

CHANGZHOU

RAILWAY STATION NEIGHBOURHOODS ON A CHINESE SCALE

How do you plan a sustainable urban development strategy in the Chinese high growth context?



Presentation document [Fact Sheets]



Foreword

Changzhou's local authorities, represented by the town planning department, in association with Shanghai's Tongji University, have asked the French association "Les Ateliers Internationaux de Maitrise d'Oeuvre Urbaine de Cergy-Pontoise" to organize a professional workshop.

This workshop takes place inside the frame of the French-Chinese cooperation's agreement, the DUD (Développement Urbain Durable - Sustainable Urban Development) and is therefore co-financed by the French Ministry for Sustainable Development and the AFD (Agence Française de Développement - French Agency for Development). This project is also awarded with the technical and financial help of the CSTB (Centre Scientifique et Technique du Bâtiment - Scientific and Technical Center for Construction Work), within the frame of its project "Chinese Eco-cities and future sustainable building".

Changzhou is going through a strategic period: every aspects of the town's development are vigorous, the railways are developing and the main development options remain wide open.

The workshop's goal is to develop a tool box with innovative projects based on the following subject: "Rail station neighbourhoods on a Chinese scale": How to define a sustainable urban development strategy in a swiftly growing country?" The different teams will have to base their projects on the four following topics:

- Size and development's potential
- The importance of transportation
- A cross-referenced approach about sustainable development
- The question of identity

This document is a territory's overview. It is made of five themed notes in order to understand the context and the project's problematic. This document is for the selected participants of the Changzhou workshop that will take place from October 9th to the 23rd of 2010.

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GENERAL ASPECTS

Geographic situation

The Delta's scale

Administration's functioning

Population and society

Space and time

Changzhou urban evolution

Make Changzhou different

Halfway between Shanghai and Nanjing, Changzhou is one of the main cities inside the Yangtze delta and the Jiangsu area. It is a "medium-sized" industrial city, with more than 4 million inhabitants.

Located on the Yangtze's south bank, it has grown along the large canal linking Beijing to Hangzhou (Jing Hang Da Yunhe), and has a natural south border thanks to the Gehu and the TaiHu lakes.

Geographic Situation

中國 The “Middle Kingdom”



Located in east Asia, China is 9 677 009 Km² large, and has the third largest area in the world after Russia and Canada, with a population of 1,4 billion people (first rank in the world).

China is famous for many inventions such as: the compass, the printing process, paper, the bank note, pasta, gunpowder, etc....

Beijing, the capital, is China’s political and cultural center, whereas Hong-Kong and Shanghai are the economy’s driving forces.

Jiangsu province

It is China’s first province in terms of population density, outside autonomous cities like Shanghai, Beijing and Tianjin.

From 1978 on and the liberalization of the economy, Jiangsu experienced a powerful economic growth and became one of China’s wealthiest areas.

The historical activities are the textile industry and the food industry. But, from 1949 on, chemical industries, as well as electronic and automobile industries have developed themselves. Today, investors are particularly interested in solar energy.



Changzhou, Important city of Yangtze Delta

Also known as “The Dragon City”, Changzhou is one of the sixteen most important cities inside the Yangtze delta. It is located in the Jiangsu area, is 113km far from Nanjing, which is the administration capital of the area, and is 116km far from Shanghai.

The city developed itself on a flat relief, surrounded with rich land ; the population has extended on a North-South axis, with the Yangtze river up north and the Ge Hu and Tai Hu lakes south.

Key Features for Changzhou

Since 2002, the urban area’s extension is 10km² per year.

The population growth of Changzhou has decreased from 2% to 1,3 % per year (statistic of 2009). Still, the growth is slightly above national average.

In order to face the expected population rise due to the rural depopulation, which mainly occurs because of the growth of the employment rate (0,6% per year in 2007), 21% of Changzhou’s total investments are used to promote housing policies (2007).

A total of 14 million m² of housing were built, and more than 4 million m² of new apartments were put in the real estate market (statistics 2007).

The figure of trading are 8,33 billion USD and year growth of 20,7%.



The Grand Canal Beijing-Hangzhou

Key features for Changzhou

Population growth per year	2% - 1%
Urban center population	2,182 million
Urbanized zone surface	261,38 Km ²
Urban center density	83 (hab/ha)
GDP 2009 - billion	2 500 RMB
GDP per inhabitant -2009	56 851 RMB

The delta's scale

Geographic situation: The Yangtze delta ¹

Changzhou belongs to the Jiangnan, the delta area which is south of the river Yangtzi. The Yangtzi's course has many changes, as well as the courses of its affluents before they shift into canals. It is also characterized by a flat area, a soaked, hydro-morphic soil and inner lakes, like the Tai lake.

The Jiangnan is also an ancient settlement area where important rural areas have developed, in the shape of villages, or cross-roads, with a traditional rice growing activity. In order to control the flood risks and to efficiently distribute the water to the farms, a dense canal system was created which not only drains and irrigates the rice growing farms but also separates the farms from one another.

The important population density is nowadays slowly decreasing.



¹Carine HENRIOT (2010)



Shanghai

The "Great Shanghai": *Da Shangai* ¹

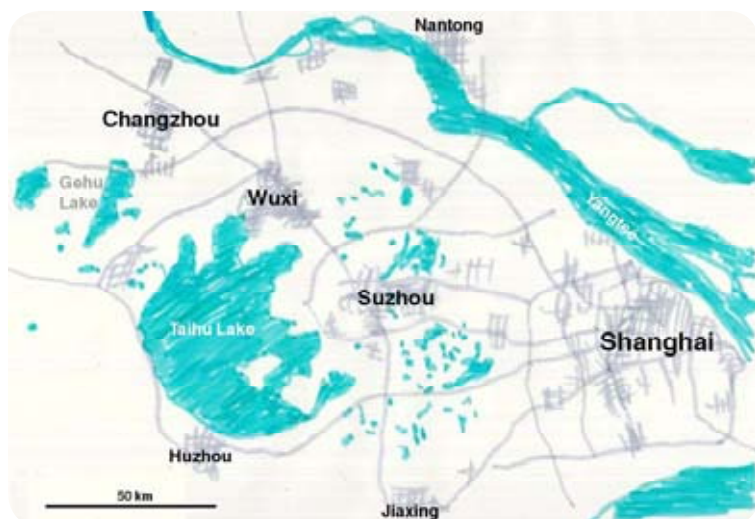
The Great Shanghai is a gathering of 16 cities inside the Yangtze Delta: Nanjing, Yangzhou, Taizhou, Nantong, Zhengjiang, Changzhou, Wuxi, Suzhou, Kunshan, Shanghai, Jiaxing, Huzhou, Hangzhou, Shaoxing, Ningbo and Zhoushan. This federation does not yet have a specific authority, because the cities have different legal status: province towns, prefecture towns or district towns.

The Great Shanghai federation gathers once or twice a year, mainly around topics like transport infrastructures connecting the megalopolis to the Yangtzi delta.

¹Carine HENRIOT (2010)

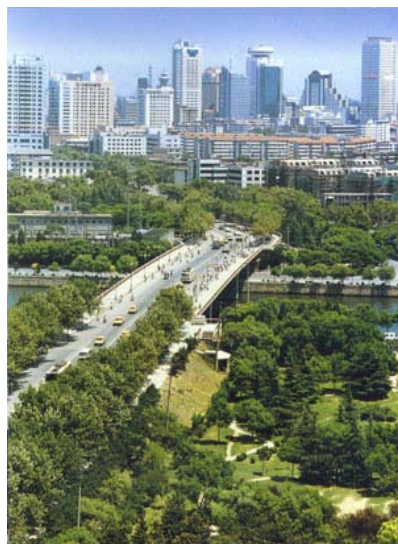


The delta's scale



WUXI

Wuxi is divided in two by the lake Tai Hu, and is close to Changzhou, in the west, and Suzhou, in the east. Up north, limited by Taizhou and the river Yangtze. South, the Zhejiang area defines the border. Due to its recent development, Wuxi is sometimes nicknamed "The little Shanghai". Wuxi is also a regional transport hub, with railways, roads, air traffic and river traffic.



KEY FEATURES comparison among cities

	Changzhou	Wuxi	Suzhou	Shanghai	Ile de France
Surface area (sq. km.)	4375	5182	8488	7037	12011
Surface of urban centre (sq. km.)	1872	1659	1430	2643	105
Population (Million)	4 352	6 195	8 260	19 210	11598
Density (inhab/ha)	10	11	9,7	27	9,6



Mathieu TREDEZ (2010)

SUZHOU

Suzhou is one of the oldest cities in the Jiangnan basin. Gateway and capital city to the industrial silk way, it also is a city of cultural interest, famous for its traditional gardens and its many canals (a map from the Song dynasty which reigned in the 11th and 12th century shows 314 canals). The city has the most important GDP of the Jiangsu area, and therefore ranks 25th in the whole country.

In 2005, the city hosted 36 million national and international visitors with an annual increase of 15%. Yet, only 3% of the city's income is generated by tourism, whereas 55% of it comes from industry, especially from Suzhou Industrial Park which was opened in 1999.



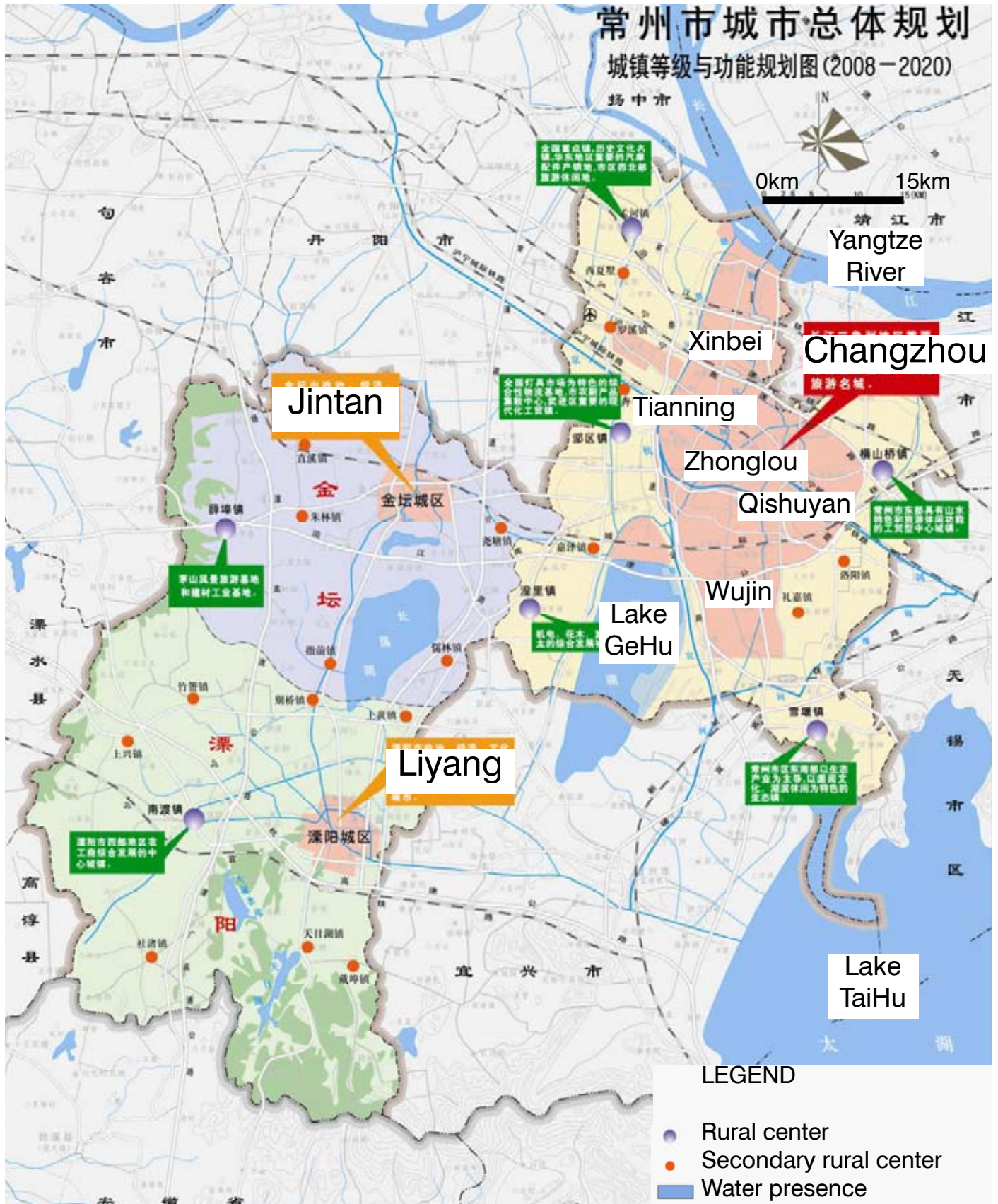
Mathieu TREDEZ (2010)

Changzhou_Politic administratition

Since 1953, the Prefecture-city of Changzhou has jurisdiction over seven subdivisions:

5 districts:
 district Zhonglou ;
 district Tianning ;
 district Qishuyan ;
 district Xinbei ;
 district Wujin ;

2 towns:
 Jintan Town ;
 Liyang Town.



Population and society

The «Blue Book»¹ 2009 shows that China censuses an urban population of 620 million people, meaning that 46% of its 1,4 billion inhabitants live in cities ; Therefore, it is the most important urban population of the world. According to the Blue Book, the urban population should rise to 52% in 2015 and reach 65% in 2030.

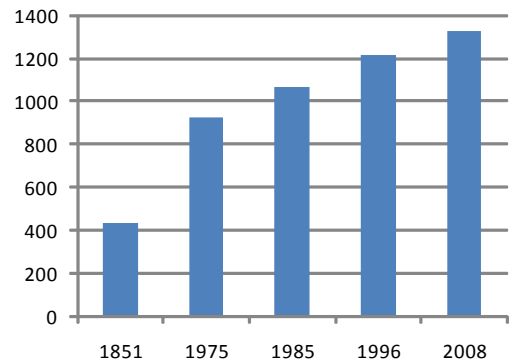
Rural depopulation causes an augmentation of inhabitants in Changzhou, which authority spreads over large rural areas in addition to the urban area. In 2009, there were 4,45 million inhabitants, 2,72 of whom lived inside the urban area, with an increase rate of 1,3%.² In 2008, Changzhou's population exceeded the 2020's forecast, which was 4 million inhabitants!

Changzhou's surface has an urbanization rate of 42% (1 872 km² - total of 4 375 km²). The national land use law prevents this rate to go any further.

The city's policy is to gather agricultural plots outside of the city, demolishing small buildings and creating a continuous urban area with new high buildings.

1 « Rapport sur le développement d'une société globalement aisée » publié par les autorités chinoises, publié par l'Académie des Sciences sociales de Chine
2 Changzhou statistical notebook 2010

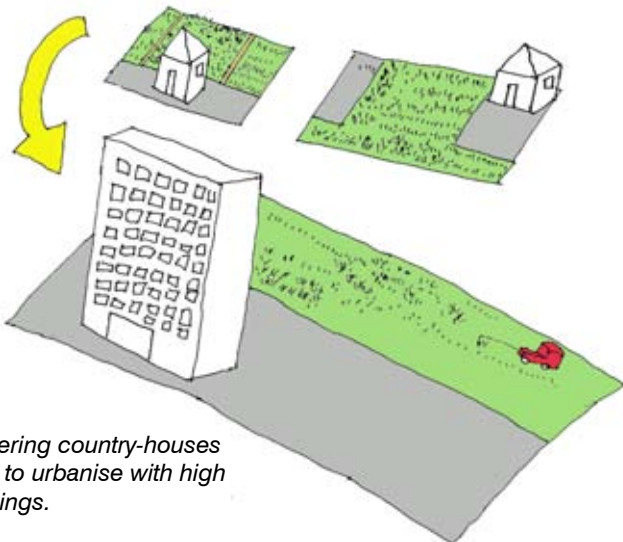
China's population millions



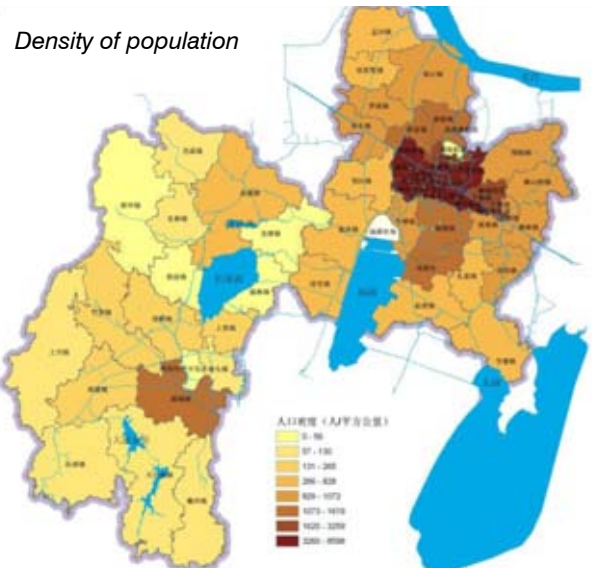
POINT OF VIEW «The only-child policy occurs in Jiangsu, but in some Chinese provinces, it is allowed to have two children. In Changzhou, if one wants several children, they have to give birth in Hong-Kong or pay a fee to the government; In any case, it means that one has to be wealthy to have more than one child in a legal way”.

DENSIFICATION

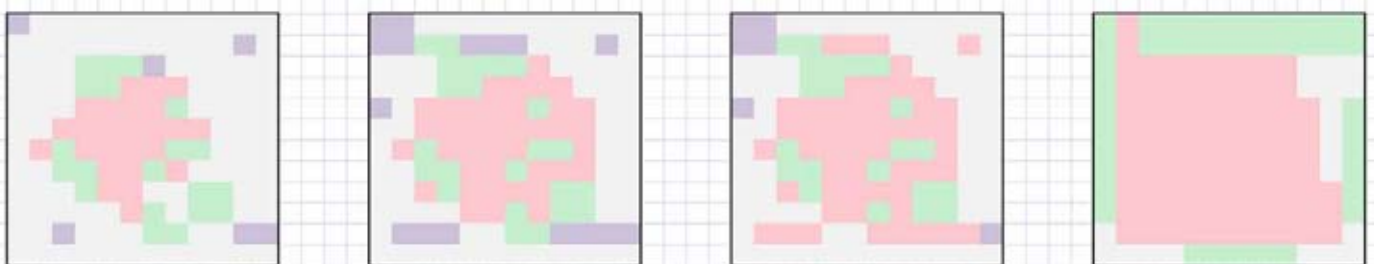
Since the urbanized area can no longer increase, every individual house located outside the urban zone is destroyed because of the economic and demographic growth, and large 20 to 40 floors buildings are built instead, in order to provide a home for the agglomeration's new inhabitants.



Gathering country-houses plots to urbanise with high buildings.



