

Study on the strategy of water supply security system in Huangpu District, Guangzhou

广州市黄埔区供水安全保障体系策略研究

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01 Study on the background (研究背景)

Since 2015, the economic and social development of Huangpu District has been rapid, and its comprehensive influence and functional positioning in Guangzhou and even the Guangdong-Hong Kong-Macao Greater Bay Area have been continuously improved. At the same time, the population and industrial scale of Huangpu District continue to expand, and the demand for water supply is increasing day by day. The water supply source of Huangpu District of Guangzhou is relatively single, and it depends on the water supply outside the district, and there is no backup water source in the district, so there is a certain risk of water supply security.

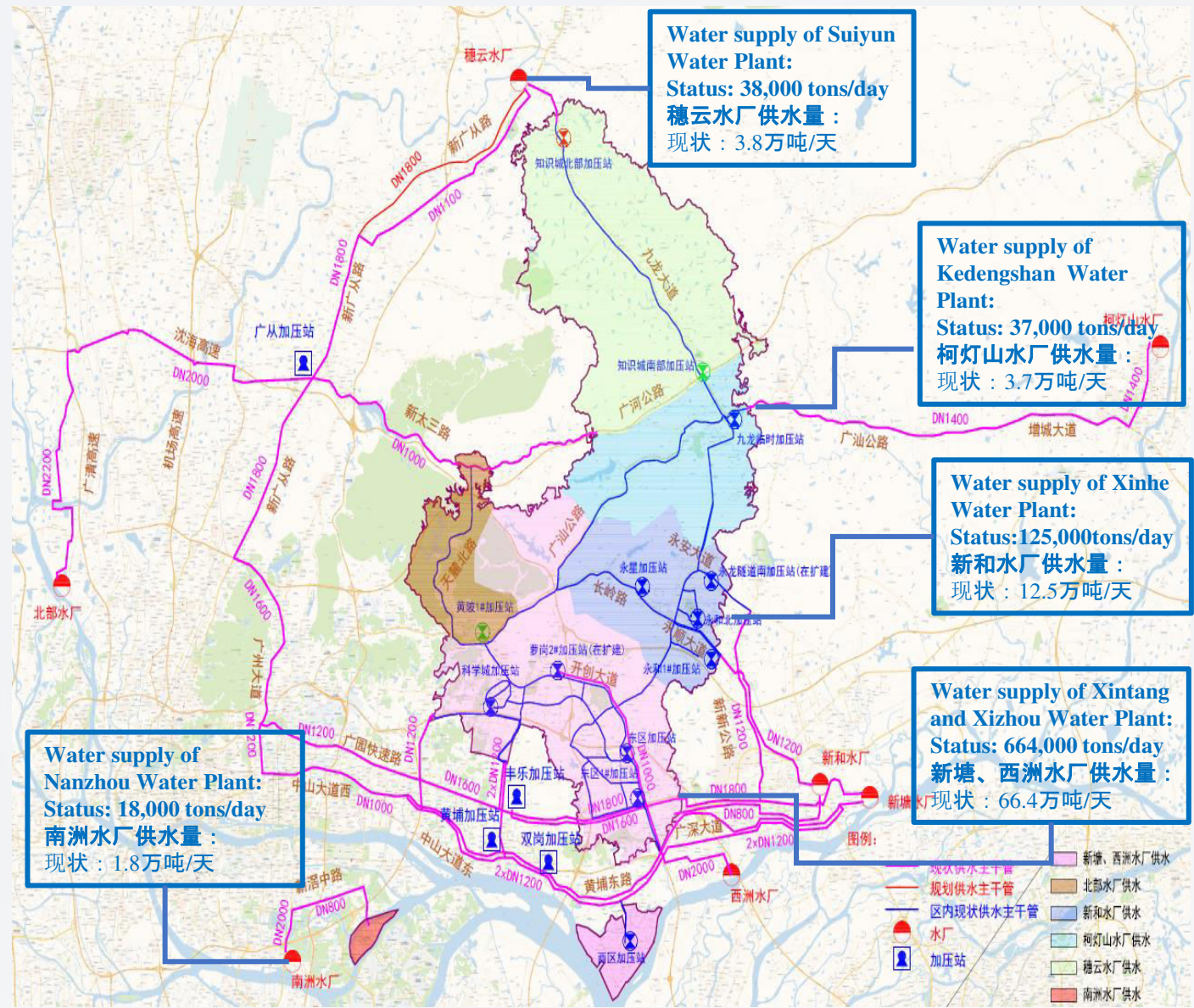
自2015年以来，黄埔区的经济社会快速发展，在广州市乃至粤港澳大湾区的综合影响力和功能定位不断提高。同时，黄埔区人口、产业规模不断扩大，供水需求量日益增加。广州市黄埔区供水水源较为单一，依赖区外供水，同时区内无备用水源，供水安全有一定的风险。



02 Current water supply (现状供水情况)

At present, the water supply of Huangpu District comes from six water plants outside the district, XinTang, XiZhou, XinHe, KeDianShan, SuiYun and NanZhou, and through 12 pressure stations such as Science City pressure Station, the total water supply scale is 882,000 tons/day, the total daily water consumption is 707,200 tons/day, and the maximum daily water consumption is 880,000 tons/day.

