



中国广州政府

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- Guangzhou Municipal Government Representative
- CPPCC Vice Chairman of Guangzhou, China
- Director of Guangzhou Communications Commission

Introduction to Guangzhou Bus Rapid Transit





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Background of Guangzhou



Guangzhou BRT

- Planning & design
- Infrastructure & operations
- Impacts



Future Perspective



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Future Perspective





- ❑ **Third largest city in China and the economic, political and cultural center of southern China**
- ❑ **Population of 16 million**
- ❑ **Vehicle ownership of 2.44 million**
- ❑ **14 million public transport trips per day**
- ❑ **Public transport accounts for 60% of motorized trips**



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Background of Guangzhou



Guangzhou BRT

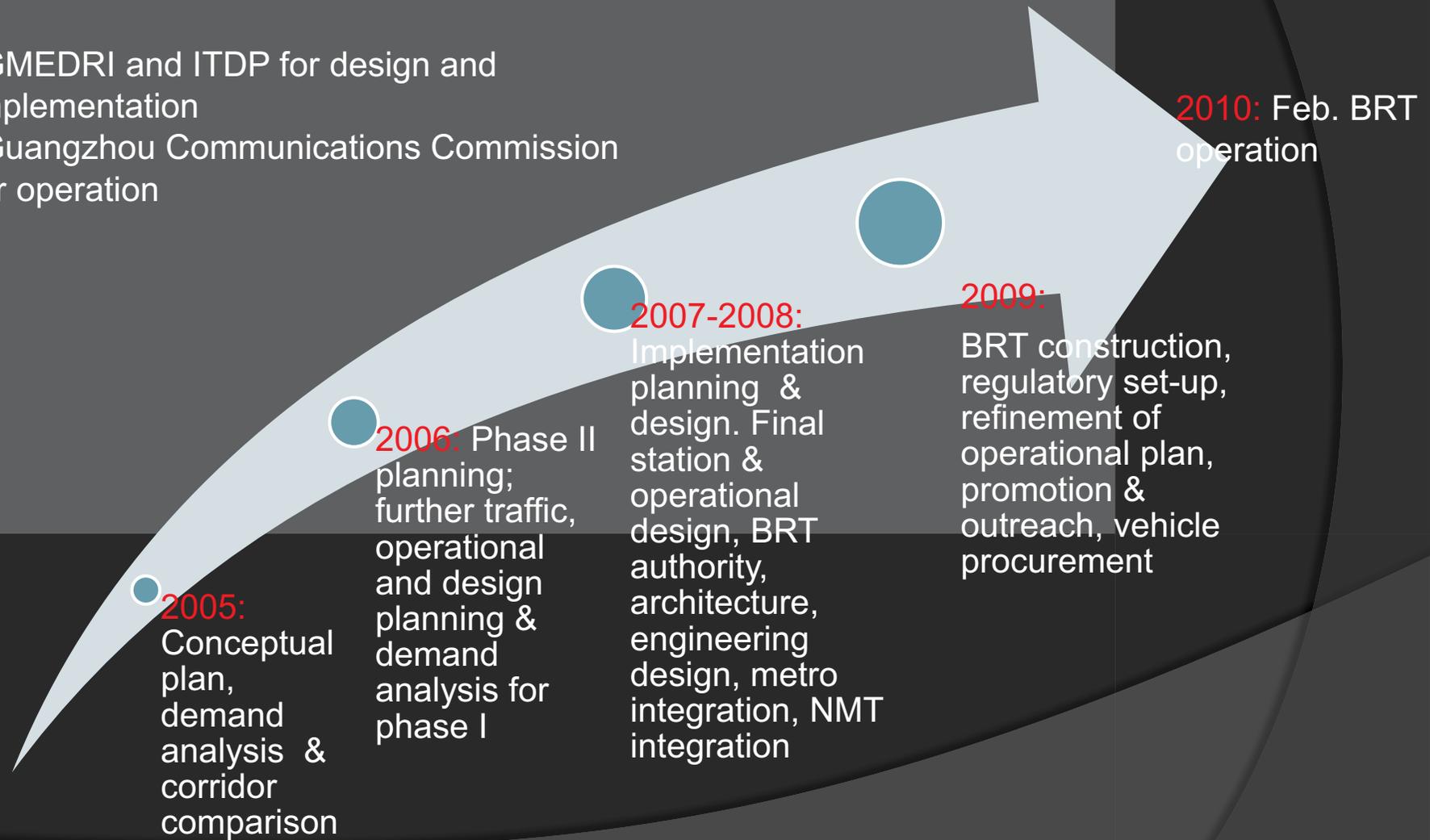
- Planning & design
- Infrastructure & operations
- Impacts

