10 ideas for creating walkable and bikeable places

Walkability and bikeability are widely associated with liveable cities. Most people would equate walkable and bikeable places with more bike lanes and wider sidewalks. A cross-comparison of cycling rates and total cycling network in cities across the world shows that these two factors are not always correlated to each other. While the leading cycling cities of the world, Copenhagen and Amsterdam, have a generous provision of dedicated cycling infrastructure and high cycling rates, the numbers for cities such as Tokyo, Japan, seem to tell another story: other factors are just as important in contributing to a successful cycling culture.

Creating walkable and bikeable places hence necessitates a far more fundamental change in how we design our cities. This involves nothing less than a paradigm shift from the motorist-oriented planning and design norms that have shaped most cities for the past half century or so. A new design ethos that prioritises the safety and needs of more vulnerable groups of road-users – pedestrians and cyclists needs to be established.

The Centre for Liveable Cities, Singapore, and the Urban Land Institute initiated a research project on “Creating Healthy Places through Active Mobility” in November 2013. Two workshops were conducted involving experts like Prof Jan Gehl and participants from the public, private and civic sectors to discuss and contribute ideas to enhance walking and cycling in the city. The following are 10 ideas arising from the workshop discussions on creating walkable and bikeable places.
1. **Make it convenient and efficient**

A comprehensive and connected network for pedestrians and cyclists makes door-to-door travel on foot or by bikes more convenient and efficient. Fenced developments should be discouraged and made porous to minimize unnecessary detours by pedestrians and cyclists when getting from point to point. In Singapore, *through-block links* stipulated in land sales conditions for certain developments, to ensure designated 24-hour pedestrian corridors through these developments, are a good way to ensure pedestrian connectivity within the city.

**Public transit systems** should make it as convenient as possible for people to complete their journeys on foot or bicycle. Effective cycling connections, in particular, can help alleviate the need for bus feeders to fixed rail transit stations and can be a viable alternative to “last mile” challenges. This is especially important in promoting active mobility for tropical cities like Singapore, as transit integration allows people to cycle for the first or last legs of longer commutes, which may otherwise be unfeasible for most people to complete on bike in hot weather climates.

**Bike share programmes** are effective for cities which are starting to promote active travel. A well planned and designed bike sharing system provides convenient access to bicycles for short distance trips and serves as a good alternative to other modes of transport.
2. **Provide dedicated space for all**

Dedicated infrastructure is essential for most areas within the city to reduce conflicts between the different modes of traffic and to enhance travel efficiency for all road-users alike. The provision of dedicated infrastructure has been proven to generate tangible results in increasing walking and cycling rates, and, if implemented correctly, enhances safety for all road-users.

In New York City, the increase in commuter cycling rates was very much a result of the city government’s pro-active initiative in providing dedicated cycling infrastructure. The doubling of citywide cycling network together with safer street designs corresponded closely with a doubling of bicycle commuting between 2007 and 2011. The New York City Department of Transportation aims to further double commuter cycling rates by 2017.¹

3. **Ensure visibility at junctions**

Accidents often occur due to blind spots for drivers, which render pedestrians and cyclists invisible to them. Junctions present particularly problematic locations where the driver has to look out for oncoming vehicles in addition to pedestrians and cyclists before making a turn. Dutch junction designs, be it cross-junctions or roundabouts, address this problem by maintaining space after the turn to allow cars to stop and look out for pedestrians and cyclists.

**Painted cycling lanes** help to attract drivers’ attention to the presence of cyclists. Cyclists generally travel at higher speeds than pedestrians and allow a driver less reaction time if he does not expect a cyclist to cross the junction. Painted cycling lanes for protected cycling infrastructure are best limited to danger areas like junctions in order to maximize their hold on drivers’ attention.

4. **Maintain continuity of movement**

Pedestrians and cyclists often find their journeys interrupted by various types of traffic junctions, from minor driveways to major signalised junctions. This not only reduces travel efficiency, but can also make the journey more uncomfortable, especially in the tropics due to the extra effort required to stop and start the bike.

**Dutch junction designs** provide a high degree of continuous movement for cyclists. This is achieved not only by continuing the cycling lane through the junction in the form of bicycle crossings, but also by consciously creating gentle bends on the cycling lanes around junctions. Sharp 90-degree bends which require cyclists to slow down to negotiate are avoided. The protected cycling lane and junction design also allows cyclists to cycle through red lights safely at the top of T-junctions. This minimises the number of stops a cyclist has to make.

**Continuous sidewalks** in cities like Copenhagen and Amsterdam challenge the typical relationship between cars and pedestrians or cyclists at minor intersections. Rather than requiring pedestrians and cyclists to stop and watch out for cars, the sidewalk continues across the street and requires the car to stop and watch out for pedestrians or cyclists before entering the pedestrian’s domain, to move through the intersection. This clearly prioritizes the right-of-way for pedestrians and cyclists at minor intersections and slip lanes, allowing these groups to enjoy greater continuity of movement.

