**Fietsen als duurzame vervoersoptie in Singapore**

Dossier over beleid, plannen en ontwikkeling van fietsen en fietsinfrastructuur in Singapore

Laatste update: 01-02-2017

Voor meer informatie neem contact op met de innovatie adviseurs in Singapore via SIN-IA@minbuza.nl of kijk op singapore.nlambassade.org & www.ianetwerk.nl
## Evolution of cycling in Singapore

<table>
<thead>
<tr>
<th>Year</th>
<th>Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>1850</td>
<td>First wheeled transport: bullock carts and horse carts</td>
</tr>
<tr>
<td>1880</td>
<td>Japanese Rickshaws, also known as Jinrickshaws, popular until the second world war, due to low costs</td>
</tr>
<tr>
<td>1890</td>
<td>Increasing popularity of bicycles in the west, but too costly for Asian countries</td>
</tr>
<tr>
<td>1900</td>
<td>Horse and carriage hackney, expensive so Japanese man-driven Jinrickshaws stayed popular</td>
</tr>
<tr>
<td>1920</td>
<td>Introduction of motorised vehicles</td>
</tr>
<tr>
<td>1942</td>
<td>Japanese occupation brought the trishaw to Singapore, a bicycle propelled rickshaw</td>
</tr>
<tr>
<td>1942</td>
<td>Japan developed their own bicycle industry and it is assumed they introduced the bicycle in Singapore during the occupation</td>
</tr>
<tr>
<td>1960</td>
<td>Population of Singapore: 1.8 million, number of bicycles: 268,000, compared to 63,000 cars and 19,000 motorcycles. Due to the popularity, bike paths were added next to Singapore’s major roads.</td>
</tr>
<tr>
<td>1970</td>
<td>An increase of cars and motorcycles, giving bicycles a lower-class status. Bike paths were reclaimed by cars and infrastructural plans were dedicated to improve conditions for motorised traffic, hence meaning more highways and a decreasing number of bike paths.</td>
</tr>
<tr>
<td>1981</td>
<td>The Government Registration on Vehicles cancelled the mandatory bicycle registration</td>
</tr>
<tr>
<td>1987</td>
<td>The opening of the first Mass Rapid Transit (MRT), Singapore’s underground transportation system</td>
</tr>
<tr>
<td>1991</td>
<td>The Land Transport Authority builds bicycle parking spots at 24 MRT stations</td>
</tr>
<tr>
<td>1992</td>
<td>Introduction and start of the Park Connector Network (PCN) for recreational cycling and other forms of exercise</td>
</tr>
<tr>
<td>1995</td>
<td>Estimated number of bicycles in Singapore: 240 per 1,000 population</td>
</tr>
<tr>
<td>2008</td>
<td>Start test allowing folding bikes in the MRT because of increased popularity, unofficial name folding bikes: foldies</td>
</tr>
<tr>
<td>2009</td>
<td>Establishment Cycling Facilitation Committee, common community led approach on cycling and cycling safety in 5 selected HDB towns where dedicated bike paths were put in place.</td>
</tr>
<tr>
<td>2010</td>
<td>Tampines to be the first cycling town, with shared footpaths for pedestrians and bicycles.</td>
</tr>
<tr>
<td>2012</td>
<td>Introduction of the National Cycling Plan (NCP), to improve cycling conditions. First step to provide dedicated bike paths to facilitate intra-town cycling and connectivity to mayor transport nodes.</td>
</tr>
<tr>
<td>2015</td>
<td>Foundation of the Active Mobility Unit (AMU) to help improve the coordination of cycling-related initiatives across the whole Government.</td>
</tr>
</tbody>
</table>


### SWOT Analysis

#### Strengths
- Cycling would help to prevent mobility issues
- Cycling is healthy, cheap and sustainable
- Growing enthusiasm for cycling bottom up (LoveCycling SG and Joyriders.sg)
- Increasing support for cycling top down by key players (for example Irene Ng, member of parliament)