POINT OF VIEW «Empty buildings are still awaiting country people that move into town to find work»



Urban fabric
Agricultural area
Small country-houses



INCOME AND PURCHASING

In the "Blue Book", 10% of the Chinese population is said to (135 million people) live below the poverty line, which has been defined by international criteria (which is 1 dollar a day, as established by the World Bank). This number falls to 48 million when the Chinese criteria are used (3,7% of the population). 26 million of who live in the country, as opposed the other 22 million who live in the Middle Kingdom's large cities.

China's minimum wage is about 1000 RMB (100/120 Euros). Because Changzhou is one of the wealthiest cities in China, the middle class's income is about 4000 to 8000 RMB (500/800 Euros), and the GDP per inhabitant is 4737/month ; these features clearly depict the discrepancies in terms of income.

THE CITY NEVER RESTS

Every morning, people gather in the parks for their everyday gym, and, at evening the "social dance" has an important meaning. At the parks, singers sing while children play. In the market streets fresh fishes and the smell of the "baozis" of are attractive, restaurants and shopping stay open late at the neighbourhoods. The new and large malls, lit with the neons of hip and trendy stores, Changzhou's teens buy their outfit and frequently go to sing at karaoke (KTV).

LIVE IN CHANGZHOU

The government's help plan to promote housing access is composed of:

- Monthly state allowance for low income households (2500 families in 2007)
- 80.000 RMB allowance per low income family, in order to help them buy apartments which size must not exceed 90m2 and which price is about 300.000 RMB (3000 to 4000 RMB / m2). The government demands that the families remain the owners of the apartment for at least 5 years (5000 families in 2007)
- Construction of housings by the government for households which houses were demolished because of important urban projects (urbanized rural areas, building of avenues...)

Space and time

2100 BC - First Chinese dynasties
 1650 BC – Creation of the first fortified cities
 770-426 BC – Spring and Autumn Period
 5th BC – Beginning of Grand Canal construction

690 BC – Construction of the “Flooded city”, Yancheng, located in the Wujin district of Changzhou.

403-222 BC– Warring States Period
 221 BC– Foundation of the first Chinese Empire. Beging to building of the Great Wall.
 221 BC – Founding of Changzhou
 609 BC – Changzhou becomes a famous canal harbor for cereal, tea and fish transportation

1206 – Genghis Khan creates the Mongol confederation which rules over China.
 1377 – Bulding of the Nanjing Palaces .
 1369 – Nanjing: capital of China
 1407 – Building of the Forbidden City in Beijing.
 1421 – Beijing: Capital of China.
 1517 – Beginning of the trade with European countries. First commercial partner: Portugal.
 1839-1842 – First Opium war

1856-1860 - Second Opium war
 1905 - Railway linking Shanghai and Nanjing.
 1911 – End of the Empire
 1911-1949 – Republic of China
 1934-1937 – Long March

1937-1945 – Sino-Japanese War
 1945-1949 – Civil War between nationalists and communists

1949 – Creation of the People’s Republic of China, Mao Zedong is President,
 1951 – Annexation of Tibet
 1953 – First global population census (kept secret until 1982)
 1958-1962 – The Great Leap Forward
 1964 – First nuclear tests
 1965-1969 – The Cultural Revolution
 1971 – China joins UNO
 1978 – Launching of the Four Modernizations (Agriculture, Industry, National Defense, Science and Technology)
 1979 – Birth control measures - One-child policy.

1980 - Industrial development of Changzhou.
 1985 – Economic reforms in cities. 67 cities are added to the 31 previous ones.

1989 – Punishment of the students’ demonstration in Tian’an Men.
 1992 – Towards a socialist market economy
 1998 – The Asian crisis strikes China
 1999 – Violent demonstrations in Beijing in front of the UK and the US embassies.
 2000 – 5th Five-years plan for the economy (2000-2005).

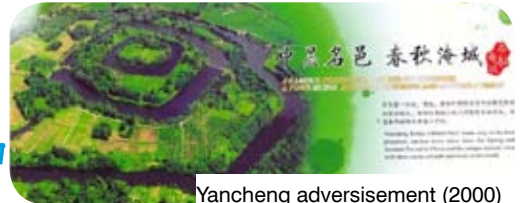
2001 – China joins the WTO.
 2003 – Beginning of the construction of The Three Gorges Dam

2002 - Launching of Changzhou’s Master Plan (2002-2008).

2008 – Beijing’s Olympic Games
 2010 – Shanghai’s World Expo

During the Spring and Autumn period, China is under Feudalism, and counts twelve states and feudal princes.

Yancheng: Ruins of the Yan city, created 2700 years ago. Thanks to its network of three canals, the king managed to hold the assaults of the Wu Kingdom during many years. Currently, it is a green park, which is part of a recently built touristic theme park and zoo.



Grand Canal (W. Alexander 1793).

The first Opium War was a conflict due trade interests between the UK and the Qing Empire. This war marks the beginning of the Empire’s decline.

12 000 kilometers towards the hinterland, the Long March was led by China’s red army and members of the Chinese communist party so as to escape the Kuomintang’s revolutionary army during China’s civil war. The Chinese Communist Party seized this occasion to promote its ideology.

Known as the Natural Disasters years. Significant institutional and politic changes that occurred during the Great Leap forward have partly caused China’s great famine. Officially, it has caused the death of 15 million people.

Currently, the canal is no longer a growth providing activity and is not as efficient a transport way as it was before. But, it could reinforce its attractiveness, as well as it could invigorate its dynamism, thanks to recent investments used for its dredging and its restoration.

During the Taiping Rebellion (1850-1860), one of the five palaces of the “Heavenly Kingdom” was built in Changzhou.



Industry in Changzhou

18th century _Sheng Huaixuan, one of Changzhou’s inhabitants is known as the father of Chinese industry. He first was a mining transportation engineer, and then developed eleven of the first Chinese industries.

1906 _First capitalist workshop (Jinyu Cloth Factory).

1920 _Textile and Food industries

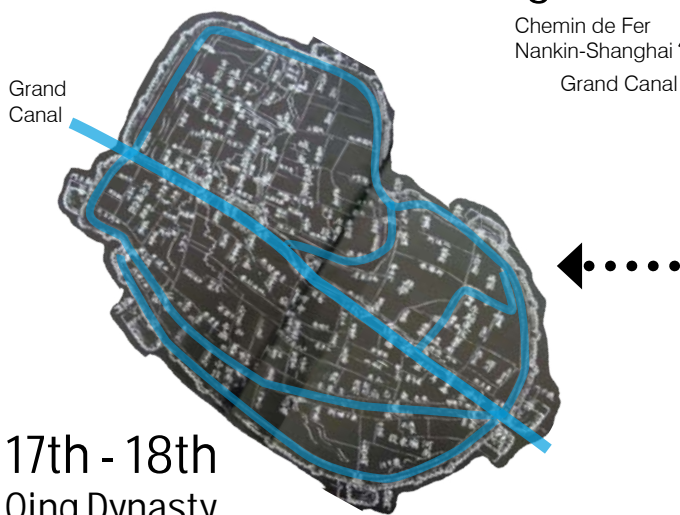
1930 _Textile mill, weaving and dying innovations

1980 _Changzhou is one of the first cities with foreign activities.

2004 _Creation of new industrial areas (Masterplan 2008-2020)

The 2008’s Olympic Games were held in Beijing, along with six other cities, in which the Chinese government decided to invest about 44 billion USD.
 Better city, Better life - Shanghai’s world fair is 5,28km2 large.
 In August, 40 million visitors had already attended the Expo.

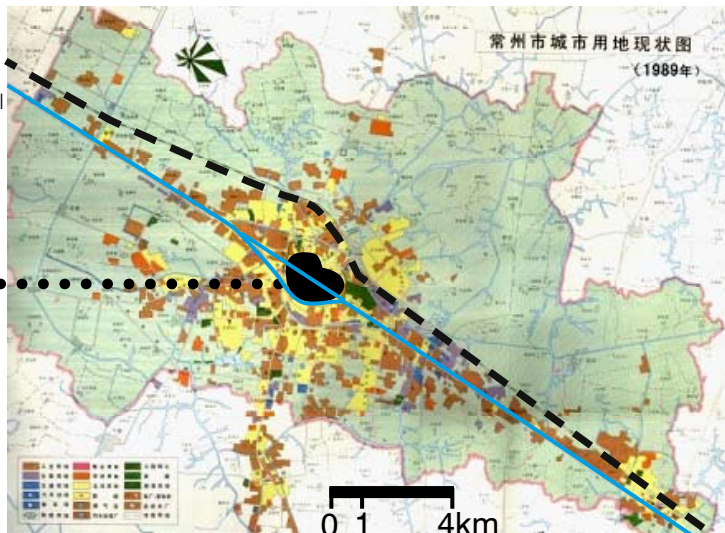
Urban evolution in Changzhou.



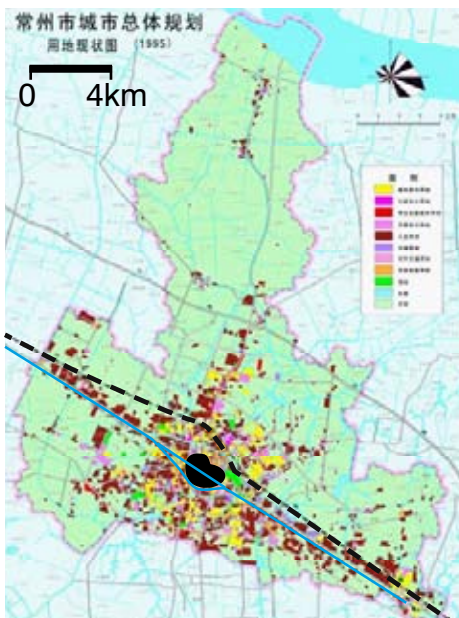
17th - 18th
Qing Dynasty

Fortified city, surrounded and crossed by canals.

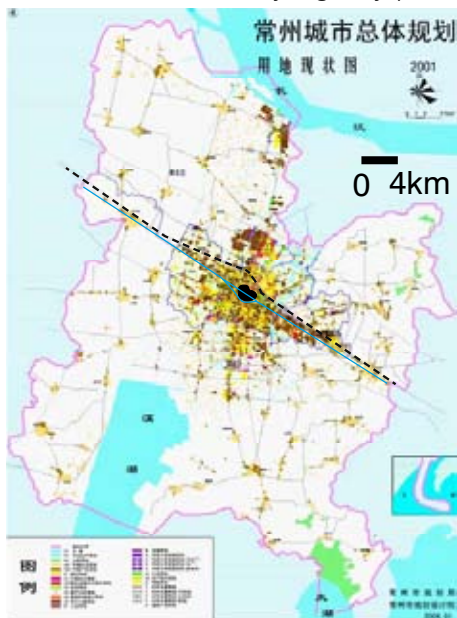
Chemin de Fer
Nankin-Shanghai
Grand Canal



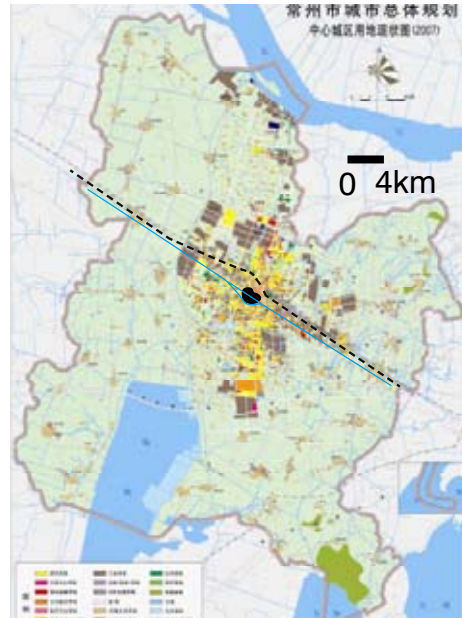
1989 East-West expansion along traffic ways (Great Canal, railway, highways)



1995 North expansion, towards the Yangtze River



2001 The territory acquires its current administrative borders (4375km²), with the Wujin annexation south.



2007 Urban densification and expansion towards the north and the south.



1920



1930 Hongmei park



1980



1940



1970

Grand Canal

East Door

Make Changzhou different



Shanghai is internationally labeled as a high-paced, a city “larger than life”. It is world renowned for its history, its varied architecture, nowadays represented by Pudong’s skyscrapers, facing the Bund.

Suzhou is well-known for its traditional Chinese gardens and canals which granted it the name of “China’s Venice”. For its inhabitants as well as for its plenty of tourists, the canals are as interesting as “Suzhou Industrial Park” which makes Suzhou’s GDP the highest of Jiangsu Province.

The densely populated and urbanized area of the Yangtze delta is a region that has played a most significant part in China’s history for a very long time. The three “sister towns”, Suzhou, Wuxi and Changzhou play a major part on a national scale given their industrial power, their history, and their tourism assets.

Amongst those cities, Changzhou’s identity is still a work in progress. The industrial city begins to take in consideration other aspects of its development. The quality of life aspect has developed, for example, in the “2009 China’s Blue Book”, which lists the assets of more than 200 Chinese cities, Changzhou ranks 22nd in terms of living environment quality.

Yet, one that arrives in Changzhou by train cannot be aware of that. The central station, which is the main gateway for passengers, does not represent the city’s identity. As a matter of fact, it might as well be located in any adjacent city.

The first visible symbols of Changzhou’s identity are found in tourism or recreational resorts such as Dinosaur Park, Wujin District, Tianning Park, and the Pagoda and also in the neons and the tall buildings... which are recently built symbols, sometimes far from the city’s center, and therefore not really representing the city’s whole image.

Other more significant symbols, such as the canals, the dancing in the parks, the electric mopeds, the rural elements inside an urban context, hair combs or paper crafts, the archeology’s artifacts shown in Wujin’s museum... are more genuine elements of the daily buzzing life taking place inside the neighbourhoods, beyond the main avenues.



The city still holds a strong identity, which can be seen in its hidden aspects, like in the old houses ornamental roofs, the calligraphy shops, the pastel paintings, the individual or collective vegetables plots. Because they suffer from the housing growth’s increasing pressure, these traditions are endangered and might very well disappear. As a matter of fact, heritage seems to live on through people, rather than through objects.



« Make Changzhou different » is a calling for to the artists, whom, after the Socialist realism implementation, and despite the creative burst following the 1980’s reforms and the liberalization of the country, remain quite imperceptible nowadays.

Reinforcing the city’s identity, with an emphasis put on an imaginary aspect of the city, outside the scope of these new tourism symbols, is a way to invigorate and protect its history, all the while allowing positive social impacts to occur.





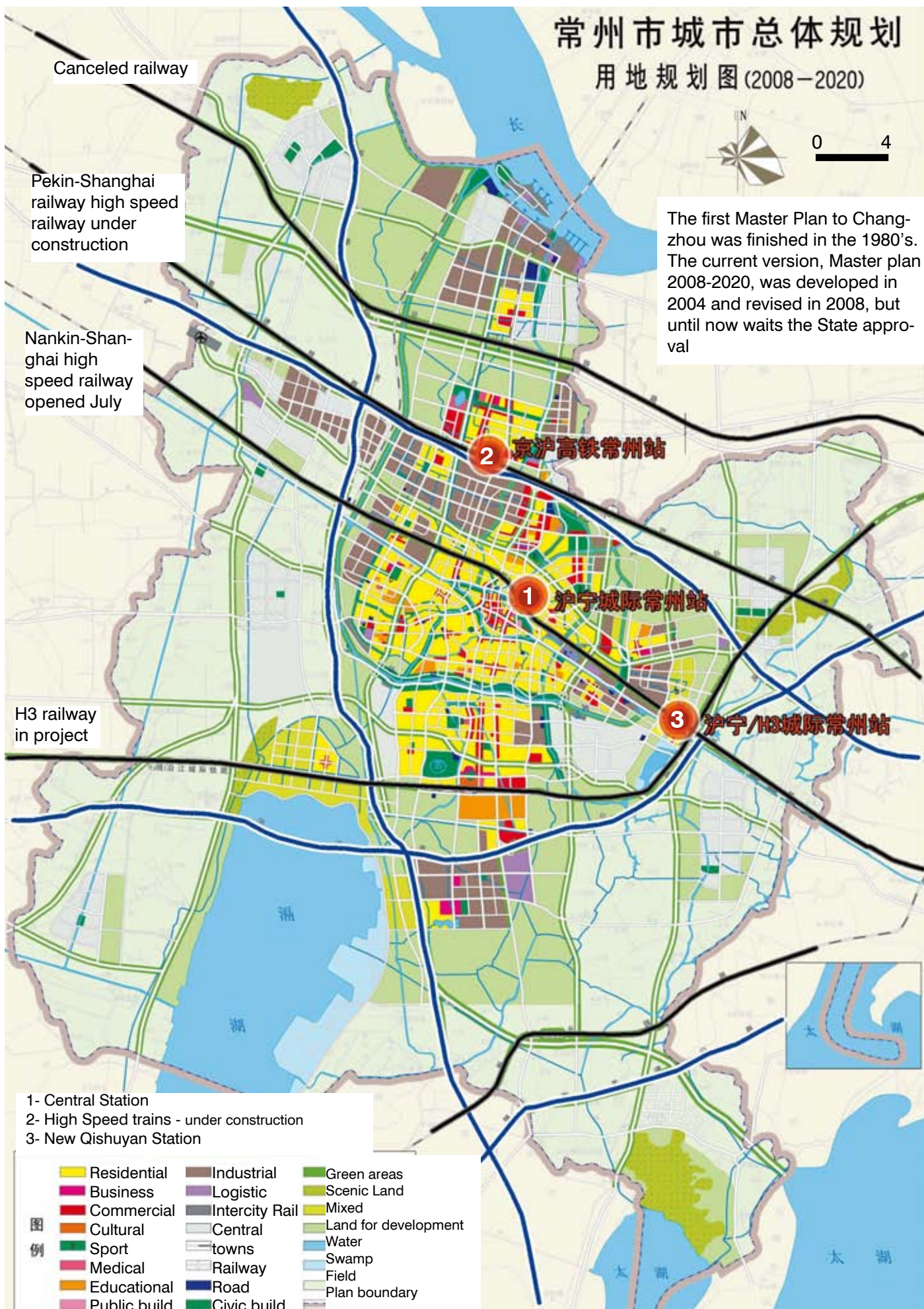
LAND USE AND TERRITORY COMPOSITION.

Masterplan 2008-2020
Composition spatiale

In the 2004 Master Plan, new planning orientations have been decided for 2020:

- *Industrialization and economic development of Changzhou*
- *Reinforcement of the city's transport network, with a better integration in East China*
- *Development of an "Eco-city".*

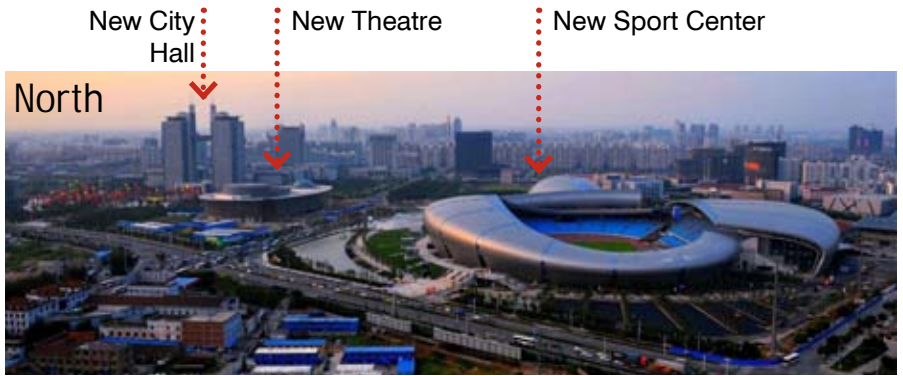
MASTERPLAN 2008-2020



Territory composition

Center

Housing 5 floors



Centre
Old neighborhoods are bound to disappear.



