



ARTICLE FROM THE BOOK:

**Cyclists & Cycling Around the World – Creating Liveable and Bikeable Cities**

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## Revitalisation of a Cycle Culture - Biking again in Guangzhou

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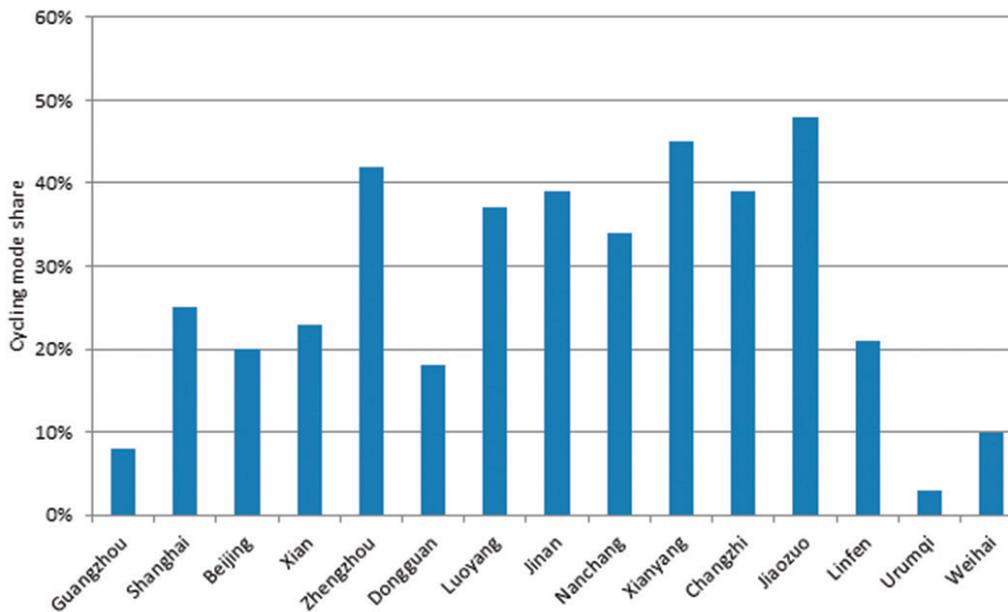
**T**his article describes the role of cycling in Chinese cities. But mostly it looks at Guangzhou, the capital and largest city of Guangdong province in south China, where cycling mode shares, as in any Chinese city, are dropping. The implementation of greenways and a public bike system are improving cycling conditions in Guangzhou though and are reversing this negative trend. This provides useful lessons to other cities in China and around the world.

This chapter is based on practical experience from a range of projects ITDP China has been involved in, as well as a number of our own surveys and related literature.

### Bicycle Kingdom?

In the last two decades, China, still known as the ‘bicycle kingdom’, has embraced the arrival of cars and is promoting this with a vast expansion of roads inside and between cities. In order to support and accelerate the development of Chinese cities, city governments’ focus is predominantly on the implementation of inner-city (ring) roads and the widening of existing roads. The road density in Chinese cities is growing on average at a rate of 9% per year (see Appendix). China’s biggest cities are also in the process of expanding their metro networks and building bus rapid transit (BRT) systems, in an effort to meet public transport demand, especially for longer trips.

In cities’ transportation plans little or no attention is given to the preservation and development of bike facilities, like bike lanes and bike parking. It seems policy makers, planners and designers have forgotten how crucial the bicycle is to such a large number