#### Weaknesses
- No ownership, several ministries and governmental institutions are responsible for small parts of facilitation of cycling
- Lack of rules and regulations and road safety for cyclists
- Cycling isn’t embedded in Singapore’s culture, sharing of roads doesn’t come natural
- No cycling infrastructure
**Opportunities**
- Increasing focus on sustainable forms of transport (active mobility)
- Hardly any local competitors
- Lack of experience and knowledge
- Lack of vision on how to reach set goal of 700km bike path in 2030
- Amsterdam is known in Singapore as cycling city

**Threats**
- Denmark is trying to sell itself as cycling experts
- Accessible and cheap public transport
- Climate not suitable for cycling (hot, humid, rain)
- Gasoline is affordable
- Tenders focus on costs rather than added value and comfort for cyclists

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### The decision makers

The chart below shows the ministries and governmental institutions that are key players and decision makers in terms of planning, infrastructure and safety of cycling in Singapore.

<table>
<thead>
<tr>
<th>Ministry of Transport</th>
<th>Ministry of National Development</th>
<th>Ministry of Culture, Community and Youth</th>
<th>Ministry of the Environment and Water Resources</th>
<th>Ministry of Home Affairs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Transport Authority</td>
<td>Center for Liveable Cities</td>
<td>Urban Redevelopment Authority</td>
<td>National Parks</td>
<td>PUB Water Agency</td>
</tr>
<tr>
<td>Active Mobility Unit</td>
<td>Housing and Development Board</td>
<td>Sport Singapore</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td>Traffic Police Department</td>
</tr>
</tbody>
</table>

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**Ministry of Transport**

The Ministry of Transport oversees the development and regulation of civil aviation and air transport, maritime transport and ports, and land transport.
Website: [www.mot.gov.sg](http://www.mot.gov.sg)

**Land Transport Authority**

The Land Transport Authority (LTA) is responsible for planning, operating, and maintaining Singapore’s land transport infrastructure and systems. Their aim is to place motorists and public transport commuter at the heart of the transport system.
Website: [www.lta.gov.sg](http://www.lta.gov.sg)

**Ministry of National Development**

The Ministry of National Development (MND) is the key government ministry responsible for national land use, planning and development.
Website: [www.mnd.gov.sg](http://www.mnd.gov.sg)

**Centre for Liveable Cities**

The Centre for Liveable Cities (CLC) established in 2008 based on a strategic blueprint developed by Singapore’s Inter-Ministerial Committee on Sustainable Development. The Centre’s mission is to distil, create and share knowledge on liveable and sustainable cities. CLC distils key learning points from Singapore’s experiences over the last half-century, while creating knowledge to address
emerging challenges. It also shares knowledge with, and learns from, other cities and experts.

Website: www.clc.gov.sg

Publication by CLC: Creating Healthy Places through Active Mobility

Creating Healthy Places through Active Mobility, a collaborative research project between the Centre for Liveable Cities and Urban Land Institute, explores why and how we should make our urban environment friendlier to walking and cycling. This book, which publishes the findings of that research, discuss infrastructure design and policies of cities such as Amsterdam, Copenhagen, New York, Seoul and Taipei which have adopted active mobility as central to their transformative strategies for building healthy, vibrant, and liveable cities. The book also presents ideas for promoting active mobility based on workshops led by global expert Jan Gehl.

PDF: http://www.clc.gov.sg/documents/books/Active-Mobility.pdf

Urban Redevelopment Authority

The Urban Redevelopment Authority is Singapore’s land use planning and conservation authority. Their mission is to make Singapore a great city to live, work and play. They strive to create a vibrant and sustainable city of distinction by planning and facilitating Singapore’s physical development in partnership with the community.

Website: www.ura.gov.sg

National Parks

At National Parks Board (NParks), they are dedicated and committed to providing and enhancing the greenery of Singapore. Beginning with the first Tree Planting Campaign in 1963, NParks has come a long way in greening up Singapore, with 4 nature reserves and more than 300 parks sprawled across Singapore to date. An island-wide Park Connector Network, suitable for walking, cycling and other forms of exercise, is being developed to link major parks, nature areas and residential estates.