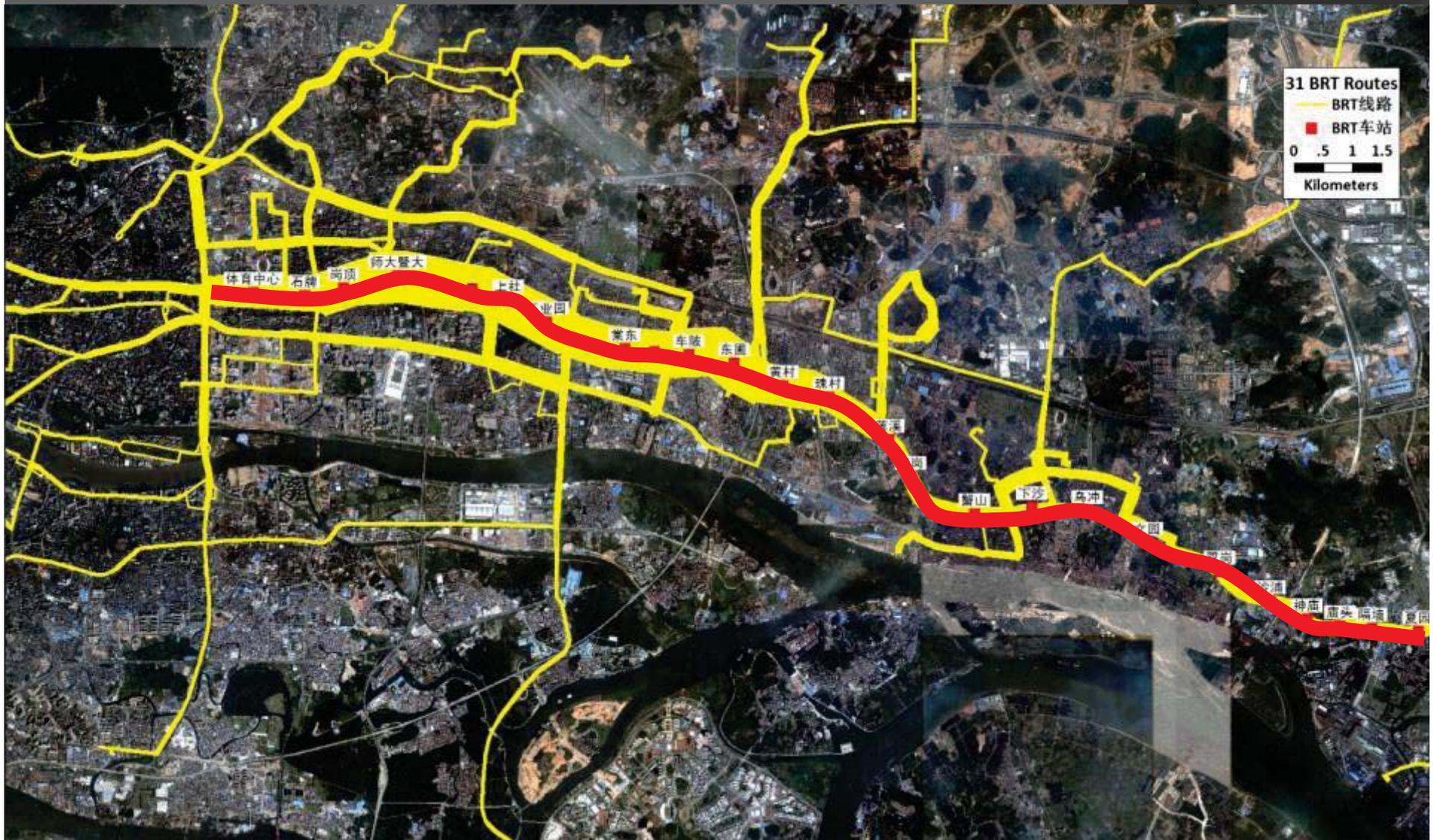


Future Perspective

Steps in the Guangzhou BRT planning process

- GMEDRI and ITDP for design and implementation
- Guangzhou Communications Commission for operation





□ Total length of BRT corridor is 22.9km, with 273km of roads in Guangzhou covered by BRT service



□ 26 BRT stations along the corridor with 31 BRT routes and 958 BRT buses



- **The Guangzhou BRT has an average daily ridership of more than 850,000 boarding passengers**

Peak throughput (passengers/hr/direction)

	Bogota: 33,500 South of Calle 76 stn, 22-Jun-11 AM peak to south, 30,500, but North of station has more demand (Jun-11)
	Guangzhou: 29,900 30 May 2012, east of Shidajida station, AM peak east-west (Jun-12)
	Istanbul: 18,860 East of Cevizlibağ station, W-E, AM peak, 6-Jul-12 (Jul-12)
	Lima: 13,950 South of Uni station, N-S, AM peak, 2011.6.24. PM peak 9,700 Uni Stn S-N (Jul-11)
	Seoul: 8,400 2011.1.19, south of Hunsung Univ. Samseongyo station, north-south, AM peak (Jan-11)
	Xiamen: 8,360 West of Wolong Xiaocheng, east-west, AM peak, 10-May-12 (May-12)
	Cali: 7,750 South of Cl.13 Cra.8 Centro station, PM peak, N-S, 17-Jun-2011 (Oct-12)
	Urumqi: 6,950 North-south, AM peak, 24-Sept-2012 north of Hongshan Stn (Sep-12)
	Brisbane: 6,500 Cultural Centre southward, 21-Oct-08, PM peak (Mar-12)
	Hangzhou: 6,300 10-Aug-11 AM peak Wulin Guangchang Bei, east to west (Aug-11)
	Mexico City: 6,100 19-Jun-2012 PM peak, North of Chilpancingo Station, S-N, survey by Ramiro Rios (Jun-11)