North
Xinbei: a new neighbourhood

Many malls have been built since the 2000's.



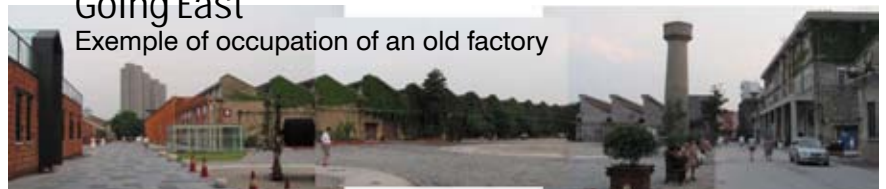
South and North

Urban and rural borders are pushed further away



Going East

Exemple of occupation of an old factory



THE CITY AND ITS LANDSCAPE

Premières impressions

First impression

City canals

Gardens and open urban parks

Other green areas

Urban Agriculture

With 38% of green areas inside its territory (10m² per inhabitant), Changzhou was awarded with the title of "Landscaped city" in 2008. The city aims towards an "Eco-friendly" title in 2020.

Behind the glitter of these prices, we wish to uncover the real spirit of the town, through its sometimes intimate or grand, overwhelming landscapes. Even if diversity remains a main characteristic of the town's landscape, one can only attest of certain standardization. Inside this most energetic and rich city, filled with contradictions, we like to get lost and drift away...

First impressions



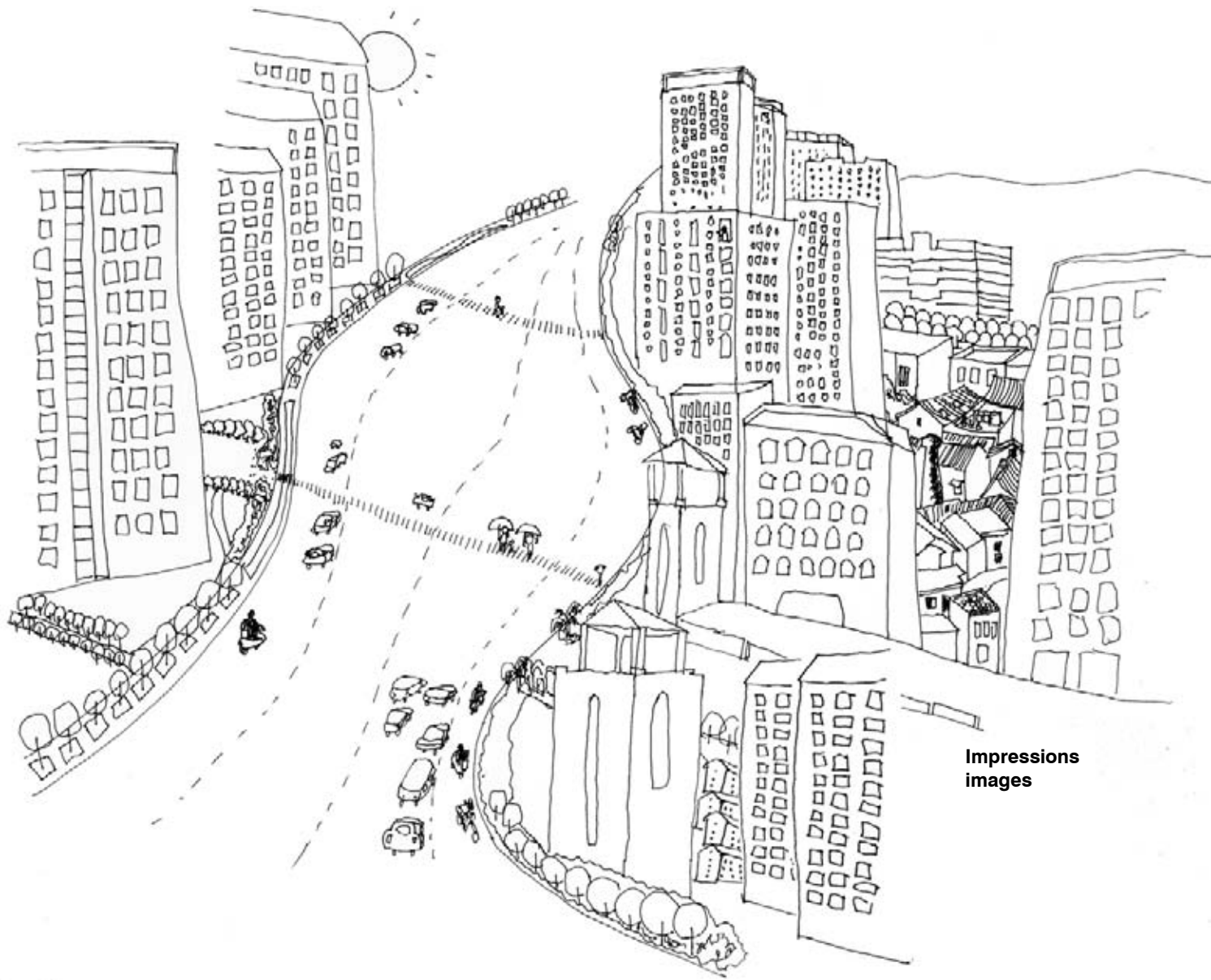
Perceptions map

Every city has its personality. Yet, Changzhou's image is not clearly defined. The city, despite its intensity, seems quite empty.

Diversity and contrast

The GDP's important growth (11,7% in 2009) has had a tremendous impact on Changzhou's inhabitants life quality all the while significantly changing their living environment. During this expansion period where the urban renovation went at full throttle, the territory became a testing ground for coexisting styles and trends. This rather unique diversity also creates important contrast, that exist everywhere, in terms of relations between space and time scales.





Impressions images



A significant amount of new buildings are currently spreading over existing buildings which can be destroyed in the blink of an eye. The urban regeneration is a way to harmonize the varied architectures.



The destruction of the alleyways and the creation of large, homogeneous public roads is a way to promote and enhance car traffic and shows for the drastic changes that occur inside the territory.

Memory and marks

The city was born 2500 years ago and has gained prosperity thanks to its canal ways that brought a certain structure through the years. Since 1840, Changzhou has experienced many industrial prosperity periods, which allowed it to develop in various fields. Yet, little remains from these rich times. Memories are being erased while the city expands. A few abandoned water towers and some partially-functioning factories are all that is left amongst the modern buildings, only to testify of Changzhou's lost grandeur.



[Relation between house and living environment]



••➤ Streets are also used as open living areas for the old neighbourhoods inhabitants. Social interactions are warmhearted and continuous, whereas it is much more difficult to bind inside the new collective housings.



••➤ **Canal N°5 site**

The former textile factory has been renovated two years ago and is today a unique place in Changzhou. Architects studios, artists workshops, art galleries,

a café, even a wine cellar are hosted inside the building.... and the location still tries to find new guests. It is a very animated spot where people come from everywhere seeking fun or trying to remember what was the place like back in the days.

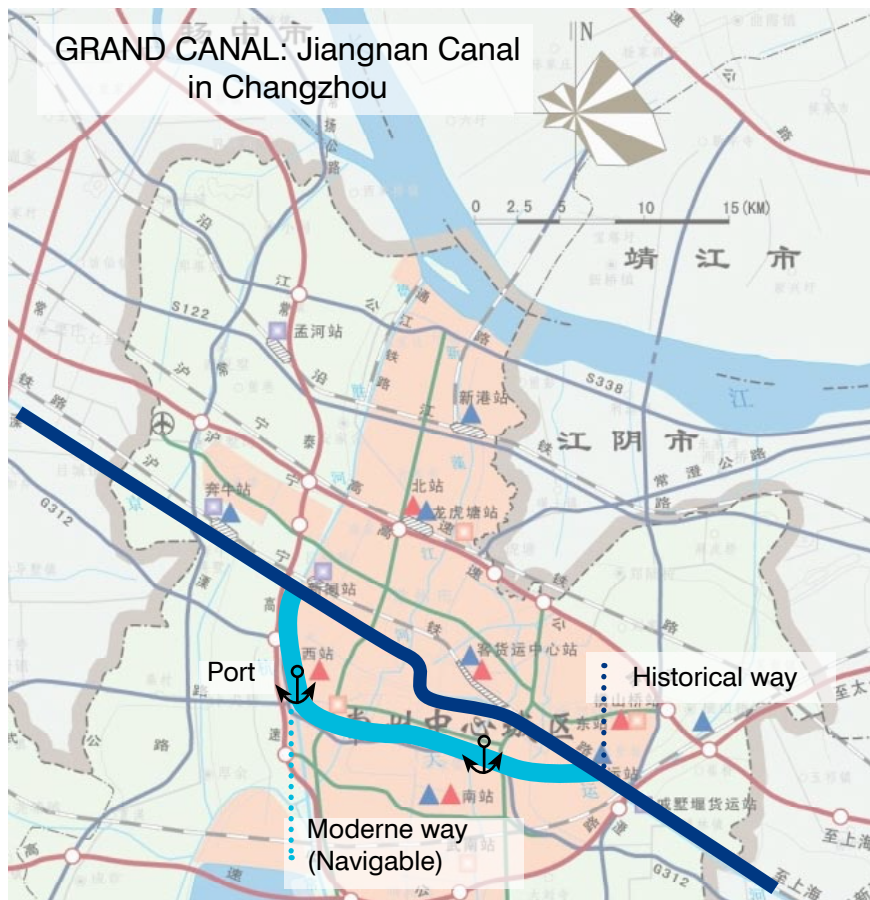


City canals

Changzhou developed along the Great Imperial Canal of China linking Beijing, the current capital city, and Hangzhou, the south's historical capital. It is the longest canal in the world, with a total length of 1 776 km. The oldest parts have been built in the 5th century BC, but all the parts were gathered during the reign of the Sui Dynasty (51-681 BC).

The only part where traffic is possible is the part between Hangzhou and Jining. The modern course is divided into seven sections. The south section of the canal, named Jiangnan Canal, in the Yantzi Delta, is mainly used for freight transport. Overall, the canal is 20m wide in the cities centers but can reach a size that is three times larger on some locations. Other larger canals have been dugged in major cities to enhance traffic and limit traffic jam problems.

Changzhou has two harbors. One is located in the modern canal, and the other, in the oldest canal is mostly used as a recreational spot for sailing. Other canal ways cross the city centre and can be used.



The relation between water and the city.

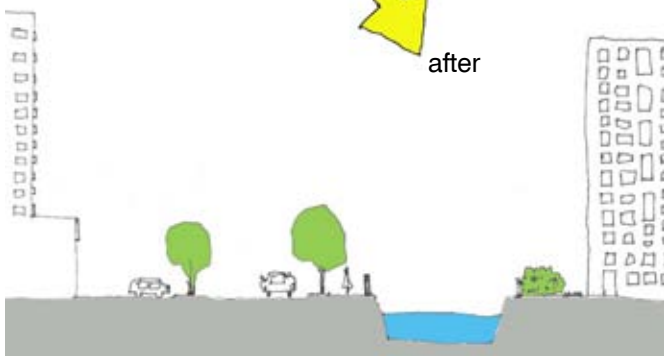
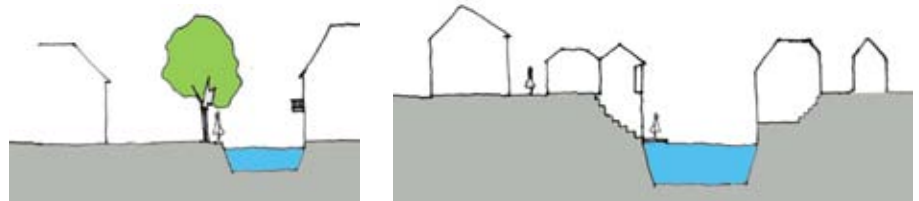


Picture taken at 70's

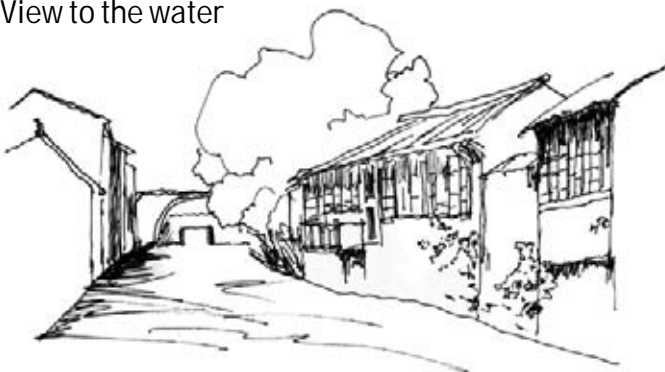
A peculiar way of life and a unique urban composition.

The everyday life of the inhabitants was organized by the canals that brought goods and wealth inside the city. The relation between the canals and the houses by them was very close. The streets were then on the other side of the houses.

Nowadays, the roads, with enhanced traffic capacity, have replaced canals, that have yet been enlarged. The relationship between the people and the water no longer exists.



View to the water



Houses are built further away from the water. Tall 20 floors buildings have been built so as to offer a view of this water landscape to their inhabitants. On the other hand, the perspectives from the bridges and the canal banks were never quite thought about. Recent urban projects, like the planning of green areas, try to give back their importance to the canals and invite people to get closer to the water.



Gardens and open urban parks

Since 2005, the city offers a free access to its urban parks. The fees have been canceled while the fences were destroyed so as to fully integrate these precious areas inside the city. Inhabitants truly enjoy these parks and they have become local social interactions areas where people come for a walk, their gym, a chat with their neighbors... These areas are today some of the most animated and genuine ones in the people's everyday life.

The city keeps on launching important planning programs and creating new gardens and urban parks. A "3 water courses - 3 parks" landscaping strategy is taking place in the city centre in order to link the main urban parks with the canals network.



Xinbei Parc



Hongmei Parc



Hongmei Parc



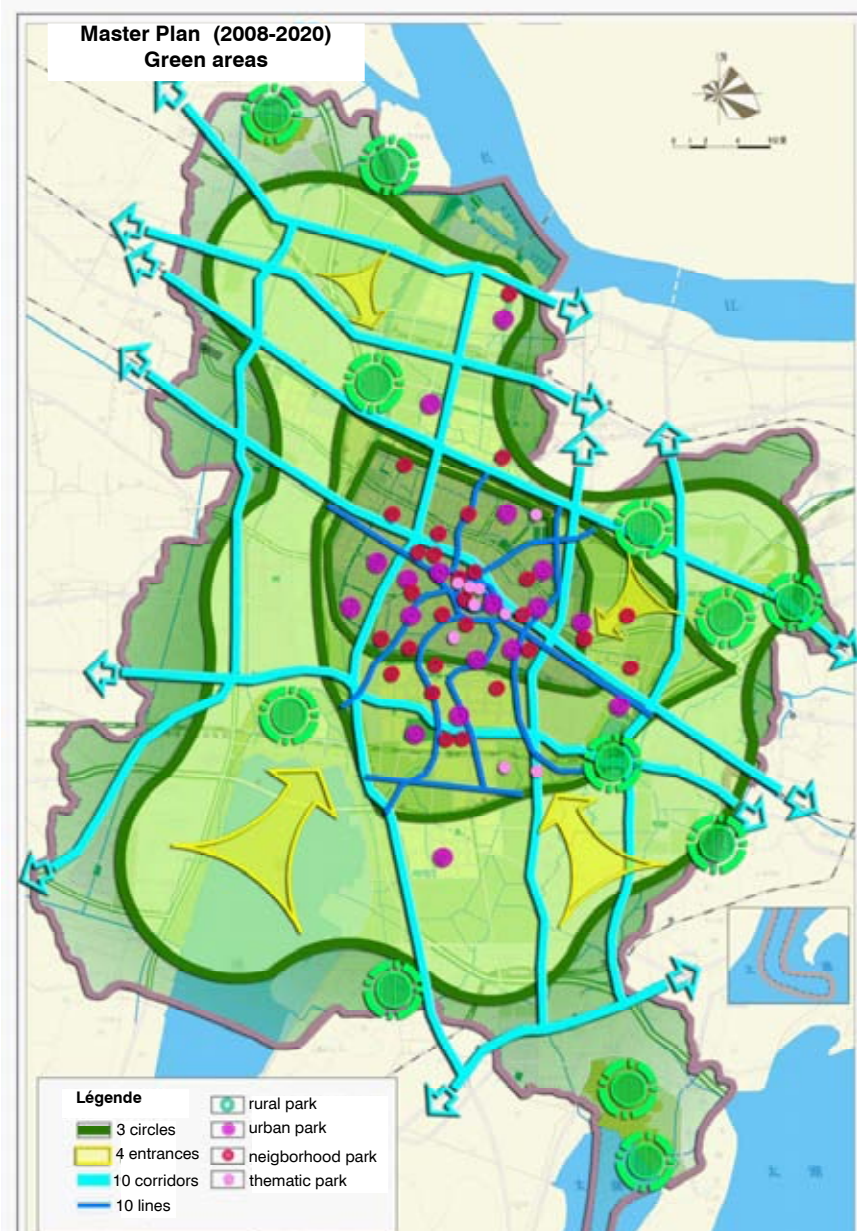
Reinmin Parc, centre



Reinmin Parc, centre



Xinbei Parc



Other green areas.

Down the residential buildings

Many residential areas have been built during this urban renovation era. The planning of green areas at the foot of the buildings is a major argument for real estate developers, as well as for the inhabitants. Besides gardens and urban parks, these green areas convey an important social function for the Chinese people, many of whom do gym exercises or take walks in the morning and in the evening.



Along roads, rail and waterways network

Given the current urban development and the important needs for transportation, more and larger traffic ways are being built. These green areas not only protect people from the pollution, but also enhance the scenery.