Website: www.nparks.gov.sg

Housing and Development Board

The Housing and Development Board (HDB) is Singapore’s public housing authority and a statutory board under the Ministry of National Development. HDB plans and develops public housing towns that provide Singaporeans with quality homes and living environments.

Website: www.hdb.gov.sg

Ministry of Culture, Community and Youth

The Ministry of Culture, Community and Youth (MCCY) aims to bring into sharper focus the efforts to build a more cohesive and vibrant society, and to deepen a sense of identity and belonging to the nation. MCCY will work with its stakeholders to create an environment where Singaporeans can pursue their aspirations for a better quality of life.

Website: www.mccy.gov.sg

Sports Singapore

Sport Singapore was founded in 1973 and creates opportunities for people to excel in sports; opportunities for people to be engaged in sports as, coaches, officials, volunteers or fans; and opportunities for people to do business in sports as sponsors and investors.

Website: www.sportsingapore.gov.sg
Ministry of the Environment and Water Resources
The Ministry of the Environment and Water Resources (MEWR) together with its two statutory boards, the National Environment Agency (NEA) and PUB, the national water agency, manages Singapore's limited resources and address Singapore's environmental sustainability challenges through innovation, vibrant partnerships and co-operation across the 3P sectors - private, public and people.
Website: www.mewr.gov.sg

National Environment Agency
The National Environment Agency (NEA) is responsible for improving and sustaining a clean and green environment in Singapore. The NEA develops and spearheads environmental initiatives and programmes through its partnership with the People, Public and Private sectors. It is committed to motivating every individual to take up environmental ownership and to care for the environment as a way of life.
Website: www.nea.gov.sg

PUB (national water agency)
The national water agency, PUB is responsible for the collection, production, distribution and reclamation of water in Singapore. Rainwater is collected through rivers, streams, canals and drains, and stored in 17 reservoirs. Various reservoirs are linked by pipelines so that excess water can be pumped from one reservoir to another, thus optimising storage capacity. Water that has been used by customers is collected via an extensive sewerage system and treated at water reclamation plants. Used water is a resource too – treated used water is further purified using advanced membrane technology to produce high-grade reclaimed water, known as NEWater.
Website: www.pub.gov.sg

Ministry of Home Affairs
The Ministry of Home Affairs (MHA) is responsible for maintaining and improving Singapore's living conditions in terms of safety and law enforcement. Some key topics covered by the MHA are law and order, counter-terrorism, civil defence, community engagement, anti-drug enforcement.
Website: www.mha.gov.sg

Singapore Police Force
Singapore Police Force's core function is to protect the people who live in Singapore from crime and all manner of criminal harm. Crime in SPF’s context includes terrorism and public disorder.
Website: www.police.gov.sg

Traffic Police department
The Traffic Police department is in charge of road safety and law enforcement. They are also responsible for driving license’s and road safety campaigns.
Website: http://driving-in-singapore.spf.gov.sg/

Councils, committees and units
Singapore Road Safety Council
The Singapore Road Safety Council (SRSC) was set up on 9 December 2009 by the Ministry of Home Affairs (MHA), supported by the Ministry of Transport (MOT), Land Transport Authority (LTA) and other road safety-related stakeholders. They provide advisories on safety for all road users, including
pedestrians.
Website: http://src.org.sg/

**Cycling Facilitation Committee**
The Cycling Facilitation Committee (CFC) was set up in June 2009 to establish a common, community-led approach to key issues arising from LTA’s implementation of dedicated cycling tracks in the 5 selected HDB towns - Yishun, Tampines, Taman Jurong, Pasir Ris, Sembawang. These are in the areas of infrastructure, public education and enforcement. The CFC also allows for communities to be involved and learn about the experiences in other cycling towns as well as promote safe cycling.
Website: http://www.mot.gov.sg/About-MOT/Land-Transport/Cycling/

**Active Mobility Unit**
The Active Mobility Unit (AMU) is set up by LTA in May 2015. Since cycling is supported by many government agencies such as LTA, the Traffic Police, NParks and URA, LTA will be the central planner and ensure that education efforts and the enforcement of cycling rules and norms, are coherent and coordinated.