	Quito: 6,000 In corridor 3. Corridors 1 and 2: 3,500 (October 2008) (Oct-08)
	Dalian: 5,800 9-Sep-09, south of Cunliu station, into city, AM peak (Sep-09)
	Zhengzhou: 5,600 East of Jingwu Lu station, AM peak, 2011.1.5, west to east (Jan-11)
	Johannesburg: 4,510 West of Mavumbi Station 4-Jul-2012 AM Peak (Jul-12)
	Changzhou: 4,500 Huaide Qiao station, AM peak south to north, 2011.01.6 (Jan-11)
	Beijing: 3,800 South of Tiantan, N-S, PM peak, 10-Nov-10. Corridors 2&3 ~2,000, Sept. 2008 (Nov-10)
	Yinchuan: 3,600 West of Shangcheng BRT station (footbridge), Nanxundongjie, W-E, AM peak, 25-Sep-2012 (Sep-12)
	Kunming: 3,500 Jinmafang station, Jinbi Road, PM peak, W-E, 29-Mar-2011 (Apr-11)
	Jakarta: 3,400 15 May 2012, south of Tosari station (line 1), N-S (Mar-12)
	Jinan: 3,300 East of Lishan Lu station, 2011.3.25, east-west, PM peak (Apr-11)
	Hefei: 2,700 5-Aug-11 PM peak, west-east, east of Feifengjie (Aug-11)
	Nantes: 2,100 Duchesse Anne Chateau, March 2011. Source: TAN. ITDP surveys June 2010: 1,200 (Jul-11)
	Yancheng: 1,300 South of Daqing Lu station, PM peak, south-north, 4-Aug-2011 (Aug-11)
	Bangkok: 1,200 18-Oct-11, PM peak, north-south, south of Arkan Songkroh (Oct-11)
	Amsterdam: 960 East of Hoofddorp Station, east-west, PM peak, 2011.6.27 (Jul-11)
	Cape Town: 750 Surveys 5-Jul-2012, PM peak (Jul-12)
	Nagoya: 750 Approximate (Nov-10)
	Zaozhuang: 700 Railway station, west-east, PM peak, 8-Oct-2010 (Oct-10)
	Chongqing: 600 11-Mar-11, Lianfangyuan station (Mar-11)