目前，黄埔区供水来自区外新塘、西洲、新和、柯灯山、穗云、南洲6座水厂，通过科学城加压站等12座加压站配合加压供水，供水规模共计88.2万吨/天，日均用水总量70.72万吨/天，最高日用水量达88万吨/天。



03 Water supply problem (供水存在问题)

- **There is no suitable water supply in the area** (区内没有合适的水源)

There are 19 reservoirs in the area with a total storage capacity of 50 million cubic meters, which is difficult to meet the annual water demand of 258 million cubic meters in the area, and the water quality of most reservoirs cannot meet the long-term stable drinking water requirements.

区内共19宗水库，总库容5000万立方米，难以满足区内2.58亿立方米的年用水需求，且大部分水库水质不能长期稳定满足饮用水要求。

- **The external water source is single, mainly from the Dongjiang River, which is easily affected by salty tides** (外部水源单一，主要来自东江，易受咸潮影响)

The water supply in the district is dominated by DongJiang water source, and the water supply of XinTang, XiZhou and XinHe water plants accounts for 89.5% of the total water supply in the district. The water intakes are all located in the north main stream of Dongjiang River.

区内供水以东江水源为主，新塘、西洲、新和三座水厂的供水量占全区的89.5%，取水口均位于东江北干流，枯水期受到咸潮影响，存在供水风险。

- **There is no emergency water source** (现状无应急水源)

Huangpu District emergency backup water source construction conditions are insufficient.