5. **Keep it slow**

Prioritizing pedestrians and cyclists generally require motorized traffic speeds to be kept low, especially where pedestrian traffic is higher. Speed limits in Tokyo, in particular, are heavily regulated, allowing for pedestrians and cyclists to share the same space on smaller neighborhood roads where speed limits are capped at 20 – 30km/h, despite the lack of cycling lanes or pedestrian paths. Speed limits are also prominently painted on the road, prompting drivers to slow down, allowing them more time to react to obstacles and emergencies.

The benefits of slow streets are best exemplified by “woonerf”, or living streets, in the Netherlands. Traffic-calming design interventions are cleverly integrated to cut traffic speeds in residential areas to footpace at 12m/h, allowing cars, cyclists and pedestrians to share the same space, and children to play on the streets safely.
Shared streets are also common in Asian cities where traditional street markets and retailers are dominant. The constant volume of pedestrian and cycling traffic through such streets forces cars to slow down despite the lack of traffic-calming design interventions. The absence of street kerbs in such high-pedestrian traffic areas also allows for pedestrians and cars to negotiate for space in a flexible manner without compromising on safety as motorised speeds are kept low.

6. **Prioritise at-grade crossings**

People are generally “energy-efficient” creatures; making crossings simple and direct minimises the amount of effort required for pedestrians and cyclists to complete their journeys and enhances the continuity of movement. Overhead bridges and underpasses, especially at non-arterial roads, can create “mini-highways” that inconvenience pedestrians and cyclists at the expense of cars.

In Seoul, Korea, several efforts have been made in recent years to create a more pedestrian-friendly city. One of the key initiatives includes the Gwanghwamun Pedestrian Belt where underpasses were replaced by at-grade crossings to create direct connections for people. **Double-wide pedestrian crossings** are also commonly found in Seoul, allowing crowds to cross the road comfortably.

Many high-density cities such as Tokyo and Taipei also have **diagonal crosswalks** at traffic junctions with high pedestrian volumes during peak periods to enable safe, direct crossings for pedestrians and cyclists alike.
7. **Ensure consistency in design standards**

Consistent design standards and clear rules throughout the city allow road-users to anticipate what should be expected when moving around in the city. For example, placing the bike lane on a consistent side of the road allows for easy recognition of designated paths by pedestrians and cyclists. Drivers would also be able to anticipate where cyclists would be coming from more easily, thereby helping to reduce accidents. Consistency should also be extended to signage systems to enhance user-friendliness and improve the city’s aesthetics.

8. **Make it comfortable and attractive**

As pedestrians and cyclists are exposed to the elements, addressing climatic conditions is the first step towards creating a more comfortable and attractive environment for the people. In Copenhagen, snow clearance for cycling tracks in winter is prioritised over clearance for roads to ensure that cyclists can ride comfortably even during inclement weather.

Singapore experiences rather different challenges with the hot and humid tropical weather. The extensive street planting programme has contributed significantly to enhancing comfort and attractiveness for walking and cycling in Singapore, with large mature trees providing much needed visual relief as well as shade from the sun and some shelter from the rain for all road-users.

9. **Mix up the uses**

Studies have proven that compact, mixed-use urban environments help encourage people to walk and cycle. Mixed-use developments reduce the distances for daily commutes and enhance ready and convenient access to essential goods and services. Such environments create a more interesting and attractive walking and cycling experience, with a greater variety of activities along the journey. This also

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opens up more opportunities for social interaction and increases sales for local businesses, helping to reinforce people’s choice of walking and cycling for their daily commutes.

11. **Close the loop with end-of-trip amenities**

End-of-trip amenities contribute significantly to the convenience and comfort of active mobility. Research on the commuting behaviour of residents in Washington, DC had shown that provision of showers, lockers and bicycle parking at work can increase the likelihood for people to cycle by almost five times.³ In tropical cities, providing shower facilities and drop-and-go laundries at workplaces is even more crucial to ensure comfort for active mobility as a form of commute.

Innovative **underground parking carousels** can be found at train stations in Tokyo. Termed the Eco Cycle system, this underground bike parking system allows cyclists to deposit their bicycles at ground level, after which the bicycles are taken underground, and stored and organised by mechanical lifts. This system removes bicycle clutter on ground level and frees up more space for pedestrians and public activities, a huge bonus for high-density cities facing shortage of space, while at the same time protecting bikes from the weather and theft.

**Conclusion – Active Mobility is for everyone**

Every person, be it drivers, public transport commuters, or cyclists, will eventually become a pedestrian at some point of his/her journey; walkable and bikeable places benefit not only pedestrians and cyclists, but practically anyone who is physically mobile. While some reprioritization of road users would be required with active mobility initiatives, this would ultimately create a more amicable environment for cars, cyclists and pedestrians to co-exist within the city.

Creating walkable and bikeable places is therefore not about inconveniencing certain groups and privileging others. As the CLC-ULI workshop discussions and the experiences of other cities reveal, promoting active travel requires all the stakeholders of a city to focus on people as a starting point. It is only by putting people first that active mobility can become a preferred choice for everyone, and cities can become more liveable.

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