□ 3 times higher than the next highest-capacity system in Asia, and the second-highest capacity BRT in the world after Bogota's TransMilenio



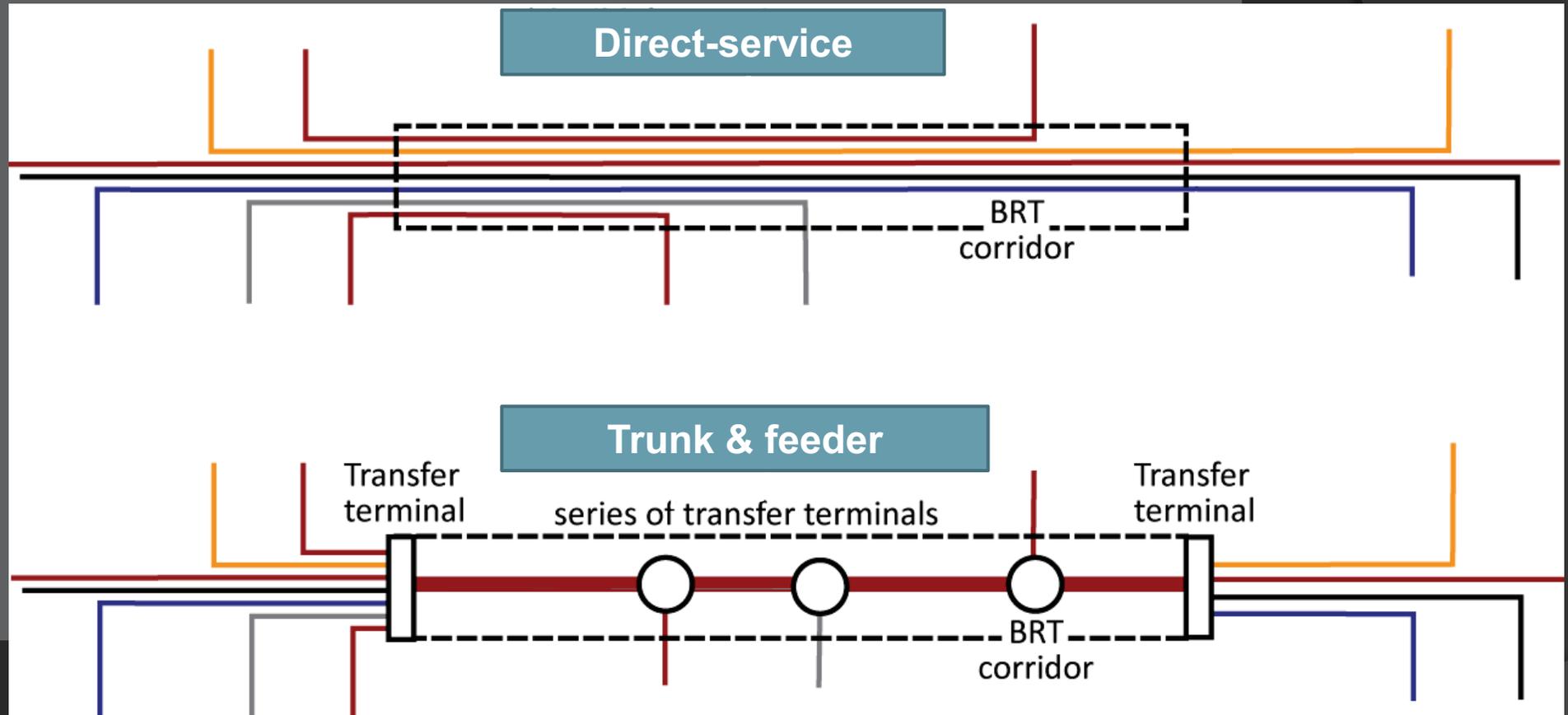
□ China's first BRT system with more than one bus operator