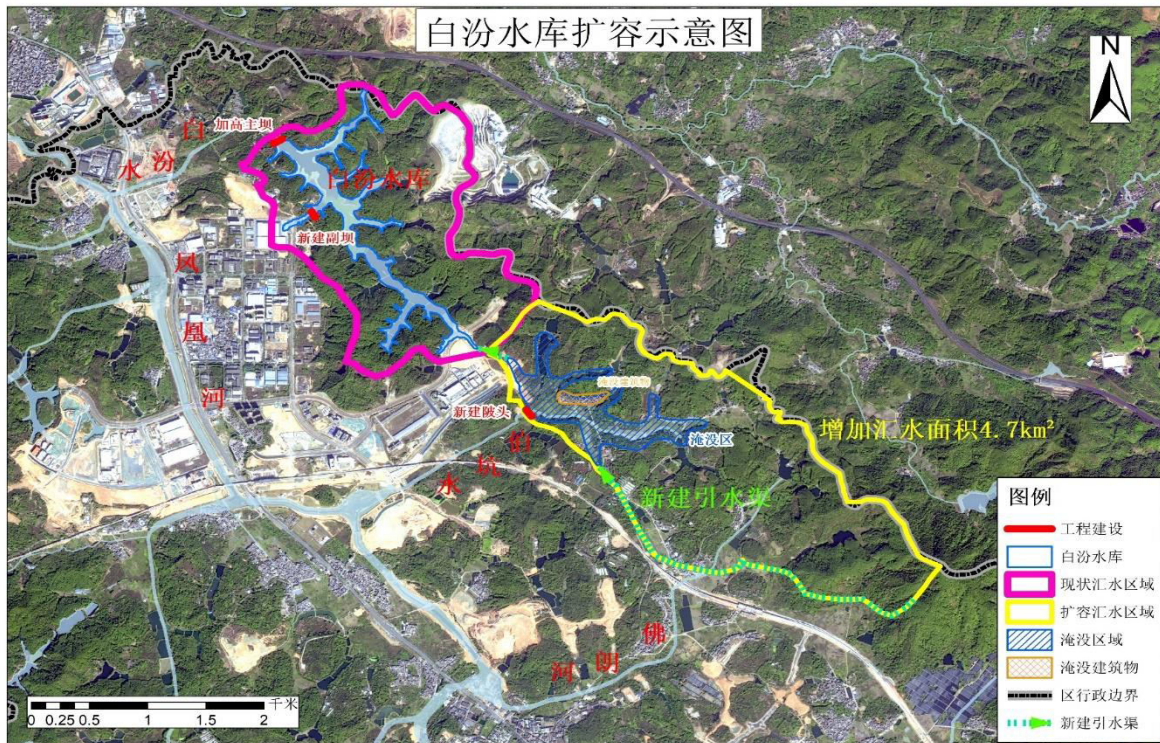
黄埔区应急备用水源建设条件不足。

04 Water analysis (水源分析)

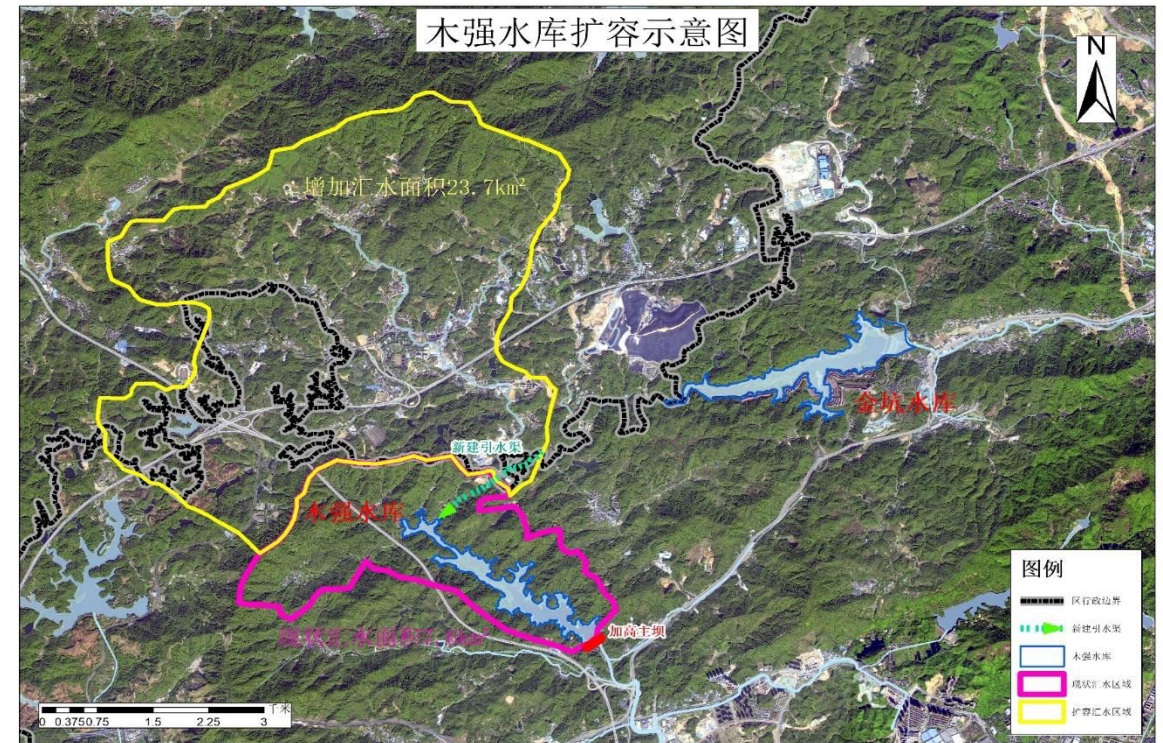
- Water supply from reservoirs in the area (区内水库供水)

From the perspective of reservoir capacity, rainwater collection area and water quality risk, MuQiang Reservoir and BaiFen Reservoir are constructed as drinking water source or emergency backup water source.

