traffic intensity and associated environmental impacts translate to sustained behavioural changes.



SOCIAL & HEALTH PILLAR OUTCOMES

- The response from residents has been positive, with 9 in 10 agreeing that their walking and cycling experiences have improved.⁹⁴
- The observed reduction in vehicle speeds has direct implications for safety, particularly in residential environments where pedestrians and cyclists share space with vehicles.
- Lower traffic speeds are associated with reduced risk and severity of road traffic incidents. For Friendly Streets, this translates to improved safety for vulnerable users, including children and seniors.
- Beyond safety, the programme places strong emphasis on inclusivity and accessibility. Features such as barrier-free crossings, wider footpaths and improved crossing times make streets easier to navigate for a wider range of users, especially those with mobility needs.



ECONOMIC PILLAR OUTCOMES

- Friendly Streets may also influence neighbourhood vitality by improving how residents access nearby destinations.
- Safer and more comfortable streets can encourage residents to walk or cycle to local amenities such as shops, schools, parks and community facilities. This can strengthen everyday neighbourhood connections and support more active use of local spaces.
- While it is challenging to quantify the economic impacts of the programme, the improvements to street accessibility and liveability provide a foundation for broader neighbourhood vitality over time.

MOVING TOWARDS SAFER AND MORE LIVEABLE NEIGHBOURHOODS

The Friendly Streets pilots represent an early but instructive step in refining how Singapore's neighbourhood streets can better support safer shared use. Initial findings suggest that targeted interventions—when designed to respond to local context and implemented with community input—can meaningfully influence both driver behaviour and residents' willingness to walk or cycle for everyday trips.

The pilots provide useful insights into how different traffic calming measures influence driver behaviour and street usage. Beyond the immediate outcomes observed from the pilots, the impact of Friendly Streets extends beyond individual street segments to influence how neighbourhoods function as connected systems. Interventions such as traffic calming measures and enhanced pedestrian crossings strengthen mobility connections to nearby destinations, including neighbourhood centres, markets, parks and public transport nodes.

By improving the quality and continuity of these local connections, the programme supports safer, more inclusive and more comfortable short-distance trips within neighbourhoods, often extending beyond the immediate project boundary. When complemented by other active mobility options such as bike share programmes, these conditions contribute to a stronger active mobility environment.

These insights highlight an important aspect of the programme: its ability to respond to the specific spatial and functional needs of different neighbourhoods. Rather than applying a uniform solution, Friendly Streets interventions can be tailored to strengthen local connections. They can also be progressively extended across neighbourhoods to enhance safety, connectivity and liveability within existing street networks.