- ❑ China's first BRT system with stations designed based on passenger demand
- ❑ Gangding Station is 220m long and handles a daily passenger volume of 110,000 boarding and alighting passengers



- **Shidajida BRT station, one of the world's longest at 280m, has 350 buses passing in a single direction at the peak hour; one bus each 11 seconds**



- Guangzhou is the world's first high capacity direct service BRT system. Before Guangzhou, this high capacity and operational mode was thought to be impossible. After Guangzhou, nearly all new systems now use direct service.
- The Guangzhou BRT does not require any transfer terminals, hubs, or interchanges, which can save time on transfer



Karl Fjellstrom, itdp-china.org

□ BRT bus operating off-corridor



□ Changeable lane operation control technology at peak hour



□ BRT-metro connection at Shipaiqiao



□ BRT-metro-mall connection at Shipaiqiao

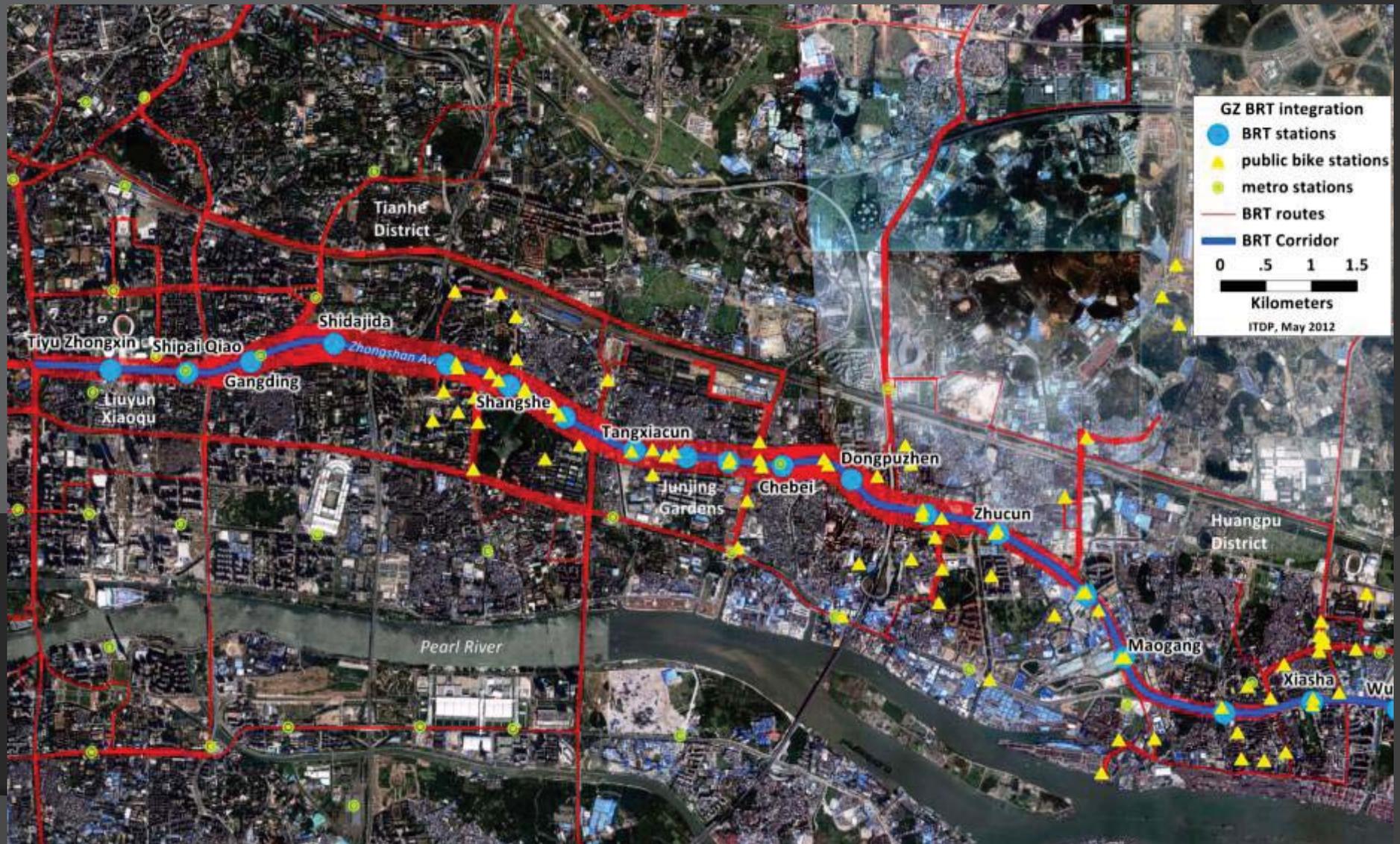


- ❑ Public bikes at Huajing Xincheng BRT station. The bike lane is paved with asphalt and separated by a line of trees