从水库库容、集雨面积、水质风险的角度考虑，将木强水库、白汾水库建设成饮用水源地或应急备用水源。



Baifen reservoir expansion diagram



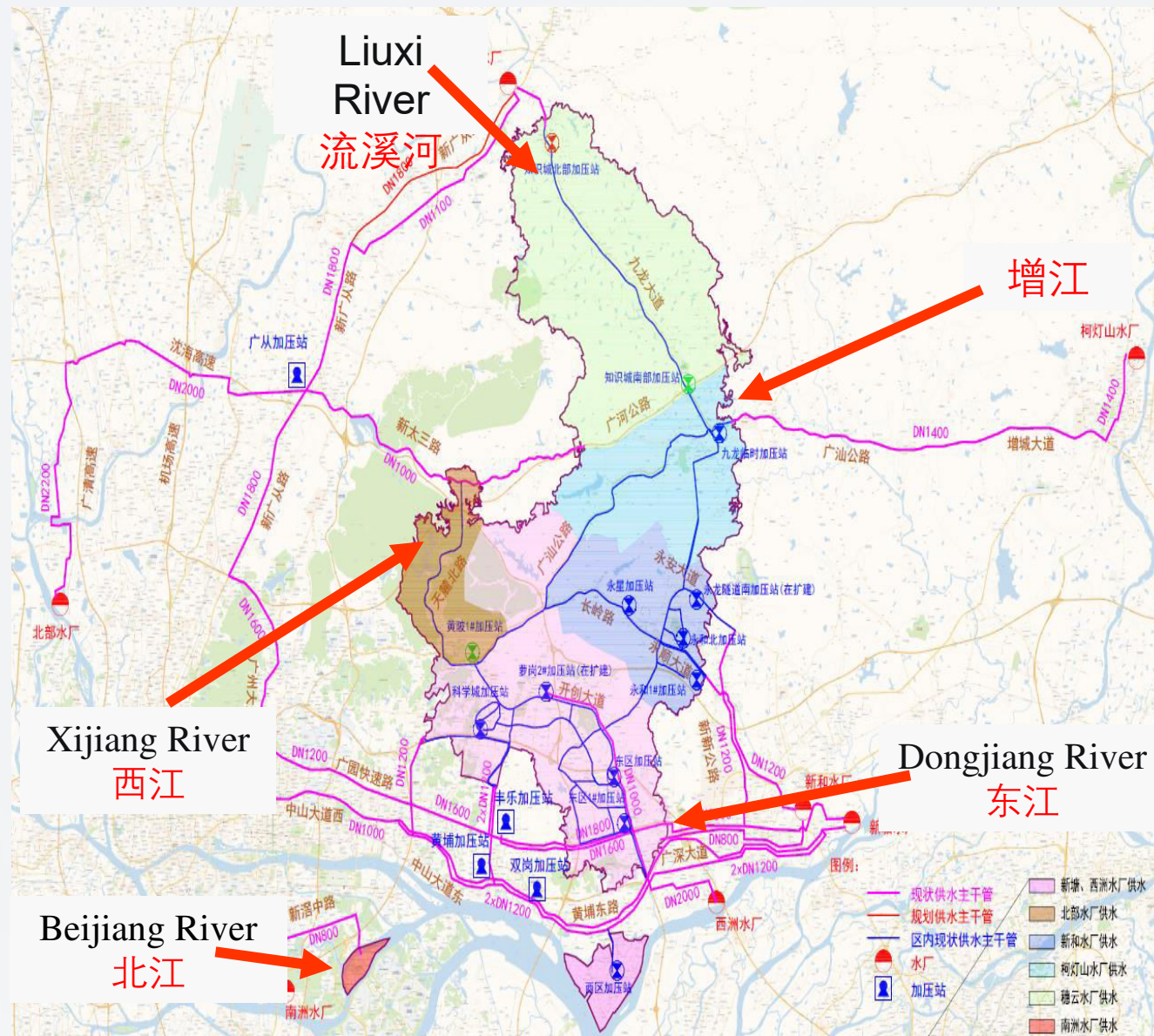
Muqiang reservoir expansion diagram

04 Water analysis (水源分析)

- Water supply from reservoirs in the area (多流域供水)

We plan to supply water directly to Huangpu District from TaiPing Development Zone Water plant in LiuXi River Basin and the north water plant in XiJiang River Basin, and realize the transformation from single basin water supply to multi-basin water supply such as Dongjiang River, LiuXi River, BeiJiang River and XiJiang River, so as to ensure the safety of water supply.

谋划流溪河流域太平开发区水厂、西江流域北部水厂直接向黄埔区供水，实现由单一流域供水转化为东江、流溪河、北江、西江等多流域供水，确保供水安全。



04 Water analysis (水源分析)

- Utilizing unconventional water resources (利用非常规水资源)

With the sewage treatment plant as the center, the pipeline network will be laid to use the unconventional water resources with water quality up to the standard for industrial, municipal and river replenishment.

以污水处理厂为中心，铺设管网将水质达标的非常规水资源用于工业、市政、河道补水等。



Municipal water intake point (市政取水点)



River recharge (河道补水)



Industrial water (工业用水)

In the face of water supply risks, actively explore water supply sources. The water sources outside the district come from XiJiang, DongJiang, BeiJiang and LiuXi rivers to reduce the risk of water supply; The district plans reservoir water plants, builds backup water sources to improve water supply security, allocates and utilizes unconventional water resources to create the city's "second water source", alleviates the water supply pressure of conventional water resources, forms a water supply pattern with multiple basins and multiple water sources, builds a comprehensive and three-dimensional water supply security system, improves the resilience of the water supply system in the district, and ensures water safety.

面对供水风险，积极探索供水水源。区外水源来自西江、东江、北江、流溪河，降低供水风险；区内规划水库水厂，建设备用水源提高供水安全保障，配置利用非常规水资源，打造城市“第二水源”，缓解常规水资源供水压力，形成多流域、多种水源的供水格局，打造全方位、立体的供水安全保障体系，提高区内供水系统的韧性，保障用水安全。

Thanks for listening!

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