The AMU has four work streams:
- Education
- Planning
- Enforcement

**Active Mobility Advisory Panel**
The Panel is chaired by Associate Professor Muhammad Faishal Ibrahim, Parliamentary Secretary for Education, Social and Family Development, and compromises 14 representatives from key stakeholder groups such as seniors, youths, grassroots leaders, cyclists, and personal mobility devices (PMDs) users. It conducted a nation-wide public consultation exercise to gather feedback and suggestions.

The Active Mobility Advisory Panel (AMAP) submitted its recommendations for the proposed rules and code of conduct to facilitate the safe and harmonious use of footpaths, cycling paths and shared paths to the Ministry of Transport on 17 Mar 2016.

The Panel submitted the following recommendations:
• Rules and code of conduct for users;
• Types of devices to be allowed on footpaths, cycling paths and shared paths; and
• Criteria for the types of devices to be allowed in public spaces.

The recommendations reflect three key principles: to prioritise the safety of the more vulnerable users, to ensure that rules are simple and easy to understand, and to balance the needs of different users in the best possible way.

**Active Mobility Bill**
The Active Mobility Bill was passed in Parliament in January 2017. The Government has accepted in full the Active Mobility Advisory Panel’s recommendations on cycling and the use of personal
mobility devices (PMDs). The Active Mobility Bill puts these recommendations into effect.  
Website: https://www.lta.gov.sg/apps/news/page.aspx?c=2&id=2e0d9c1a-55ab-4647-9b08-4cd4ff6d44cb

**Active Mobility Enforcement Team**

The Land Transport Authority (LTA) will roll out a dedicated team of Active Mobility Enforcement Officers (AMEOs) to encourage safe sharing of paths as well as deter reckless behaviour on bicycles and personal mobility devices (PMDs). This is part of efforts to encourage safe and gracious sharing of paths as more people take up active modes of commuting such as walking, cycling and using PMDs.  

**National Cycling Plan (NCP)**

The National Cycling Plan is the result of a collaboration of (governmental) institutes and organisations, such as the Land and Transport Authority (LTA), Urban Redevelopment Authority (URA), National Parks (NParks), Housing Development Board (HDB), Singapore Water Agency (PUB) and Sports Singapore. It is part of the Land and Transport Masterplan (2013). The vision of the National Cycling Plan is a cyclist-friendly, well-connected network providing safe and healthy cycling for all.

The NCP focusses on:
- 700km cycle path in 2030
- Intra-Town cycling (cycling between homes and major transport hubs and key amenities)
- Improve convenience and safe cycling


**National Cycling Plan Steering Committee**

LTA, NParks, the Housing & Development Board, the Urban Redevelopment Authority and the Singapore Sports Council are working together to make the National Cycling Plan a reality; its implementation is overseen by the CEOs of these agencies who sit on the National Cycling Plan Steering Committee.

**Research**

**Future Cities Laboratory**

The Future Cities Laboratory (FCL) was established by ETH-Zurich and Singapore’s National Research Foundation (NRF), and operates under the auspices of the Singapore-ETH Centre. The centre frames two research programmes: the Future Cities Laboratory (FCL) and the Future Resilient Systems (FRS).

One of the researchers from FCL wrote an article on the “Bicycle infrastructure in Singapore: An overview” (link to article: https://blogs.ethz.ch/engagingmobility/2016/05/03/bicycle-infrastructure-in-singapore-an-overview/)

Website: http://www.fcl.ethz.ch/about-us.html

**Cycling groups and enthusiasts**

Promotion on cycling and ideas on how cycling should be approached in Singapore come from cycling enthusiast. The two most important groups are LoveCyclingSG and Joyriders.
LoveCyclingSG
A Facebook group of enthusiastic cyclists founded by Francis Chu. Cycling enthusiast share ideas, cycling routes and discuss on various topics such as road safety and governmental policies and plans. Website: https://www.facebook.com/groups/lovecyclingsg/

