

Guangzhou Case Studies: Proposals for Specific BRT and Metro Stations

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Summary of Contract

Work directly with the Metro Design Institute on bike-transit center concepts for a selection of 1 to 2 metro stations, and with GMTDC on bike-transit center conceptual designs for a selection of 1 to 2 BRT stations. Include preliminary observations / options regarding physical infrastructure, capital costs, running costs, revenue model, regulatory environment, environmental factors, user data, and industry players.

The team may decide that rather than considering both a metro and a BRT station, it would be better to focus during this visit on just one example metro or BRT station, where all of the key aspects (infrastructure, financing, industry, regulation, and operation) are covered at a conceptual level. This can be determined after arrival.

Present and overlay Bikestation's best practices in bike-transit center design in the context of Guangzhou, including the preliminary observations for the selected metro and BRT station(s) mentioned above, in various forums. It is anticipated that these forums will include a presentation to a moderately high level official audience, 1 to 2 presentations to a primarily technical audience from within related government bureaus and design institutes, and possibly a more general public audience hosted by a leading local university, though this latter presentation is a relatively lower priority.

Present Terms of Reference for the Next Steps to Implementation.

Overview of Methodology

- Studying demand in different stations – determined by current demand and assuming latent demand
 - Surveys indicated 2 main problems that bike-transit centers can address: not enough bike parking, and lack of security/high theft environment
 - **Recommendation: create bike-transit centers along the BRT and Metro lines at every station. Should be secured and guarded.**
 - Related policy issue: banning bicycles on some Guangzhou roads
 - **New policy to promote bicycle as a means of feeding the transit system; increase bike routes on secondary streets and main arterials where necessary so that the route system is continuous. Ideally, create a bike master plan to guide all bike efforts in the short and long term.**
- Try to find different innovative solutions to act as pilot projects of what's possible elsewhere in the system
- Use existing models and apply to Guangzhou context
 - **Recommendation: Existing models nationally and globally are very appropriate for the Guangzhou context; use many of these guidelines to efficiently develop Guangzhou system with fewer cases of trial and error.**

Case Study BRT and Metro Stations

- Gangding Station – Largest station and highly congested. A lot of apparent demand and wide area underneath pedestrian bridge (because of escalator). This is a good case study of building a bike-transit center into new construction.
 - **Recommendation: Need to figure out who will maintain the escalator and how they will do it to ensure the bike-transit center is built to accommodate that maintenance.**
 - **Recommendation: Talk to landowners in area to create future bike parking centers. Limited space and much demand means that this facility will be full immediately.**
- Huajing Xingcheng – Demand present, existing pedestrian bridge has space underneath with the unique challenge of an elevator. This is a good case study of building a bike-transit center into existing structures, or adaptive reuse.
- Tang Xia Station – Large demand (large parking facility behind market full). Mixed use land use. Site 1 (north side) is free standing fully enclosed. Site 2 (south side) is smaller and perhaps open on one side to test out shorter-term parking scenarios.
- Xiao Bei Metro Station-Strong political support, existing plans for bike parking, under construction.
 - Per Metro representative, all Metro stations are now building in bike parking. Will be of the inexpensive, open variety—not solving theft concerns, and not creating efficient use of space
 - Also per Metro representative, BRT bike parking even in proximity to Metro stations will not be managed by Metro

Facilities

Recommend adhering to design standards listed below:

- Double-tier rack system (or even 3-level where possible and appropriate) – maximize space per bicycle stored, ability of people to self-serve (freeing up attendant), and tidiness. Technologically advanced systems attractive and very durable. (Such as BJGL Anda Parking Co. Ltd.)

- Mostly/fully enclosed glass or see through walls – Adds security and natural light. Make sure any materials used for the enclosure have small enough openings to create a high level of security.
- Smart card system – Short or long term integration with BRT/Metro systems. Facilitate future bicycle rental system.
- High quality, modern design
- Access and flow planning. Create a plan for how people will get to the facility and how they will flow within the facility to maximize efficiency and minimize confusion.
- Other, including lighting and standard signage. Well-lit facilities are both more secure and of greater use at all hours of the day and night. Standard signage will create a professional atmosphere and consistent expectations and clear instructions for users of the facility.

Programming/Services

- May be slightly different at each facility
- Parking, mechanical, rental/sharing, education/information
- Floor plan design of each facility will not only be unique due to space availability, but due to differences in programming: for example one station may have a larger space dedicated to parking and another will have a larger space dedicated to repairs.

Operational Plan

- Must be integrated as part of the transportation system
 - **Recommendation:** Should be subcontracted to professional company who manages the **whole system** and not individual street level organizations
- Financial Plan – must these facilities be profitable, break even or, like transit, require government investment? **Recommendation: an initial financial plan is necessary to understand the economics of the facilities. There are existing models to help this process.**
 - Parking, Rental, Advertising and repair revenue
 - Rates: **Recommend consistent rates throughout the system, which will achieve a professional atmosphere and consistent expectations and also reduce the potential for theft in the system.**
- Standard Operating Procedure – check-in/out system, cleaning, maintenance, repair
 - **Recommend: develop a standard operating procedure manual for the bike-transit center system**

Recommended Next Steps

- **Conceptual designs**
- **Create financial model**
- **Create and get permission for suggested Operational Plan**

Bottom Line:

Implementing these recommendations will

1. **Meet Guangzhou policy objectives of feeder system to BRT and other transport**
2. **Provide the population with convenient, safe way to access transit**
3. **Create facilities that are a source of pride to the city**

Selected summaries of various meetings:

Dai Wei

Some bike parking has been cancelled due to perceived lower levels of bicycle ridership and the policy by some in government to discourage bicycling (though after motorcycle ban, 20% went to cycling.) Believes that Metro could take responsibility for operations of a bike-transit center system. The street-level bike keepers could be integrated into the new system. Overall greatest concern was the financing plan.

Planning Bureau meeting

This philosophy:

1. Now trying to leave space for bike parking in “ancillary facilities.”
2. Not yet implemented—“agency paralysis”
3. Want to promote more convenient modes of transportation, considering balancing population and economic development—looking into models for this.
4. Are aware that joint development of transportation modes bring about better solutions.

Contrasted sharply with this philosophy:

1. Bicycles should be banned and everyone walks, drives auto, or uses public transport.