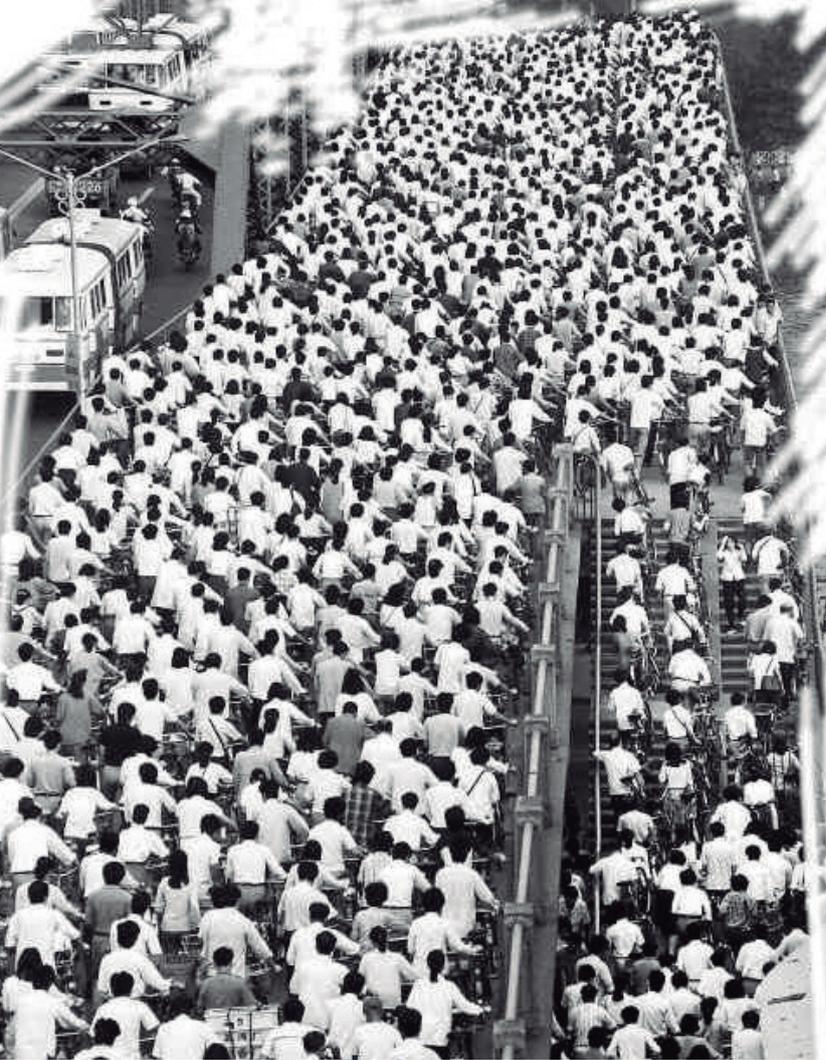
Source: Darido et al. 2009

of Chinese living in cities. Even though cycling shares are dropping, the table above shows that cycling is still (one of) the most important traffic modes in many Chinese cities. Cycling mode shares vary across cities, but are generally above 20%, and even higher in less developed cities and the countryside.

Economic growth, changing cultural perceptions, rapid motorisation, spatial growth, and changes in trip patterns are seen as reasons why cities are experiencing a decline in cycling shares (see Appendix). As a result of the lack of policies for cycling and the promotion of motorised traffic, and the infrastructure these need, cycling is increasingly becoming a dangerous way to get around in Chinese cities. Bike lanes are disappearing from roads, or are being moved to the sidewalk, where cyclists are supposed to share the space with pedestrians. Where bike lanes still exist, they are often located on the kerbside of the mixed traffic roads, not physically separated from motorised traffic, and becoming blocked by cars driving or parking. Moreover, a lack of sufficient bike parking lots and stands, and a high risk of bike theft, are also discouraging cycling.

### Cycling in Guangzhou

Guangzhou, for a long time, has had lower bike shares compared to other Chinese cities. The city historically known as Canton, is the capital of China's most prosperous Guangdong Province. Located in Southern China, Guangzhou has an estimated population of 16 million people.



**Figure 1.** Guangzhou's Haizhu bridge packed with cyclists, several decades ago



**Figure 2.** Guangzhou's residents used to get around by bike

For decades, the bicycle was the main mode of transportation for Guangzhou's residents. Dedicated bike lanes were filled with cyclists making their way through the city. Dedicated bike parking areas the size of suburban shopping mall lots were located across the city. Citizens were cruising past as far as the eye could see, as cars were not available and public transport service was slow and had little coverage.

But much has changed since the Chinese economy, especially in the South, with Guangzhou as one of the main instigators, grew rapidly during the 90s and 00s. Still, images of hundreds of cyclists can be seen in some places of the city, with migrant workers pedalling to work in the early morning, but the numbers, especially in the more developed parts of the city, have dropped drastically. In thirteen years, between 1992 and 2005, the share of walking and cycling combined, dropped from 70% to 40%, with the majority of trips currently made on foot (see Appendix). Last year, only 8% of trips in Guangzhou were made by bike (see Appendix).

The main reason for the decline in cycling over the last decade is the improvement of car and public transport infrastructure. In 1949, Guangzhou had 230 kilometers of road (see Appendix). In 2010, urban roads stretched for 5519 kilometers, with another 717 kilometers planned by 2015 (see Appendix). This greatly improved conditions for driving. Also Guangzhou now has eight metro lines, with three more opening in the coming three years. There are currently around 1200 bus routes, covering the entire city, and a world-class bus rapid transit (BRT) system is linking the city centre with the Eastern districts.