Joyriders.sg
Joyriders.sg is one of Singapore’s largest recreational cycling communities. They organise rides for people of different ages and experience levels. They are also involved in the evolution of cycling in Singapore. Website: www.joyriders.sg

Projects and tenders

Cycling infrastructure upgrade and expansion
The Land Transport Authority (LTA) is planning to expand the connections of MRT stations to the park connectors. In September 2016 the LTA called a tender to build new cycling infrastructure in Tampines, Pasir Ris, Yishun, Sembawang and Taman Jurong. The new infrastructure is intended to improve connectivity in these neighbourhoods, making it easier for residents to get from one place to another by bike. The infrastructure includes wheeling ramps, bicycle parking facilities and bicycle crossings at junctions, as well as standardised signs.

Intratown Cycling Networks
Every HDB town will have its own cycling network by 2030. These cycling paths will connect commuters from their homes to MRT stations and bus interchanges, and nearby key amenities such as shopping malls and schools.

Ang Mo Kio: walking and cycling town
Ang Mo Kio, one of the most established housing estates in Singapore has become the first “walking and cycling” town. The first phase of the Ang Mo Kio Cycling network, which includes a 4km cycling path that loops around Ang Mo Kio Ave 1, 3 and 8 was officially opened on 9th July 2016. Cyclists are able to travel safely and seamlessly through the neighbourhood to Ang Mo Kio MRT station, Ang Mo Kio Swimming Complex and the AMK Hub. When fully completed in 2020, the cycling network in Ang Mo Kio will span 20km and will be the longest in any residential town. The cycling network will include a 2.6km-long walking and cycling corridor that runs along the MRT viaduct between Yio Chu Kang MRT station and Bishan-Ang Mo Kio Park.

Dutch Cycling Infrastructure Expertise for Singapore’s First Walking and Cycling Town
Witteveen+Bos and Singapore-based design and engineering consultancy Surbana Jurong were recently awarded a contract by Singapore’s Land Transport Authority (LTA) for the planning and design of the cycling network in the city’s Ang Mo Kio district. The project aims to create a cycling network there that will enable the district’s 175,000 residents to cycle safely and comfortably, setting an example for all of Singapore.

Asian megacities have been designed for motorized traffic. Due to increased prosperity and intensive use of available space, road congestion is rapidly approaching critical levels. For that reason, Singapore has been actively pursuing a policy for a number of years now to discourage car ownership and to promote alternative modes of transport. To achieve that aim, the government is
communicating a vision and campaign to turn Singapore into a “car-lite” city. This vision involves promoting public transport, cycling and walking. Singapore’s Land Transport Authority (LTA) selected the densely populated Ang Mo Kio district as a model town for this strategy.

In the pre-design phase, Witteveen+Bos will draw from its Dutch cycling infrastructure expertise as well as experience gained in Singapore in order to design superior infrastructure. In the final design phase, local engineers will contribute to taking the designs a step further under Witteveen+Bos’ supervision. A unique feature of our approach is the spatial analysis that enables us to decide how to design cycle routes and crossings in the existing densely built-up environment. The envisioned increase in cycle usage will also be factored in, even at this early stage, by identifying upgrade options.

‘We are immensely proud that Witteveen+Bos was selected as a specialist in cycling infrastructure and to have been given the opportunity to contribute to the development of Singapore’s walking and cycling infrastructure’, says Martijn Akkerman, cycling infrastructure, planning and design expert at Witteveen+Bos.

**Bike sharing**

The Government has called two tenders for bicycle-sharing systems. The first, by the Land Transport Authority (LTA), was for a pilot in Marina Bay, Tampines, Pasir Ris and the Jurong Lake District. Industrial developer JTC Corporation called a tender for a system involving either e-scooters or bicycles at its one-north business and research hub.

Private companies are also taking aim for the Singapore market. oBike, a Chinese company, has broken away from other players. The white, single-gear oBikes, are available for hire at MRT stations such as Buona Vista, Jurong East, Bukit Batok, Woodlands and Sembawang, among others. Other companies include Ofo and Mobike, which operate in major Chinese cities including Beijing and Shanghai.