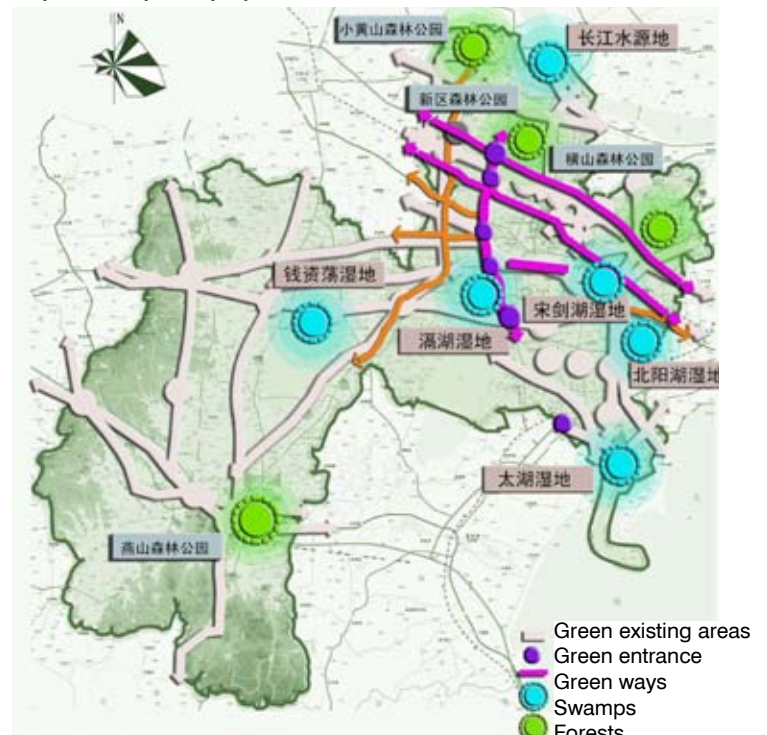
An environment-friendly policy

In order to create an environment-friendly city, an ecological restoration program was included in the 2007 Master Plan. Four wooden parks (8,9km² of total surface) and six wet areas (33,5Km² total surface) were designed to link the green areas along the public roads.

In the new Master Plan, there is also a planning of sensitive ecological areas like wet areas, wooden areas and a program for the protection of water resources.

Changzhou wants to gain the title of 'Environment-friendly city' by the year 2010, as defined by the Chinese criteria for the protection of the environment.

Map of soft spaces project



Urban Agriculture

China has always been an agricultural country. The rural depopulation caused the departures of many farmers whom deserted their land so as to find work in the cities. Real rural areas become more and rarer, especially in the Yangtze Delta, where cities have known a significant development. Urban expansion spreads over farmlands and villages have nowadays become small towns.

Yet, people remain fond of the farm activities, especially older ones. The concept of getting closer to the nature is also quite trendy. Nowadays, one can see small vegetable gardens implemented on the roof of buildings, inside green areas located at the foot of buildings, and even on the balconies. Which makes us think:

What part really plays the agriculture inside the city?



ENVIRONMENT

Current situation

Challenges

Since 2006, China is the most important CO₂ producing country in the world, rejecting more than 20% of the world's total emissions. Co₂ emissions have doubled between 2002 and 2007, mainly because of its industrial activities - China became the first exporting country in 2010. In the meantime, the "world's factory" ranks 80th in terms of emission per capita, which is 15 times lower than Qatar, which ranks first.

Current situation

What about climate changes? It appears that, since 1999, Changzhou's meteorological reports show some rather unusual temperatures. In 1998, the Yangtze river's water level rose significantly; during the winter 2009/2010, and in the Spring Celebration, the city has experienced its coldest temperature ever. Summer 2010 was the warmest ever since the beginning of weather reports.

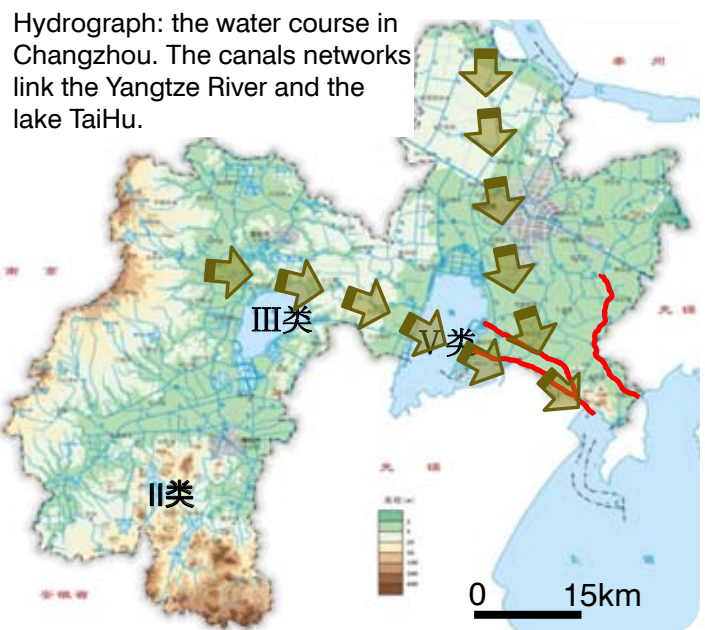


WATER SUPPLIES

The lake TaiHu is the third biggest in China with a surface of 2 250 km², and an average depth of only two meters. It is linked to the Beijing-Hangzhou Great Canal. Many rivers, like the Suzhou river are supplied by the lake.

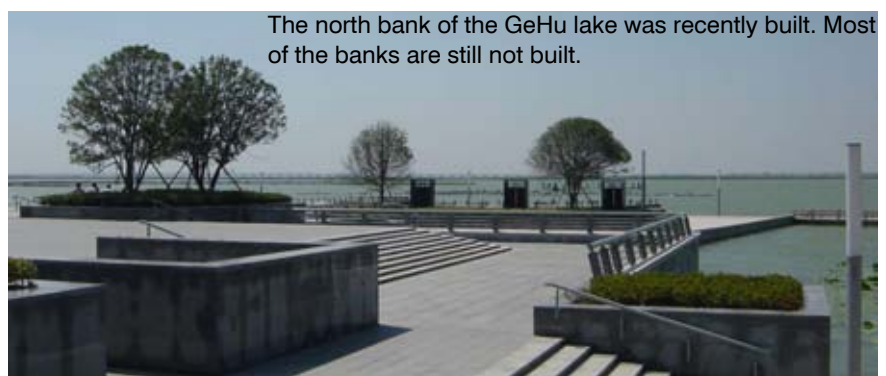
In order to enhance the quality of the lake TaiHu's water, which is essential to the water supply, the government has decided to invest 30 billion RMB, following the five-year plan's orientations.

Changzhou's drinking water source is the Yangtze River, which possesses a better quality and is closer to the consumers.



The city has built 43 waste water treatment factories that can treat more than 1 billion tons of water, including the industrial waste water, reaching 175.000 tons.

Water treatment station



ELECTRICITY PRODUCTION

During Summer, the electricity production does not supply the important energy needs of all the houses air-conditioning devices, the city lightings and the industry which spreads over the suburban area. As a result, local authorities decided to limit electricity consumption, leading to temporary activity breaks in the industrial area, so as to supply the inhabitant's electricity needs. Every factory has a limit depending on its size and its average consumption. Thus, most factories have to stop their production one day a week during a month, under the risk of paying a fine. This reduced industrial activity has many advantages, even though it is not a decision based on the environment, as it is for the inhabitants comfort. This policy binds factories to cut back their production activities.

The Three-Gorges Dam is on the Yangtze, and is the largest hydro-electric dam as well as the biggest electricity generator in the world . It started its production in 2006. This dam does not resolve the problem of China's electricity supply, for its production only amounts to about 3% of the country's total consumption.¹ It started its production in 2006. This dam does not resolve the problem of China's electricity supply, for its production only amounts to about 3% of the country's total consumption.²

- 1 The Top 100 - Part I The World's Largest Power Plants
- 2 projet of Three Gorges Dam, reserche May 2010.



RENEWABLE ENERGIES

Solar energy

New guidelines have been published in order to reduce buildings energy consumption and to promote the development of solar water heaters. Thus, solar water heaters factories are implemented in Changzhou. For now, solar electricity does not yet exist in Changzhou, but in other cities of the Yangtze Delta, photovoltaic lamps are already used for public lighting.

Wind energy

In Changzhou, one factory builds components and power sources for wind power plants. Yet, the city does not use this renewable source of energy.

Challenges

1. Change the ecological system due to urban sprawl

Since 50 years the urban area growth from 11,5 km² to 219,8 km², which means 17,9 times! The agriculture area had diminished too much. Wet areas are occupied by industries, by agriculture and other production sectors. Changzhou loses diversity and its hydrological system stability.

2. Composition of unbalanced areas

Most Industries in Changzhou use huge amounts of energy - chemical industry, textile industry, high technology industry - and are also very polluting. Traditional agriculture is replaced by industrial agriculture. Rice agriculture had decrease which causes the flow of storm water directly into rivers and lakes

3. Fast growth of urban population / water supply

In despite of many water supply existing in this region, the increase of industry and economy, the amount of drinkable water is 1522 m³/year, less than the national level.

Development and implementation of new technologies so as to reduce water and energy consumption.



ECONOMY

Industry

Service economy and trade

Tourism

Jiangsu Province, China's third economic power, has a strategic position, near Shanghai, in the lower Yangtze area. Changzhou is one of China's industry birth place, and was one China's first town to welcome foreign investments during the 80's economic reform. It is one of the forty first Chinese towns in terms of investments. In 2009, the GDP per inhabitant was about 9000 dollars.

Manufacturing

Changzhou's industrial history is 1700 years old. Its four historical industries - farming machines, transmission and electrical transformation equipments, motors and vehicles, textile - have known flourishing periods.

During the last decade, the sector has been modified to become what we now call Manufacturing. It is composed of four fields which are : IT industry, pharmaceutical industry, biotechnologies and chemical industry, as well as new materials industry.

Industrial areas evolutions

In 2005, the total surface of the industrial areas was 148,19km².

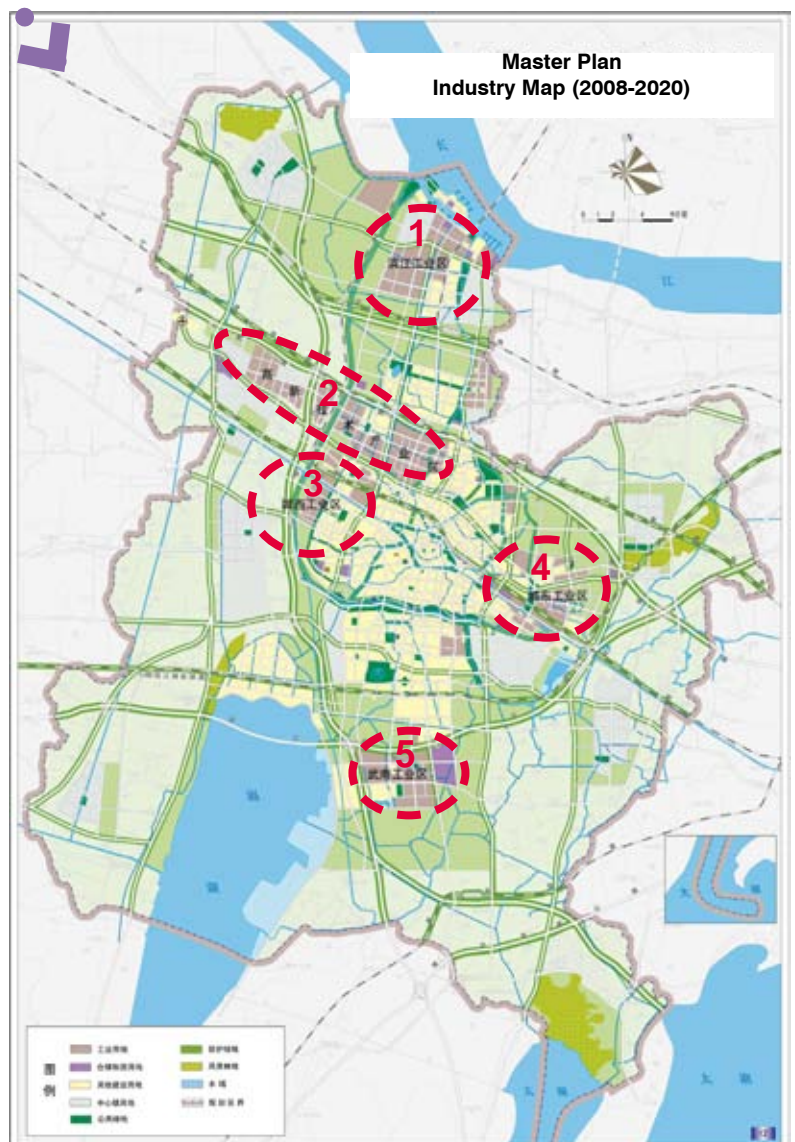
In 2010, this surface reached 231,12 km², 12,3% of the urban surface of the city. With a 10,9 km² rise per year, it will reach 311,96 km² in 2020.

On the soil's occupation map, we can see that these areas are shattered across the city. Still, there are a few centralized industrial areas, especially in the north part of the town.



Five centralized zones in the city's Master plan (2008-2020):

1. Industrial area along the Yang Tse river (chemical, renewable energy, environment)
2. High-tech park (IT industry, pharmaceutical industry, biotechnology, new materials...)
3. West area (electronic, transmission equipment, new materials)
4. East area (motors and vehicles, pharmaceutical industry)
5. South area (electronic, pharmaceutical industry, biotechnology...)



Services and Trade

Service economy gathers varied and very different activities. Currently, hotels, restaurants, trade services are the main sectors of the service economy. The city wishes to reorganize the “usual services” in order to develop modern and high-skilled activities like education, communication, information, R&D and manufacturing...and link them with one another.

The location of these service-based activities is changing due to the new demographic and industrial positioning : people leave the old city centre and move in new urban centers. Industry develops itself in larger areas outside the city’s walls. The public transport’s new infrastructures seem to support this trend.

New planning for the service economy’s organization



- **A core**
Hyper-center: trade services, business, offices and luxury housings...



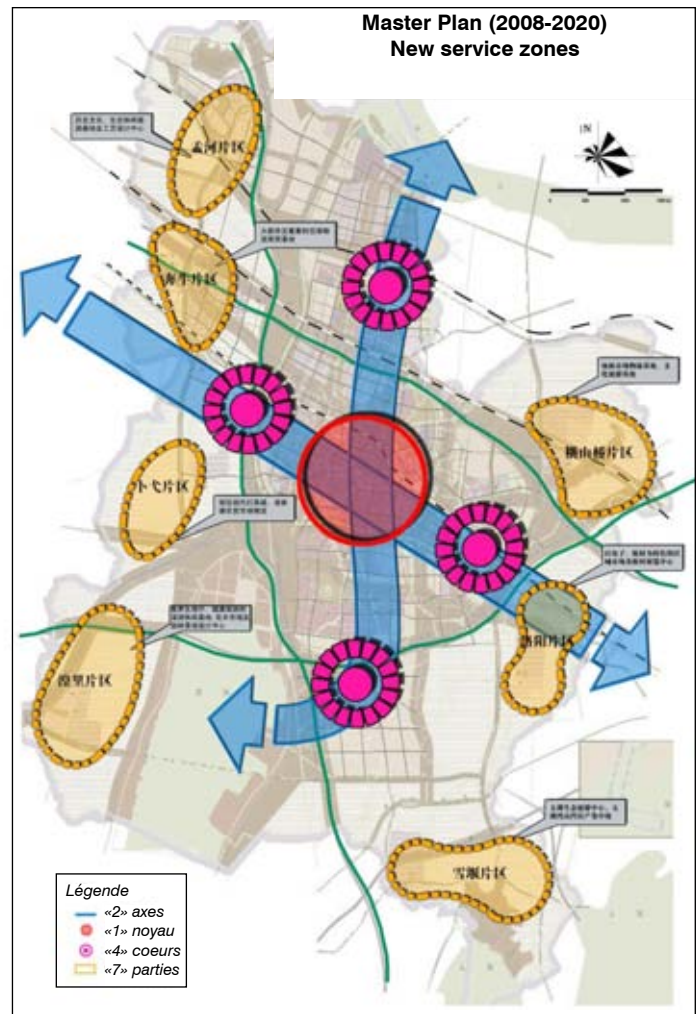
- **Two axes**
The transport network links the different parts of the town with one another.
Horizontal axis: The Great Jing-Hang Canal and the Beijing-Shanghai railways.
Vertical axis: Public transport and main urban roads network.



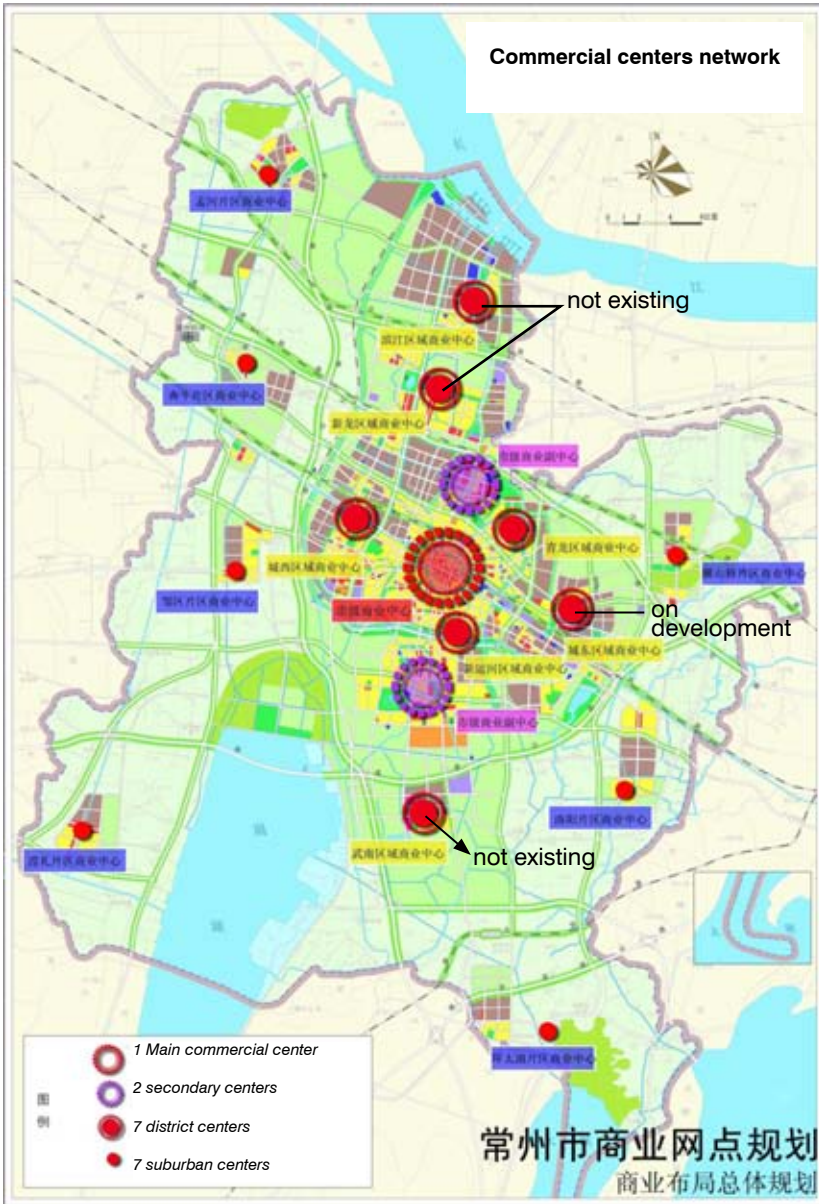
- **A circle**
Highways circle around the city. They allow the main storage centers to communicate.