But cycling is still an important part of Guangzhou's urban transport system. It serves as a favourable travel mode for short trips, for commuting as well as shopping and visiting friends and relatives. Also, cycling offers low-cost mobility for the urban poor, who often have no choice but to cycle for their trips. A survey in Guangzhou's central Tianhe district (see Appendix) shows all different types of people ride bikes for all different kinds of purposes. The average cyclist in Guangzhou though, rides a bike to get to and from work or for work (there is a high share of delivery bikers), rides a bike every day, is under 30 years old, has a lower to middle income and rides a fairly cheap bike. There is an equal amount of male and female cyclists.

Despite the negative trend for cycling, two projects have greatly improved cycling conditions in Guangzhou in the past years. Both were spurred by the Asian Games, the world's second-biggest multi-sport event in the world, that Guangzhou organized in 2010. In the run-up to the event, Guangzhou invested heavily in improving its infrastructure, public transport, public services and parks, but also in the construction of a greenway network and the implementation of a public bike system.

## **Guangzhou greenways bring bike lanes and bike parking**

In an effort to improve urban living and preserve cultural and environmental sights, Guangdong's Party Secretary Yang Wang started the development of greenways throughout cities in Guangdong province, especially Guangzhou. In 2010, right before the opening of the Asian Games, 1,000 kilometers of greenways were implemented in Guangzhou, and currently over 2,000 kilometers are open to the public. These greenways, stretched-out parks along scenic and cultural spots and large transportation corridors, are beautifully landscaped paths for pedestrians and cyclists. The greenways are separated from motorised traffic and serve both as a recreational space for people to relax, play and gather, as well as a transportation corridor for pedestrians and cyclists to get around safely and conveniently. In the first year of opening, 25 million people throughout the province visited greenways or used them on a daily basis. By 2015, a total of 8,770 kilometers of greenways will be finished, connecting city centres with suburbs and rural areas and even connecting all cities in Guangdong in a Provincial greenway network.

Guangzhou's government intends to make greenways the backbone of Guangzhou's cycling network. In the city centre and suburbs, greenways were built on the boulevards along the Pearl River, along creek banks, between parks, through residential areas, at universities and along large traffic arterials. In rural areas, the construction of greenways on scenic routes has stimulated rural development. A farmer in Guangzhou's Zhengcheng district explained how greenways have changed his life. "I used to be motorbike taxi driver in the city, but I moved back to the countryside where my parents live. I opened a restaurant, serving locally grown food to greenway visitors. I make a lot of money now. Friends have opened bike rentals, hotels and small markets, selling local vegetables and fruits" (in Yangcheng Evening Newspaper, on 2012.02.23).

Land values, both urban and rural, have risen substantially for areas around greenways, showing the economic value of building high-quality pedestrian and cycling infrastructure (see Appendix). A study showed that the rural collective economy along greenways was 54% higher than that away from greenways (see Appendix). Also in city centre areas, surveys showed an increase of 30% of land values around the most successful greenways, compared to the average increase in the district.

The Forestry and Landscaping Bureau, in charge of greenways in Guangzhou, in cooperation with district governments, are organizing events on greenways. Media cover high-level government leaders, students, school children and celebrities riding bikes on a greenway, to promote its use among ordinary citizens. Guannan Liu, a Guangzhou resident, has fond memories of cycling as a kid. "Economic development has had bad effects on the quality of life in the city and the way we travel. Greenways have given us back public green space and a chance to safely ride a bike again. This brings back the culture of cycling I remember from when I was a child. I am happy I can now share that again with my friends and my young child" (in Southern Daily newspaper, 16 January 2011).

After the initial success in Guangzhou and other cities in Guangdong's Pearl river delta, many other Chinese cities started implementing greenways. Hebei and Fujian provinces both decided to construct greenways in all their cities. Currently over 60 greenway networks are implemented or planned in China, with more cities joining every month. The Vice-minister of Housing and Urban-Rural Development of China's national government said greenways reduce PM 2.5 emissions and promote social equity, by providing leisure activities for the urban poor. He urged the implementation of greenways across Chinese cities and stressed the importance of implementing public bikes on greenways. For residents, greenways provide high-quality walking and cycling infrastructure and elevate the status of cycling, whereas politicians and city officials boost their careers with implementing high-profile projects.