**Cyclist safety**

Cyclists will be taught how to cycle safely on the roads, and more off-road cycling paths will be built so cyclists can stay off the roads. Bike to the Future project of Future Cities Laboratory research institute uses VR goggles to let people experience cycling in one of Singapore’s neighbourhoods. The Land Transport Authority (LTA) is rolling out a half-day Safe Cycling Programme in secondary schools. The programme will be piloted at foreign worker dormitories, schools and community centres, before it is rolled out to the public at the year end. Feedback from the pilot sessions will be used to fine-tune it.

**Bicycle parking systems**

Singapore will trial its first fully automated underground bicycle parking system at Kampung Admiralty in early 2017. On the land-scarce streets of Singapore, an underground system is a sensible way for bicycle storage that provides protection against theft, vandalism and the weather. The new system will provide 500 additional parking lots for the burgeoning cycling population in Admiralty. The trial will assess the user experience and financial viability of the underground bicycle parking system. If successful, LTA will consider extending the parking system to other locations.
<table>
<thead>
<tr>
<th>Date</th>
<th>Source</th>
<th>Link</th>
<th>Recap</th>
</tr>
</thead>
<tbody>
<tr>
<td>17-06-2015</td>
<td>Straits Times</td>
<td><a href="http://www.straitstimes.com/singapore/transport/pm-lee-one-possibility-for-rail-corridor-cycling-track">http://www.straitstimes.com/singapore/transport/pm-lee-one-possibility-for-rail-corridor-cycling-track</a></td>
<td>Prime Minister Lee Hsien Loong suggests the idea to convert an old railway corridor into a bike path.</td>
</tr>
<tr>
<td>30-06-2015</td>
<td>Straits Times</td>
<td><a href="http://www.straitstimes.com/singapore/transport/ura-calls-for-study-to-make-kallang-connector-a-seamless-cycling-route-to-town">http://www.straitstimes.com/singapore/transport/ura-calls-for-study-to-make-kallang-connector-a-seamless-cycling-route-to-town</a></td>
<td>Announcement on URA asking consultants to step forward to provide advice on Kallang Park Connector.</td>
</tr>
<tr>
<td>10-08-2015</td>
<td>Straits Times</td>
<td><a href="http://www.straitstimes.com/singapore/transport/go-for-underground-parking-says-expert">http://www.straitstimes.com/singapore/transport/go-for-underground-parking-says-expert</a></td>
<td>Professor Theo Salet sharing his view on underground bicycle parking and general facilities that would enhance the popularity of cycling in Singapore.</td>
</tr>
<tr>
<td>19-03-2016</td>
<td>Straits Times</td>
<td><a href="http://www.straitstimes.com/singapore/cycling-on-the-right-track">http://www.straitstimes.com/singapore/cycling-on-the-right-track</a></td>
<td>Column about cyclists that use the footpaths. A reply to the recommendations listed by the active mobility panel.</td>
</tr>
<tr>
<td>04-05-2016</td>
<td>Straits Times</td>
<td><a href="http://www.straitstimes.com/singapore/building-plans-to-take-in-needs-of-pedestrians-cyclists-from-july">http://www.straitstimes.com/singapore/building-plans-to-take-in-needs-of-pedestrians-cyclists-from-july</a></td>
<td>The Land Transport Authority (LTA) and Urban Redevelopment Authority require developers to factor in the &quot;safety, convenience and accessibility&quot; of pedestrians and cyclists into their designs.</td>
</tr>
<tr>
<td>26-05-2016</td>
<td>Straits Times</td>
<td><a href="http://www.straitstimes.com/singapore/scheme-takes-safe-cycling-message-to-schools">http://www.straitstimes.com/singapore/scheme-takes-safe-cycling-message-to-schools</a></td>
<td>The Land Transport Authority (LTA) is rolling out a half-day Safe Cycling Programme in secondary schools.</td>
</tr>
<tr>
<td>Date</td>
<td>Source</td>
<td>URL</td>
<td>Description</td>
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