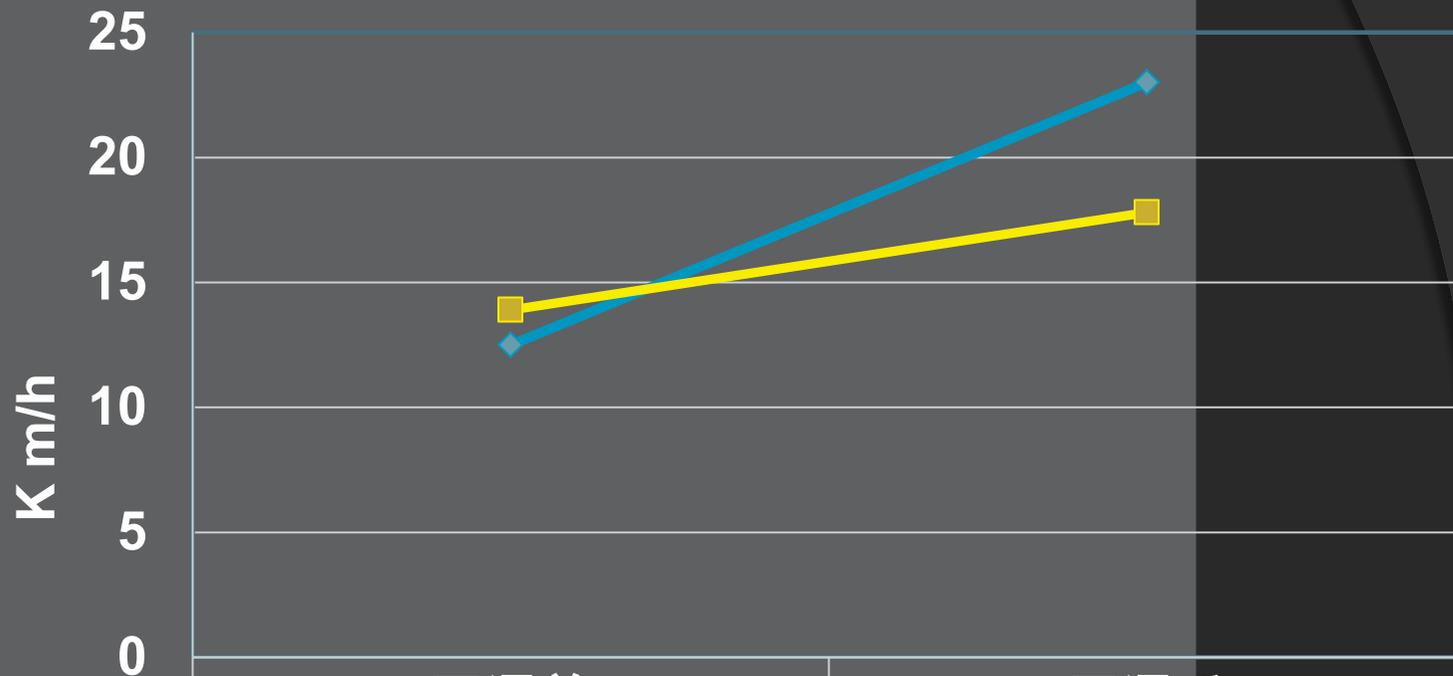


- ❑ The BRT and integrated bike sharing system is encouraging the development of new bike facilities