**Figure 3.** Cyclists flock to a greenway along Guangzhou's Pearl river, traversing the city.

**Figure 4.** Well-separated bike track on Guangzhou's renowned Shengwudao greenway (photo credit: Karl Fjellstrom)

**Figure 5.** Cyclists using high-quality, separated bike lanes in the central business district for daily commute

**Figure 6.** Shengwudao's greenway incorporates not only bike tracks, but also bike parking, pedestrian promenades, rest areas and restaurants

**Figure 7.** Cycling groups organize joint bike rides on Guangzhou's greenways

**Figure 8.** Mountainbikers coming together on a greenway in the countryside

As a result of this, greenways are now spreading throughout China, proving how successful Guangzhou's pilot project has been.

Greenways have greatly benefited cycling conditions in Guangzhou. In order to increase cycling on greenways, much work remains to be done on improving the quality of the bike lanes, and the continuity of these. Better access and connectivity with origins and destinations of cyclists, will really make greenways the backbone of the cycling network in Guangzhou.

### Public bike system connect to Bus Rapid Transit system

A public system was built in the eastern part of central Guangzhou, connecting the bus rapid transit (BRT) system with the surrounding neighbourhoods. Guangzhou's BRT corridor has bike lanes on both sides of the road. At 22 of 26 BRT stations, public bike stations are located to provide passengers with 'last-mile access'. Public bike stations are dotted in the areas within five kilometers from the corridor, mostly in residential and business areas, to provide easier access to and from the BRT station. The BRT serves as a trunk line for longer trips, with the public bike system as a feeder. "Outside my apartment I take a public bike, I ride 10 minutes to the BRT station and then take the BRT to my office building. Without the public bike I probably would drive a car", according to Lulu Wen.

The first phase of the system was implemented in June 2010 and within two months was expanded to 5000 bikes at 113 public bike stations. At BRT stations another 5500 private bike parking stands were installed to allow for convenient chain mobility for cyclists on private bikes. In the first years of operation the average number of daily trips reached 21,000, with 45,750 people registered on the system. Surveys have shown that most public bike users previously used the overcrowded bus system. More than two thirds of Guangzhou's bike sharing trips were previously made by motorized transport saving an estimated 636 tons of CO<sub>2</sub> per year. Only 10% shifted from driving a car and only 10% swapped their private bike for a public bike.

Bicycles can be rented from docks at every station by swiping the city transportation card, which is also used in bus, metro and convenience stores. The first hour of use is free, with a small fee for 2 hours (1 RMB – 0.15USD), to encourage short-term use. For longer use, mainly recreational, a fee of 3 RMB/hour (0.45USD/hour) is set. A deposit of 300RMB (50USD), when registering, prevents theft of the public bikes.

The system was initiated by the Guangzhou government and operated by a government-owned public bike company. Recently Guangzhou's bus company, also operating on the BRT, took over the public bike company, making integration and coordination much easier. Subsequently plans were announced to expand the system with more stations and bicycles in the near future.



**Figure 9.** Integrated transportation: Guangzhou public bikes, protected bike lanes and the bus rapid transit (BRT)

**Figure 10.** Cycling along Zhongshan avenue, one of Guangzhou's busy traffic arterials, has become a lot safer and more pleasant with public bikes and this greenway

**Figure 11.** A well-designed bike lane runs along this public bike station

**Figure 12.** Public and private bike users share the protected bike lane along Guangzhou's BRT corridor

**Figure 13.** Small-sized public bike station in residential area, connected to a separated bike track

In 2008, Hangzhou (Zhejiang Province) was the first Chinese city to implement a public bike system. After its success, many cities followed suit. Currently 45 cities in China operate 51 public bicycle systems with more than 220,000 bikes in total, including China's big cities Shanghai, Beijing and Guangzhou. Every month cities across China expand existing public bike systems and open new systems. The existence of public bike systems often urges city government to expand and improve existing bike lanes as well.

Guangzhou's concept of connecting to public transport system was unique, but is now being copied in other Chinese cities. Most cities have chosen stations across the entire city or certain city districts, like Paris and Barcelona, to provide coverage for trips in any direction. Both models provide sustainable transportation and greatly improve cycling conditions for its residents.

### A revitalized cycling culture

Despite government neglect in the preservation and improvement of cycling conditions in Chinese cities, some cities have started building high-quality cycling infrastructure. With greenways and a public bike system, Guangzhou has shown that cycling is an integral part of city life and urban transport. There is a long way to go to improve and expand Guangzhou's greenways and public bike system, and make them convenient for all to use. But what can be seen is the revival of a cycling culture as a result of these projects. The successive rapid dispersion of greenways and public bike systems in other Chinese cities, after Guangzhou's successful projects, gives hope for the preservation of China's cycling culture and its image as a bicycle kingdom.

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