- **Four zones**
au nord le nouveau district Xinbei, au sud Wujing, à l’ouest le parc Qinfeng et à l’est le centre administratif de district Qishuyan.



- **Seven parts**
The suburban towns.



The 2008-2020 Master Plan establishes a new business plan, based on the current location of existing trade activities, and divides these activities in 5 following scales:

City scale: 1 trade center inside the hyper-center

2 secondary commercial centers: Xinbei up north and Wujin south.

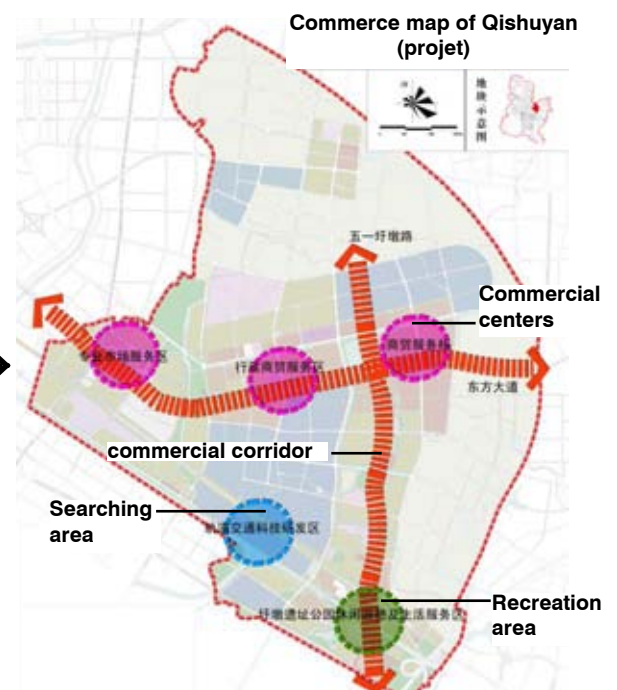
District scale: 7 commercial centers

Neighbourhood scale: local trade

Suburban scale: 7 trade centers



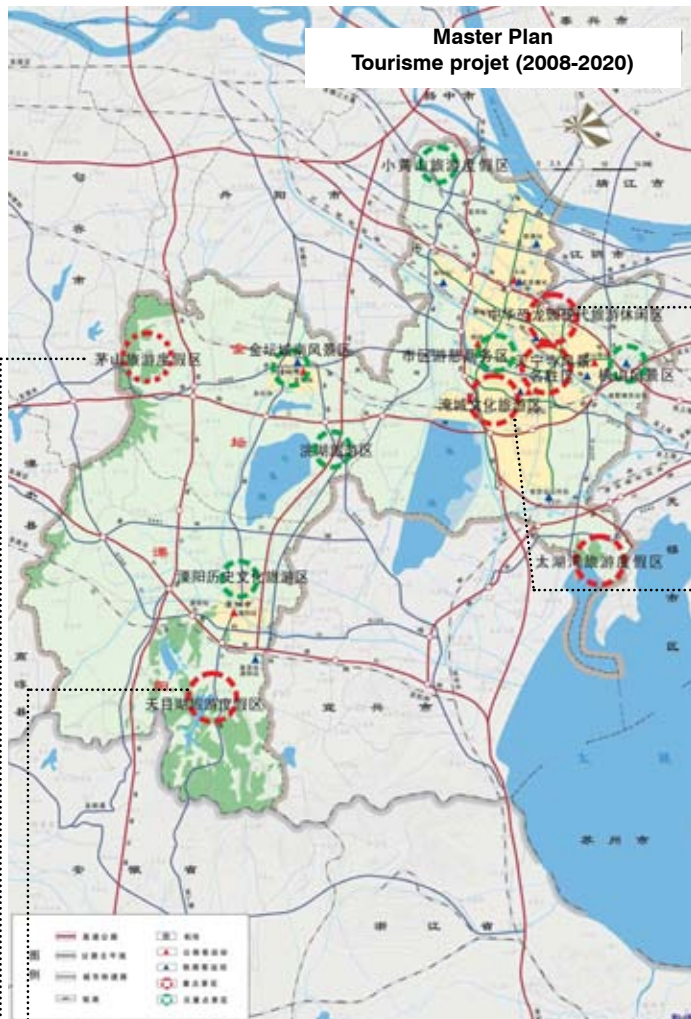
The eastern trade project, around Qishuyan, is made of two perpendicular axes: Wuyi Street and Orient street, where are gathered the district public services and 3 service areas: Orient street trade activities, professional services, and the area around the locomotives research center.



Tourism

In order to create a “Cultural and recreational city”, Changzhou invested a lot of money in building tourism infrastructures. The sector swiftly developed during the last few years. Today, Changzhou is the fourth tourism spot of the Province, behind Nanjing, Suzhou and Wuxi.

On the agglomeration scale



• Theme parks



Changzhou's Dinosaur Park (Oriental Jurassic Park)
 Located in the new northern district, near the high-speed railway linking Beijing to Shanghai, the park is divided in three areas: An exhibition area (a museum displaying dinosaur fossils), a leisure area (theme park), and a research center. The park has opened to the public in April 2001 and is China's largest theme park.

• Yancheng Theme park



Located in the Wujing district, south of Changzhou, the Yangcheng Ruins are an historical heritage from the Oriental Zhou Dynasty (1046 BC). Surrounding the ruins, a theme park was recently built.

• Leisure and tourism villages

These wide tourism areas, located outside the city in a fairly preserved environment, are for urban inhabitants wishing a closer contact with nature : The villages of Lake Tianmu, south of the city, and the Mao Mountain one east, group hotels, cultural, farming, leisure activities, as well as wooden areas... .

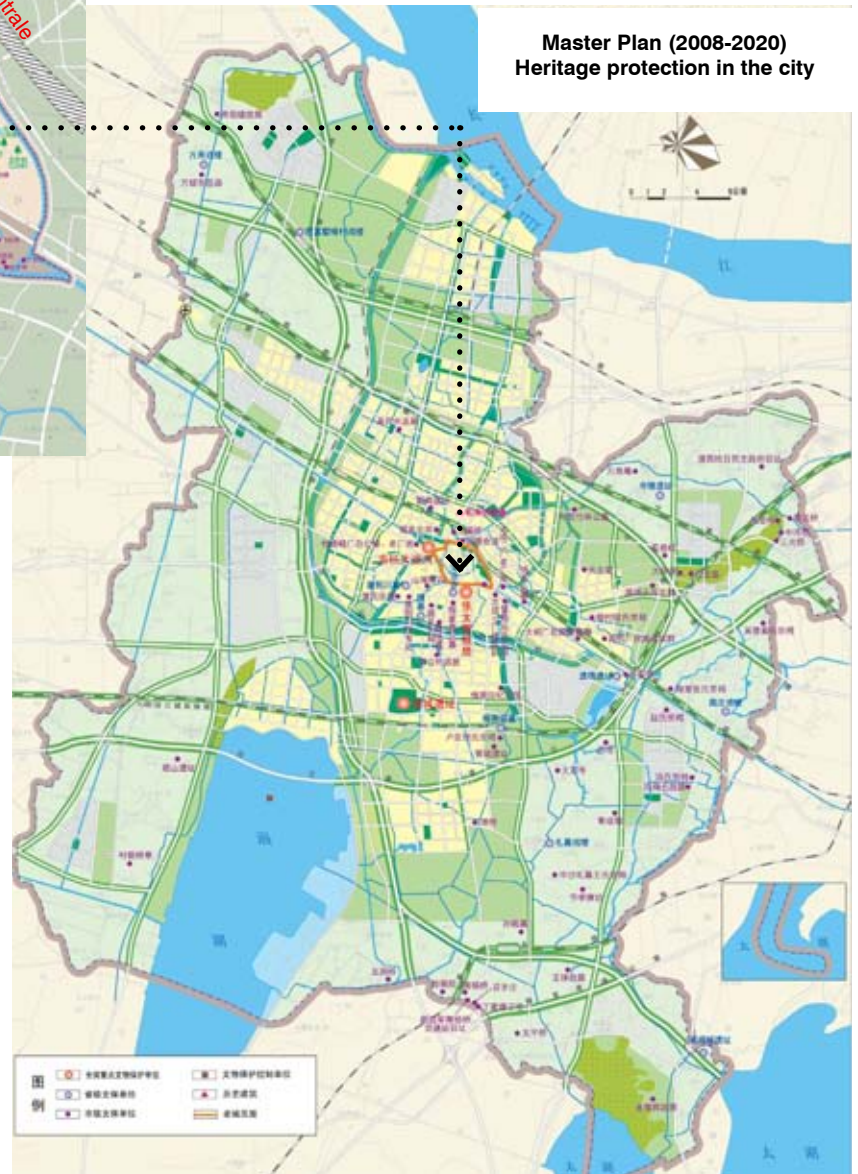


On the city's scale

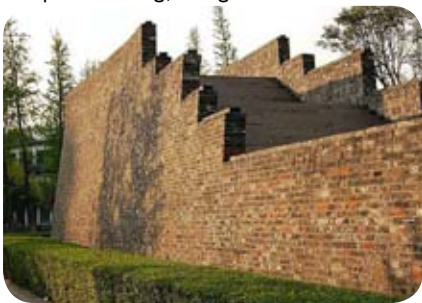
Most of the partly renovated historical buildings can be found in the city's center. There are 134 protected monuments by the government and the province. Four historical neighbourhoods have been classified and integrated in the heritage protection program of the 2008-2020 Master Plan.



Despite these important figures, it is rather difficult to gaze at these hidden monuments, which are mostly located in old, neglected areas of the city, and which are overwhelmed by tall housing or office buildings.



Temple Tianming, Hongmei Parc



Part of former wall - recently rebuilt

During the 1990's, the city still had whole historical neighbourhoods to show. Because it feared that a ranking as a historical and cultural city would restrain its development, Changzhou refused it and then destroyed most of its historical center. Today, Changzhou tries to make amends for these destructions, and "fake historical" builds monuments instead.

A small tour...



Former house of a duke



The Jin Garden, which was built under the reign of the Qing Dynasty (17th), has changed of owners many times, and is now inside the Changzhou Hotel, in the heart of the city's center. It is Changzhou's only classical 18th century garden.



Jin Garden



Preservation of a historical building inside a construction site.



Brigde Ye garden



Pagode Wenbi

The pagoda is part of the Tianing Temple, which is one of the four most important Buddhist temples from the Tang dynasty. It was destroyed and rebuilt five times in a 1350 years period. The current Pagoda is 153,73 meters high, with 13 floors and was opened in April 2007.



Park Hongmei

The park is located in the city centre and has a total surface of 37 hectares and is the city's largest green area. The park was created and developed around a field that belonged to the Tianing Temple.



Park Hongmei



Ruelle Biji (famous comb lane)

Buji Street was renowned for its painted wooden combs. Almost every family that lived on the street was selling hair combs. Today, the street was entirely rebuilt.



One of the historical local craft is the wooden hair comb production, which is famous in the whole country. Changzhou's long-praised, high-quality hair combs are China's most famous ones, and their very fine teeth are particularly efficient against lice.

TRANSPORT

The Inter-city train project of
the Yangtze delta

Railways

Stations

Road network

Public Transport

Soft transportation

Other transportation

Changzhou's transport system is one of its most important assets. With the construction of new railways, the city enters a new strategic development period.

The Yangtze delta's inter-city train project

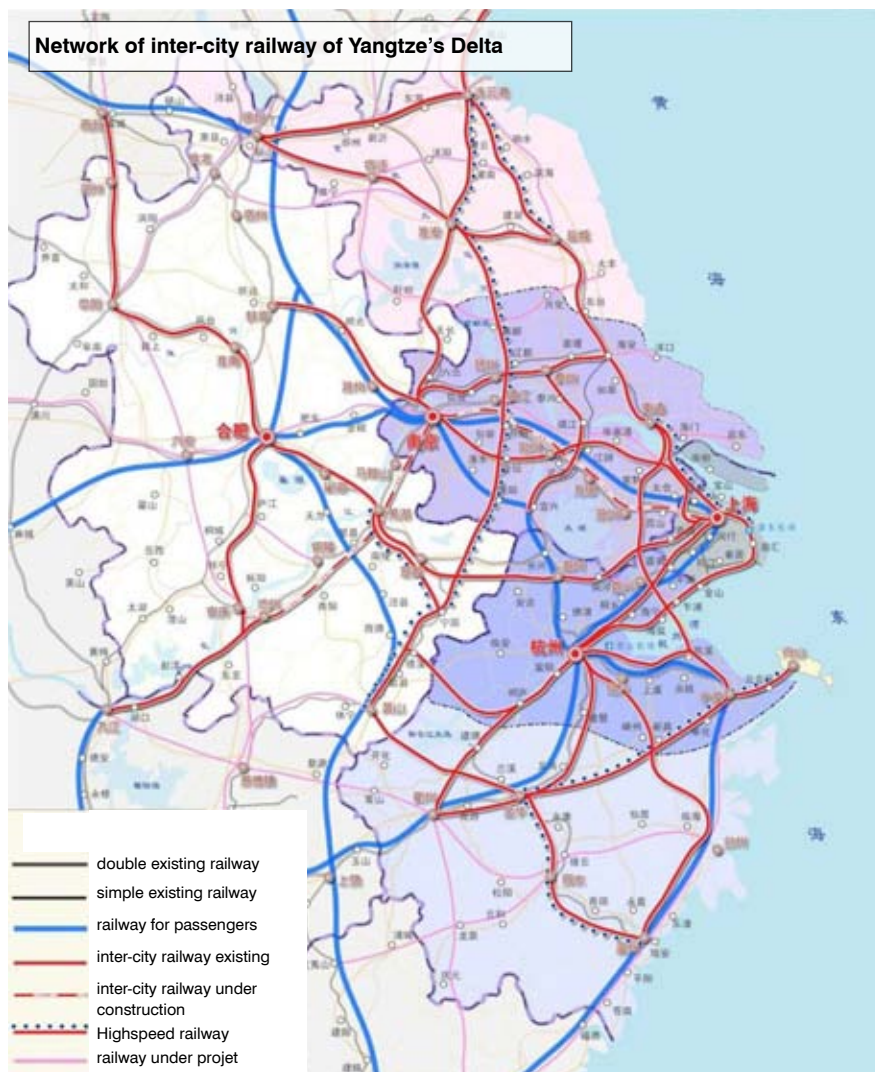
The Yangtze delta is located with a 300km radius from Shanghai. In order to avoid traffic jams and to help the communication between the delta's different cities, the inter-city train project is launched within the frame of the long-term national railway planning design, and puts Shanghai in the center of the Delta.

The main goal is to link the delta's major cities with one another and with Shanghai in less than three hours using a high-speed train. A "three hours" circle is thus being drawn thanks to this project. A shorter connection with neighbor Provinces and a less long journey to cross the Delta are the two significant results of this project.

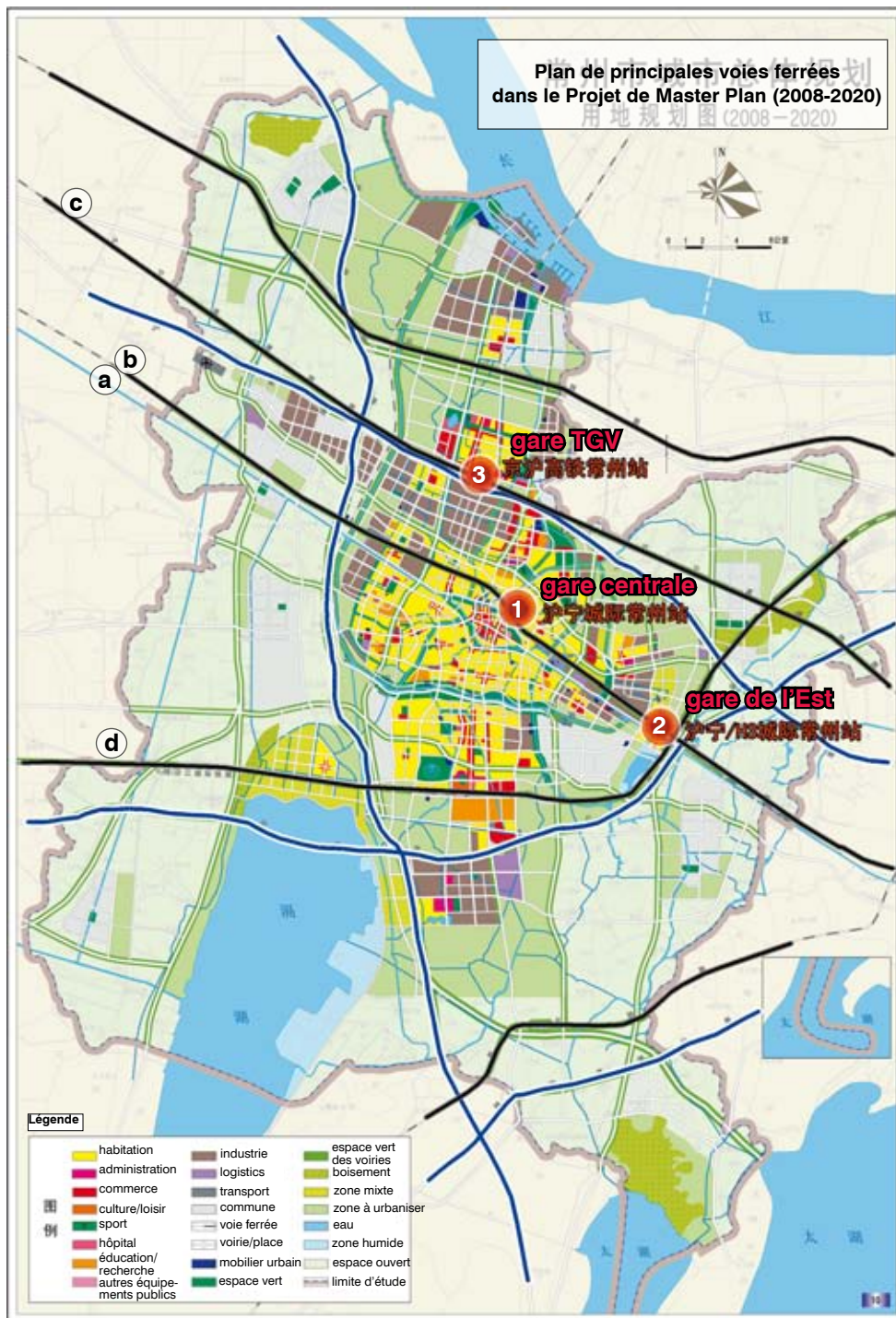
Changzhou is located between Nanjing and Shanghai, within an hour and a half long journey distance from both cities. Many railways cross this area and create development opportunities for the city.



Highspeed train Station Hongqiao in Shanghai, opened on 1st July, the biggest railway station in China



Railways



Currently

Changzhou's strategic location makes it an important railway station. Currently, two horizontal lines exist: The Shanghai-Nanjing line and the Shanghai-Nanjing high-speed line ; a vertical line : Xin-Chiang (linking Jiangsu province and Zhejiang) which is used for freight transport.