□ 113 bike sharing station along the BRT corridor with over 5,000 bikes



Vehicle speeds per hour, before and after BRT



Bus
Private
vehicle

◆ 公交车辆
■ 社会车辆

开通前 Before

开通后 After

12.5

23

13.9

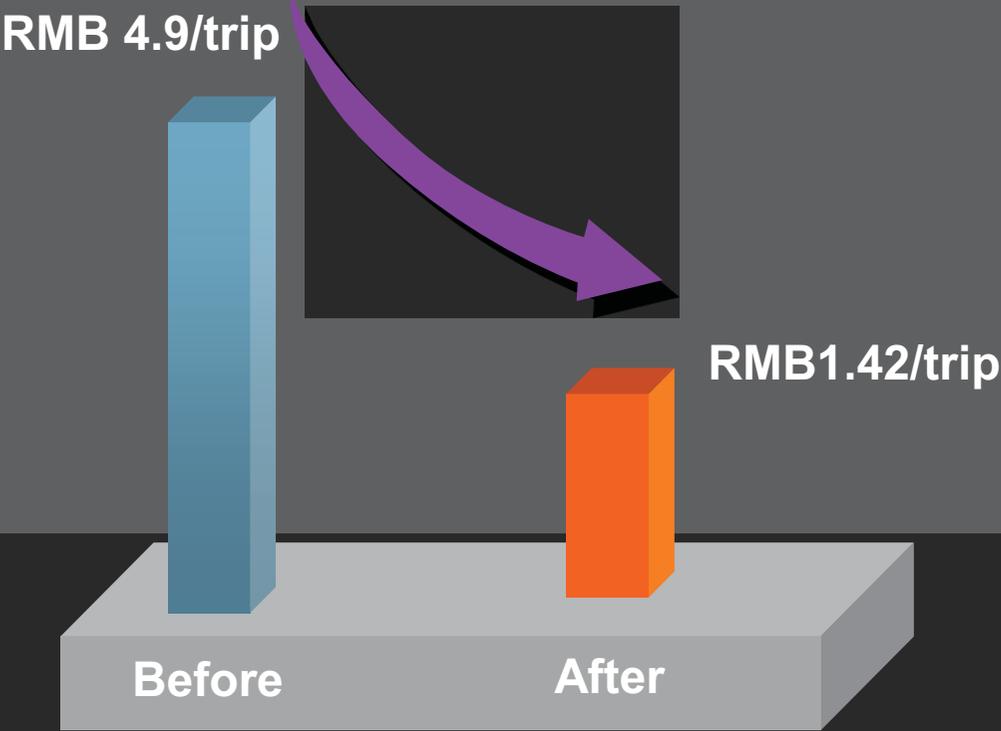
17.8

Bus and car speeds have significantly increased along the BRT corridor



- **6.63 minutes average passenger time saved per trip**
- **32 million hours in passenger time savings per year**
- **Time savings value benefit of RMB 800 million (US\$128 million) per year**

Before and after BRT cost per trip per person





□ GBRT provides an affordable public transport service option to more than 300,000 low income residents along the corridor

Before BRT



After BRT





□ Before BRT



□ After BRT

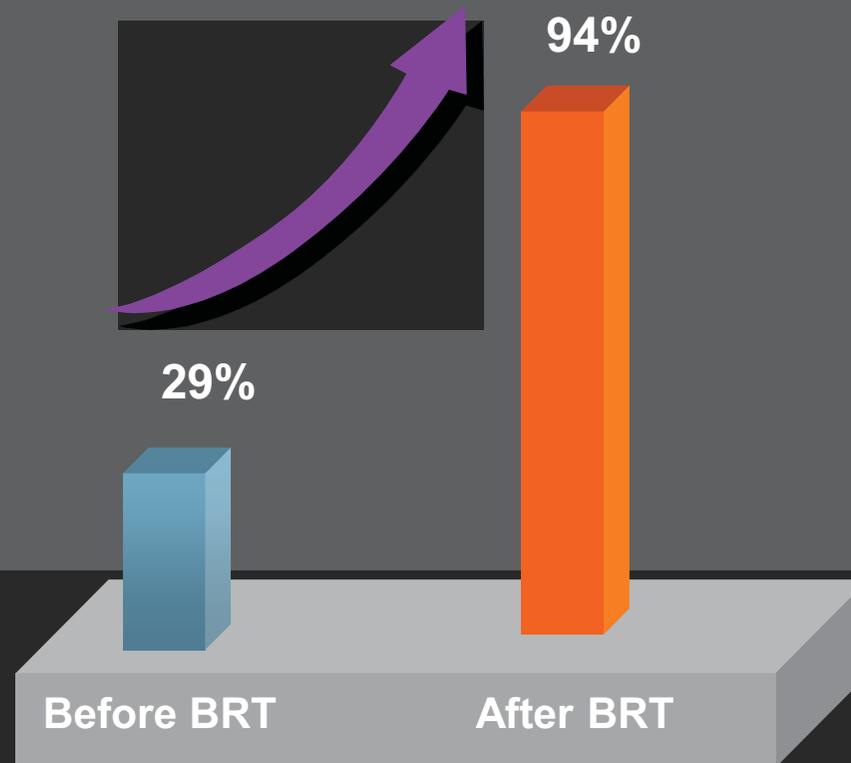


□ Before BRT



□ After BRT

Before and After BRT: Residents' satisfaction of public transport service





- ❑ **Energy consumption of buses reduced by 4.3%**
- ❑ **CO2 emissions per person per trip decreased by 31.5%. Reduced CO2 emissions and benefits for the city environment**
- ❑ **Reduce an average 86,000 tonnes of CO2 emissions per year over the first decade of the project**



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- ❑ **Control the volume of small & medium size vehicles**
- ❑ **Implement parking price differentiation & improve the city traffic conditions**
- ❑ **Support the low carbon emission public transport development**
- ❑ **Reduce CO2 emissions and change the city environment**

Guangzhou Geenways



Guangzhou Geenways



Thanks !