Old Shanghai-Nanjing railway (a), was built in 1905 ; It is the main north-south passenger connection and freight connection within the Beijing-Shanghai line. There are five stations in Changzhou: one central station for the passengers and for freight stations, including Qishuyan. The line is long-saturated and it is most likely to be used for freight only.

Shanghai-Nanjing's high-speed railway (b), travelling parallel to the old one was launched the 1st July 2010. 31 stations will open in the cities located on the line's way, which has a total length of 300km. The aim is to connect Shanghai and Nanjing at a maximum speed of 350km/h, so as to invigorate an already energetic area.

Under project

The Chinese government is currently leading a large-scale work projects policy, building many new infrastructures, including a high-speed railways network.

The high-speed Shanghai-Beijing railway (c), is now being built and should open in 2013. It is 1310 km long and has 21 rail stations. Its launching will reorganize all the Shanghai-Nanjing line stations.

The future H3 line "along the Yantze River" (d) should connect medium-sized cities between Shanghai and Nanjing. Its path should be clearly defined at the end of the year, and the work is likely to begin within two years.

Changzhou has **three stations for passengers**: The central station, the East Qishuyan station and the TGV Shanghai-Beijing station, which is currently under construction

Central Station



South facade of old Central Station



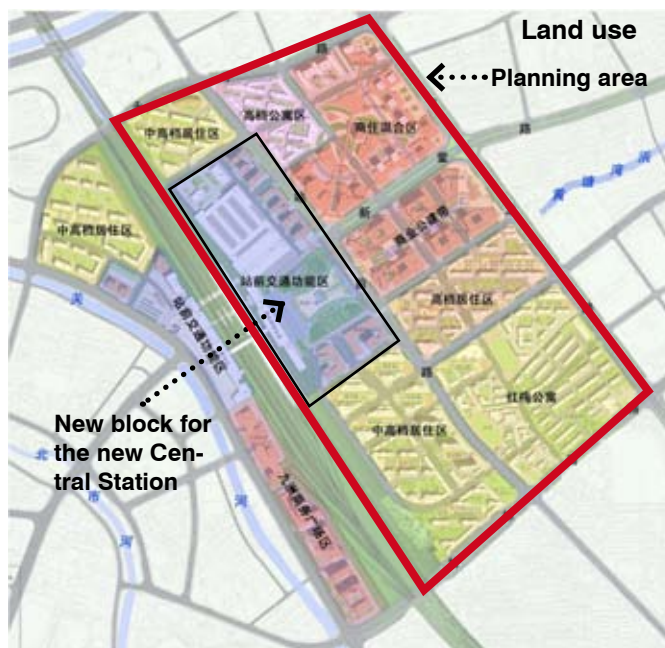
South Square, old train station still used



Planning

Around the recently renovated central station, large housing areas are being destroyed so as to leave room for further development projects. A survey was conducted in a 1,2km² surface to reorganize the housing and business areas near the station. The current project only plans to keep the main axes for now.

The future of this neighbourhood is yet to be written.





A view of the north-west part of the Central station area, before the planning of the north part.

In the north part of the city center, the Central station is a major one on the traditional Beijing-Nanjing-Shanghai line. The original part is oriented towards south. The station was recently renovated in order to face the launching of the new Nanjing-Shanghai high-speed line. A new long-distance bus station was built as well nearby. The new northern part of the station aims to be a connection spot for different transport ways, and gathering points for trade activities, in order to strengthen the urban unification.



North square :The New central station for the high-speed railway Shanghai-Nanjing.



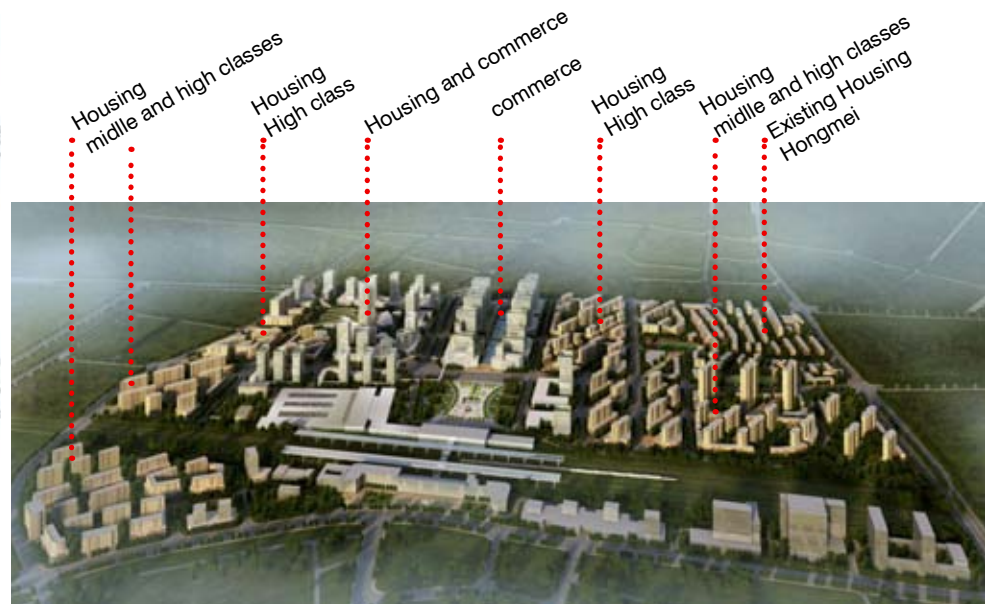
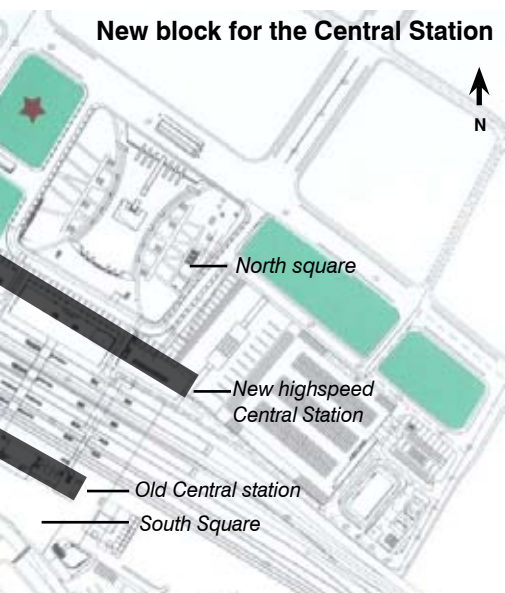
North façade of new highspeed Station



South square: A view of the south entrance of the Central station.

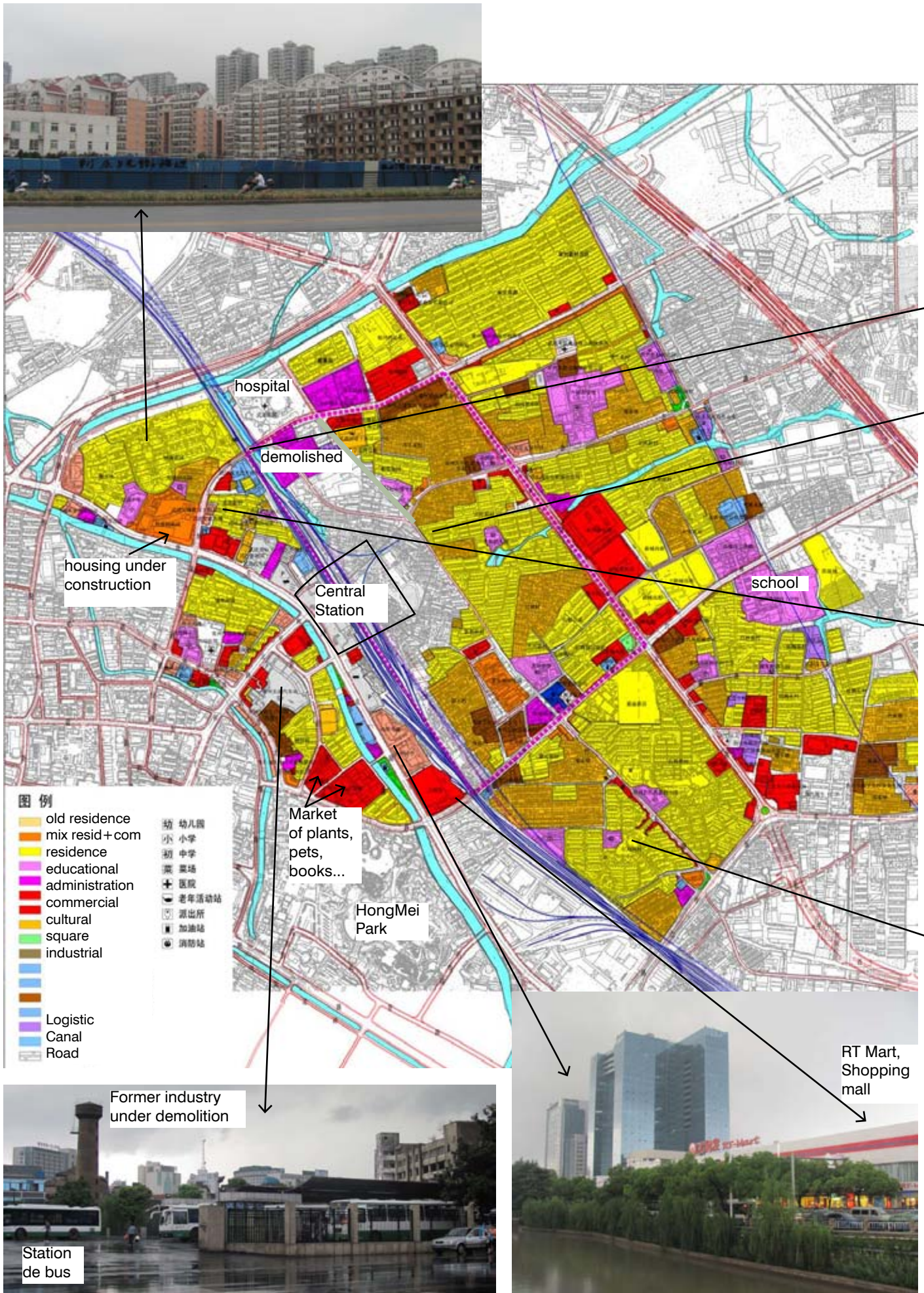


Passengers arrival from highspeed train



3D project of planning area

Existing Central Station neighborhood



Passing under the railway



Bus station linked to the railway station



← to be demolished



← New office buildings



In central area it still exists some industries like this one

← Renewed existing housing



Mixed use - existing small stores and housing

New avenue in front of railway station entrance

Public swimming pool



to be demolished →

New central station ↓



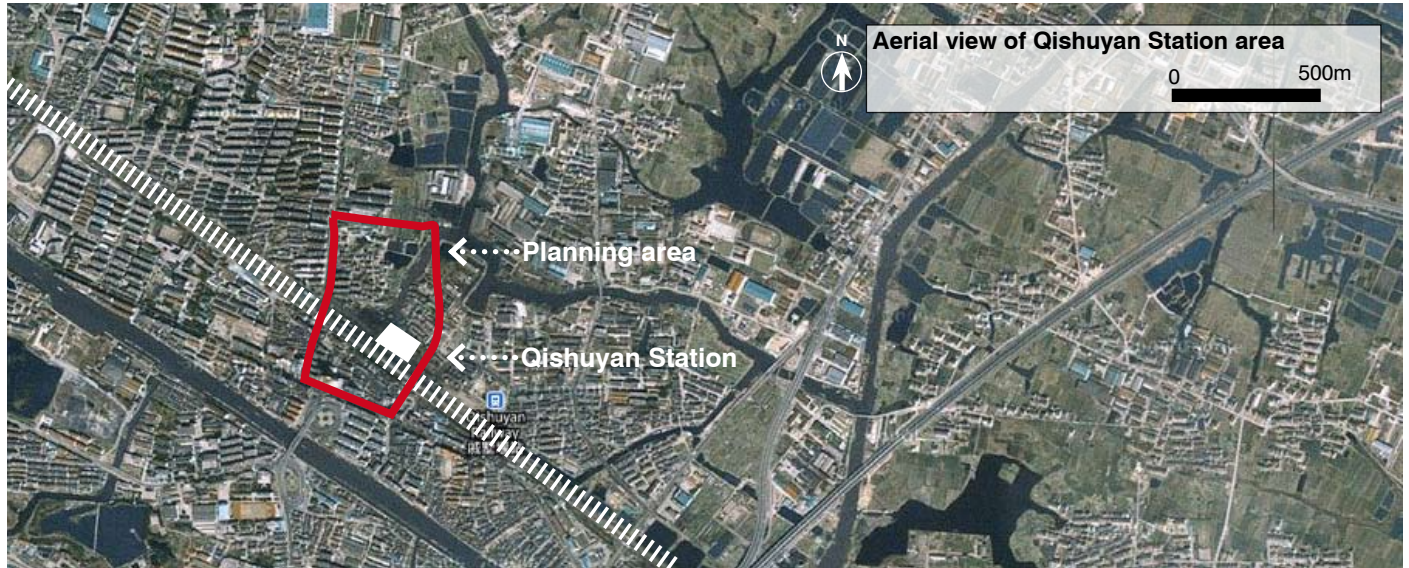
Around the Central Station many buildings are to be demolished to give place to new and higher housing.

Qishuyan Station_East

Changzhou wants to develop its east area in order to get closer to Wuxi and wants to extend towards the Z shaped development area of Shanghai. Should the Qishuyan station play an important part of this development is a question that still needs to be answered.

10km East of the city center, the Qishuyan district is 3158 ha large and has about 90 000 inhabitants (2009). Son activité traditionnelle et principale qui est la conception et la fabrication de locomotives a permis le développement du quartier et lui donne en même temps une caractéristique spécifique.

The new "Intercity" high-speed train line which connects Shanghai and Nanjing was open the 1st of July and was built in parallel to the old railway. The new Qishuyan station was built south of the old station. Currently, almost 7 trains make a stop at Qishuyan station every day.

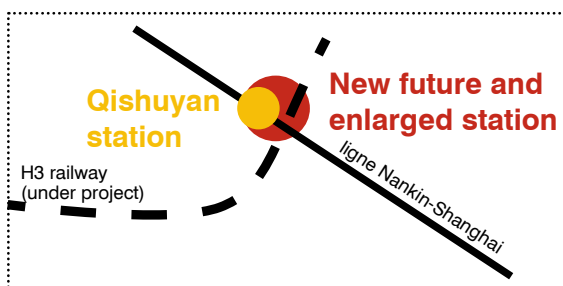


Open questions

The new railway H3, under project, il pass by Changzhou. It will stop at Qishuyan Station, in which a new connection should be created to link the new railway to the existing high speed railway Nanjing-Shanghai, opened 1st Jul 2010.

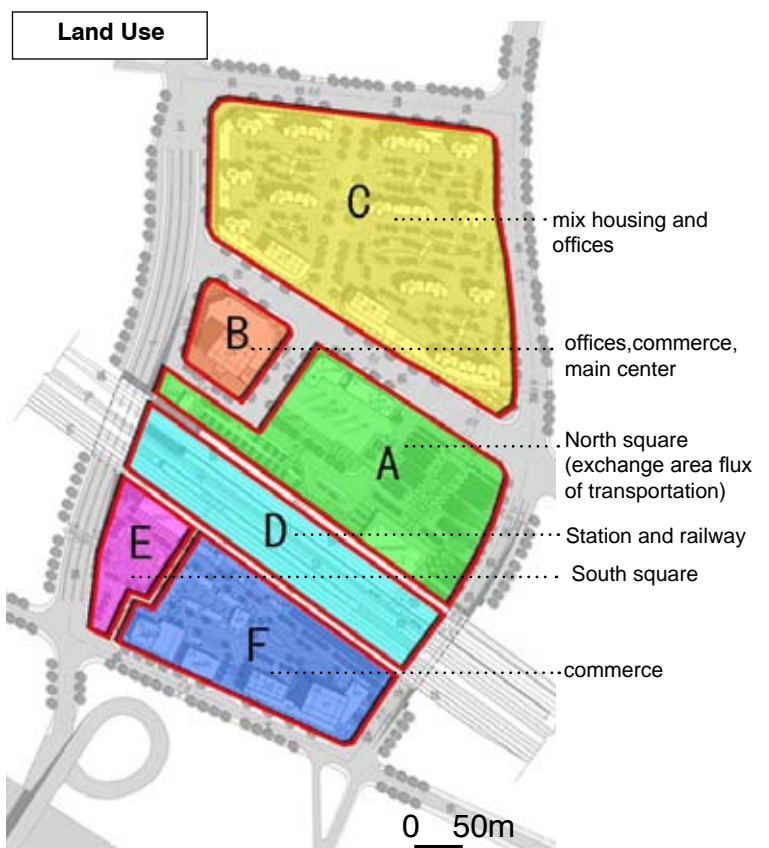
It should to be created easy connections to the lines in a bigger station. Passengers exchange between platforms or trains exchanges in the rail.

The municipality of Changzhou wishes that this stop in Qishuyan of the future railway H3 contribute for the development of the East area of Changzhou.



Existing Project

The project of the Qishuyan station neighbourhood covers a total surface of about 23 hectares. To build a «new East city entrance», the proposed project involves transportation area, office buildings, housing, squares and public area.





Diversified housing typology and land use: Industry, individual houses, not-built plot... Some will maybe be substituted.



Around the intervention area. Industrial areas are being built and some 6 storey housings are being destroyed.



A and B Zones North Square and offices. Finished part of the project in front of the station.



Masterplan project of the neighbourhood



3D project of the neighborhood around Qishuyan Station

Existing QiShuYan Station neighborhood



Wuyi street: main street that links the administration center in North to downtown, South of railway.



Changqin street passes under the railway



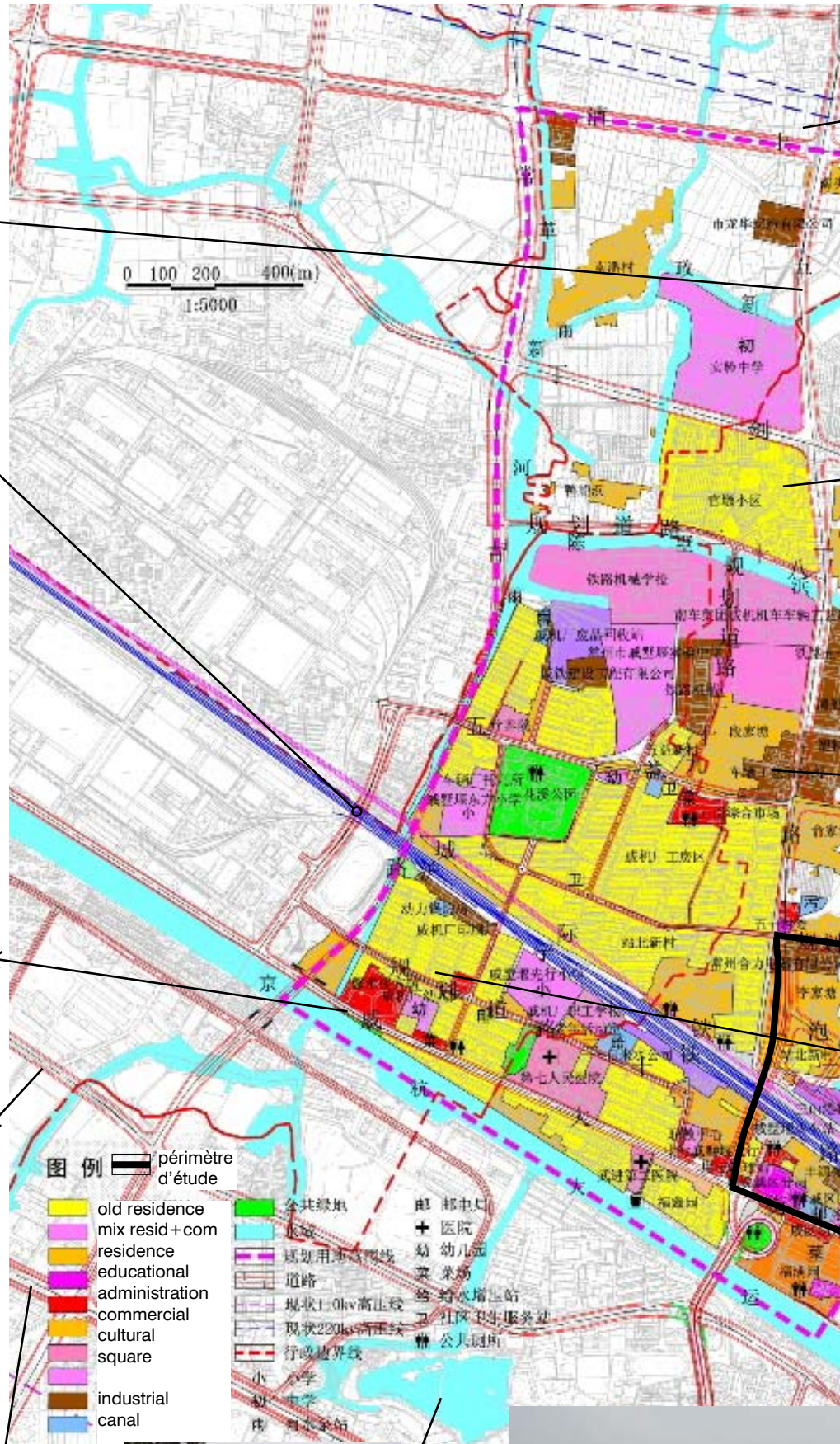
Qishuyan street: main commercial street.



Laodong street leads to South downtown



Zhong-Wu road: former national highway G312



Weidun Park: recently renewed and with many visitors.



Park West of the district.



North part isn't too dense. The CSR (centre of train research). Individual houses with gardens share the area with new high housing under construction



Many industries has functionalist architecture. The CSR building are on rare example of a modern architecture

Different housing from 80's to worker at trains industry: some buildings has remarkable architectural quality which is no longer seen in other neighbourhoods.



Former cinema used by the population as conference meeting room and party place.

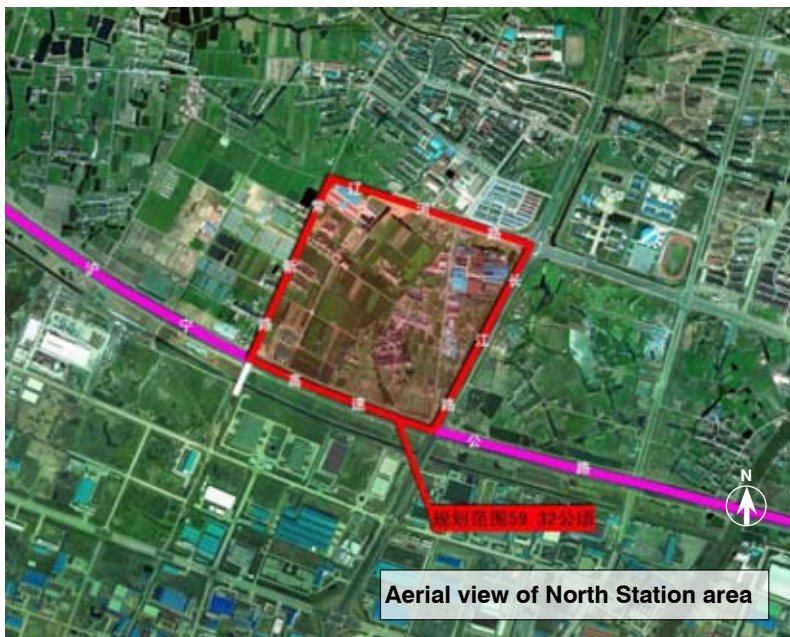


Railway view from Yanjiang highway



Elevated highway Yanjiang along Yangtze River

Beijing-Shanghai high-speed train Station



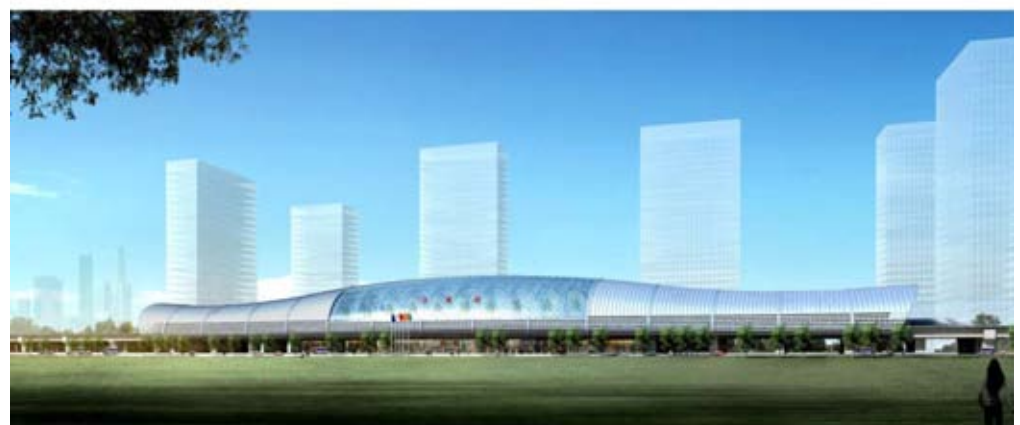
The future station is located in Xinbei district, on the northern part of the town, near the Nanjing-Shanghai freeway and the west fast lane.



Several surveys were conducted in this area.

A hub project has been decided for four reasons:

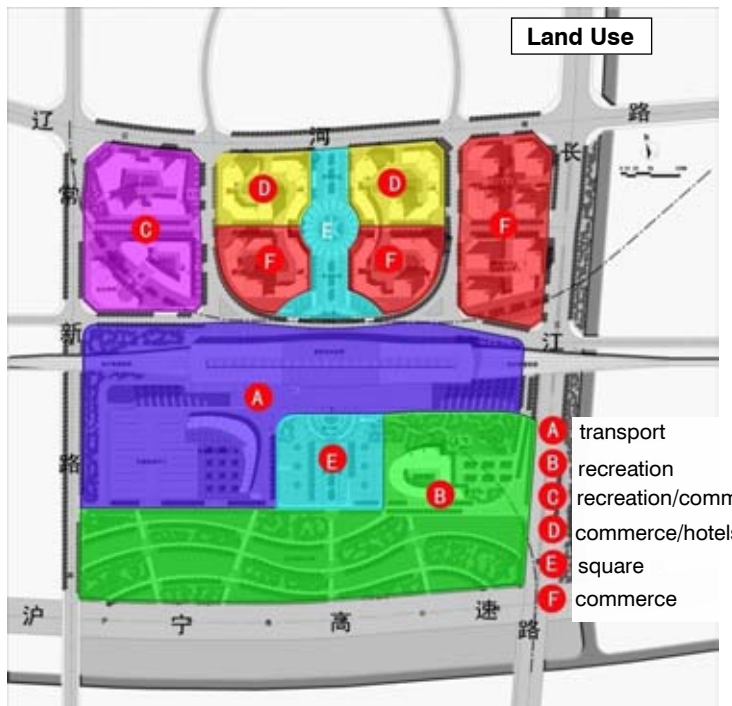
- Easy transportation traffic and transit
- Give a higher economic value to the land, especially the land under air traffic.
- Creating a standard road network
- Promote public transport



3D project of the new North Highspeed station



Masterplan



Land Use

- A transport
- B recreation
- C recreation/commerce
- D commerce/hotels
- E square
- F commerce

The road network

The city is inside a very dense road network. Roads are the main transportation way for passengers as well as for freight. Road traffic represents 90% of the total traffic. Three freeways cross the city and connect it with neighbour cities:

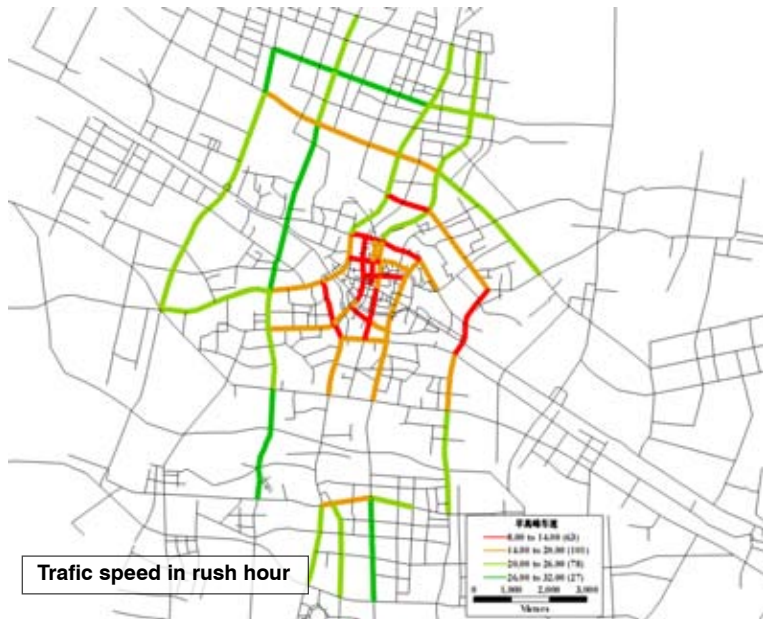
- **Shanghai-Nanjing Freeway:** (a) 2x4 lanes and almost 55 000 cars take it every day. It plays a significant part inside the Yangtze delta transport network. Its course is parallel to the high-speed train line connecting Shanghai to Beijing, which is under construction.

- **The freeway along the river** (b) 2 x 3 lanes, with a significantly less important traffic. In parallel to the future H3 line, it crosses the Shanghai-Nanjing railway in Qishuyan east station.

- **Xi-Yi Freeway** (Wuxi-Yixin)(c) crosses the western part of the city. It has low impact on Changzhou's road traffic.

The city invested a lot of money in its many road infrastructures, especially in the creation of a fast lanes network surrounding the city.





Despite important investments, Changzhou experiences traffic jams. During rush hour, the average speed in the center part of the city does not exceed 20 km/h. This is a direct consequence of the rise of the individual cars number, which increased of 37% between 2001 and 2008, about 20 000 cars a year.

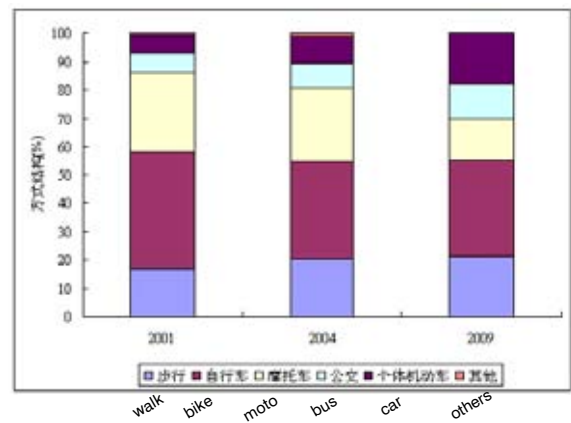


Different transportation

China's diversity also expresses itself in the range of transportation ways available. It creates important challenges in the the public roads organization and the cross-roads management.



Use of different transportation



Public transportation



Besides normal buses, like in every other city, Changzhou implemented a Bus Rapid Transit service (BRT) three years ago. Changzhou is renowned for this very efficient service .

The BRT is conceived as the main public transport network, before the metro, which will be implemented as a second option and will be linked with the existing BRT network.

The BRT has many advantages, compared to the bus, the trolley bus or the metro: It has a very important transport capacity and is very fast. Nevertheless, such a network is not easy to create, given its need for special lanes.



BRT information

150-180 people/bus of 18m long
 Speed: 25-35km/h (80km/h max)
 Fuel: diesel fuel
 Design: Accessible for disabled people.

January 2008: launching of B1 (Beginning of construction in May 2007)
 May 2009: Launching of B2

B1- north-south. The main line is 24,5km long, with a distance of 980m between each station

B2- east-west. The main line is 21,5km, 781m between each station

The housing prices along the BRT lanes have increased of 5 to 10%. 80% of prospective buyers actually consider it to be a major element in their decision to acquire a real estate property.

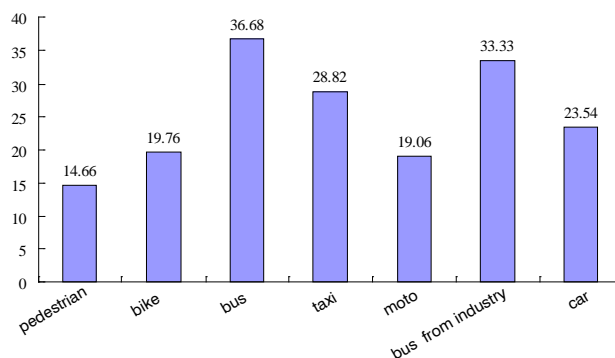
The development of a metro is also under consideration.



Soft transportation



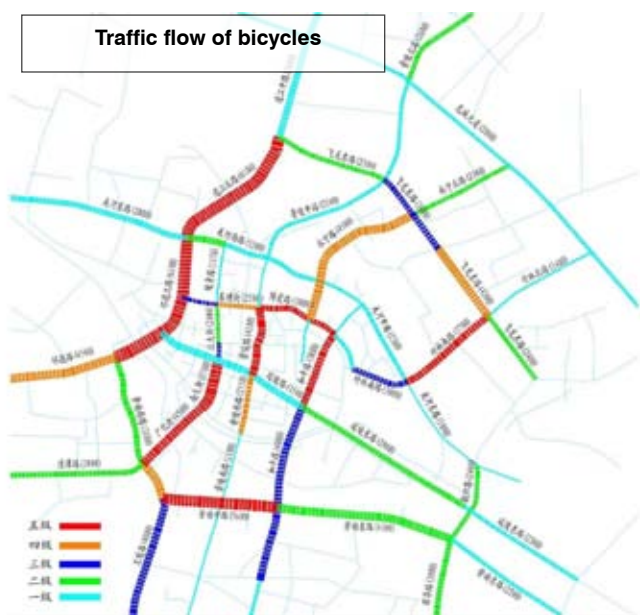
Average duration of different modes of transport



In comparison with other transport ways, pedestrians, cyclists and motorists have significant importance in the city. In a medium-sized city like Changzhou, such transport ways hold obvious advantages, in terms of speed and flexibility.

China was the bike's country. The economic growth is slowly erasing the bikes out of the picture, while they were the main transport way in the everyday life. The roads, which are getting larger and larger and the cross-roads are now ruled by cars. Electric mopeds are an interesting choice for long journeys without suffering from traffic jams. Cars don't care much about bikers and pedestrians.

Traffic flow of bicycles



Other transportation

Harbor located on the Yangtze river is Category 1, and can dock 10 000 tons ships. In Changzhou it also exists 2 important harbors and smaller ones along the southern part of Grand Canal.



LuAnZhou harbor on Yangtze River in Changzhou



Transportation of goods along the Grand Canal

The airport of Changzhou is the second largest one of the Jiangsu Province. A project plans to enlarge it.

Electric-car factories are implemented north and south, and while this activity is rather new, some vehicles are already on the roads, even though they do not have a license. Wujin's police, in Changzhou's south district, and the government have acquired new electric cars, and the official commercialization should be launched in six months. Electric loading stations are already under construction. The battery's autonomy is 100km.

POINT OF VIEW: "A small electric vehicle is quite cheap, and costs about 30.00 RMB"

Ten cities were chosen by the Chinese government to promote electric cars. Shanghai, in particular, has the economic power to acquire them massively. In Shanghai, electric buses are used for the Shanghai World Expo.

Electric mopeds have been on Changzhou's roads for almost 5 years, therefore, one can attest of their important number. They are plugged for 4 to 6 hours, in a regular outlet, so as to charge them. Their autonomy is 50 to 100 km and they are very cheap: 1500 RMB - which is China's minimum wage.

This transport way is mainly purchased by low-income households, workers, "blue collars" and their families, which are the most important part of Changzhou's inhabitants. "Silver collars", which are skilled technical workers, are a part of the middle class which tends to grow, and buy new BMWs, Audis, etc...



BenNiu Airport



Dedicated lanes for motorcycles and electric mopeds

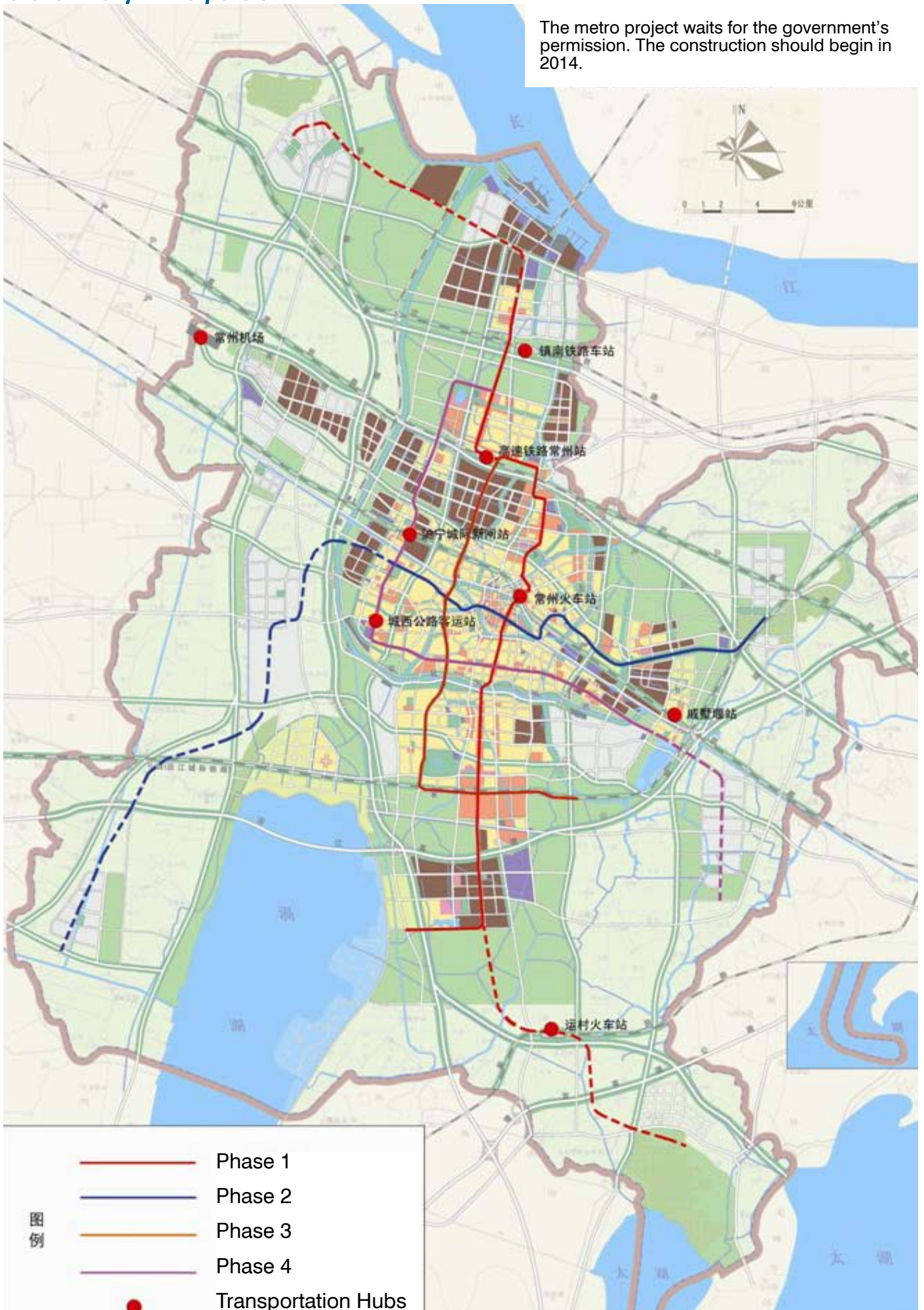


Bike public rent is not really in use by the population



Subway Project

The metro project waits for the government's permission. The construction should begin in 2014.



APPENDICES

City advertisement



Changzhou invests in advertisement to attract new developers

Events

Here are some of Changzhou's events bound to happen this year :

7th China International Animation and Digital Arts Festival

Changzhou hosts this festival since 2004. This 2010 edition will take place from August 26th to the 30st, with the support of the Chinese Ministry for Culture. It will show many films from different countries.



7th Jiangsu Games

Most of the recently built sport infrastructures in XinBei will be used for the first time during these games, from October 16th to the 23rd.



LI NING China Masters Super Series 2010

The «Badminton World Federation» competition will take place in Changzhou from September 14th to the 19th.



4th China Rose Fair and Chinese Regional Conference 2010

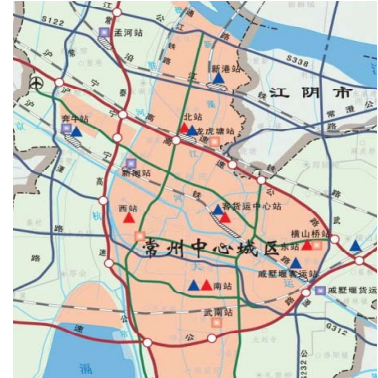
This event was held in Zijing Park from April 27th to May 5th, in collaboration with China's roses society and the city of Changzhou.

All photos on this page, featuring the opening ceremony, Zijing Park in Changzhou, lecture room at the Traders Fudu Hotel, and the dragon boat races on Taihu Lake, were supplied by Gérald Meylan and were taken by the official photographer

New urban projects



Airport enlarge project.



Creation of a cross-road, east of on the 3 express ways under construction (marked in red)

Zijing Park, north east of the city, is in the final phase of its construction.



La ville investit en nouveaux projets et renouvellement des parcs publics.



The new high-speed train line and the new central Station, replacing the old railway between Shanghai and Nanjing, will be launched in July.

Decorative lights neon along the Canal are already.



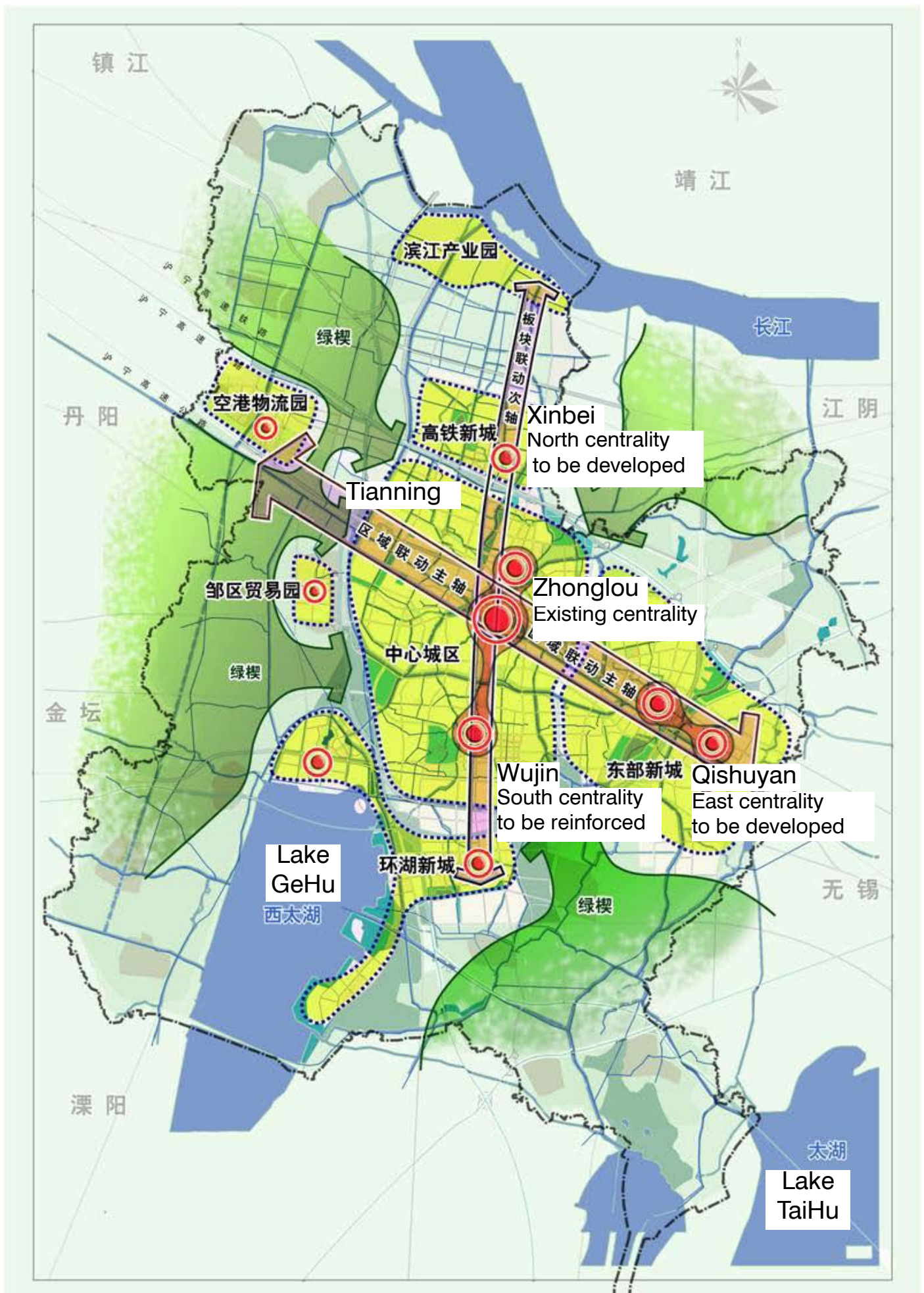
Development in Z of Great Shanghai



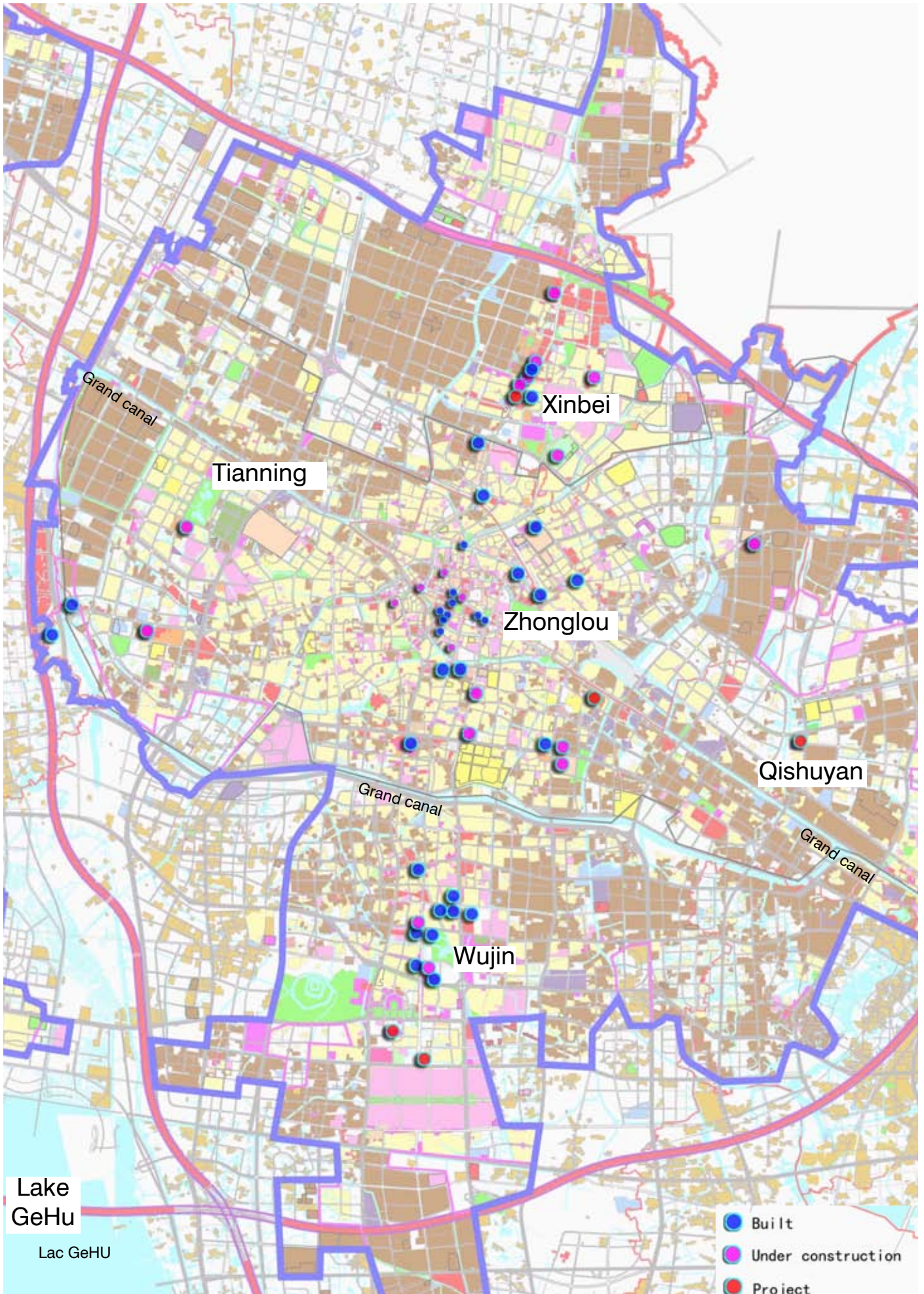
TRANSPORT_Road network



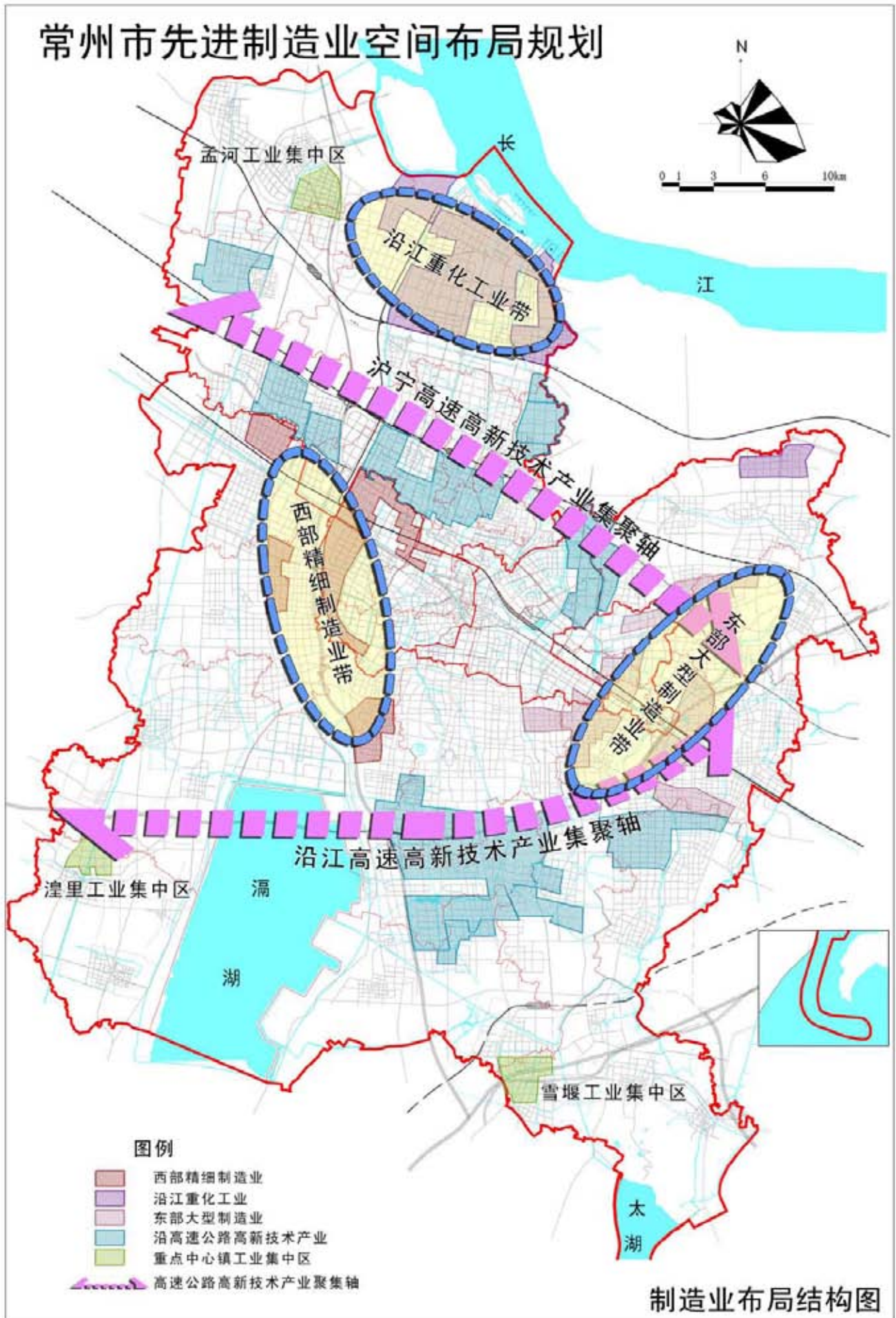
Land Use _ New centralities planning



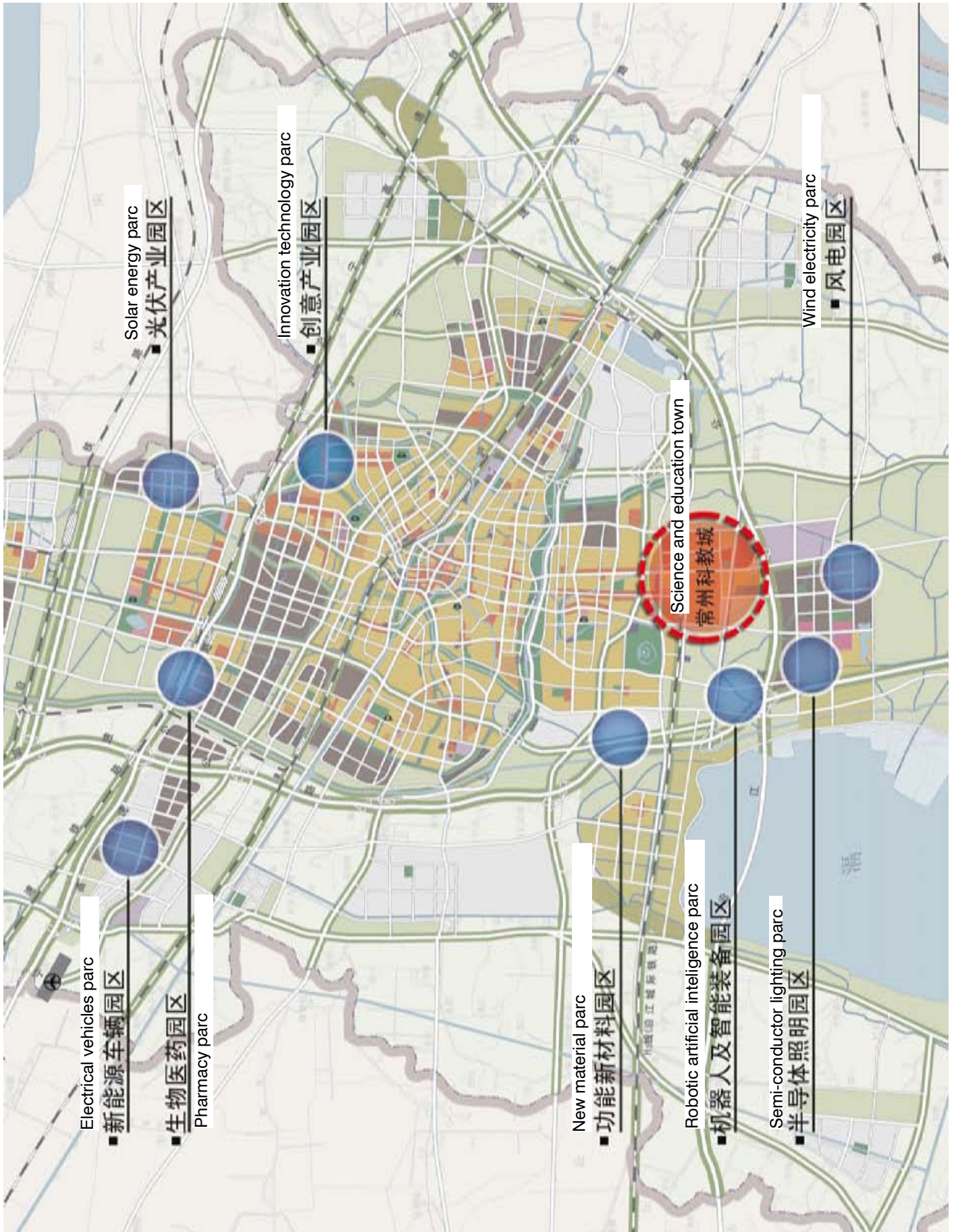
Existing commercial places



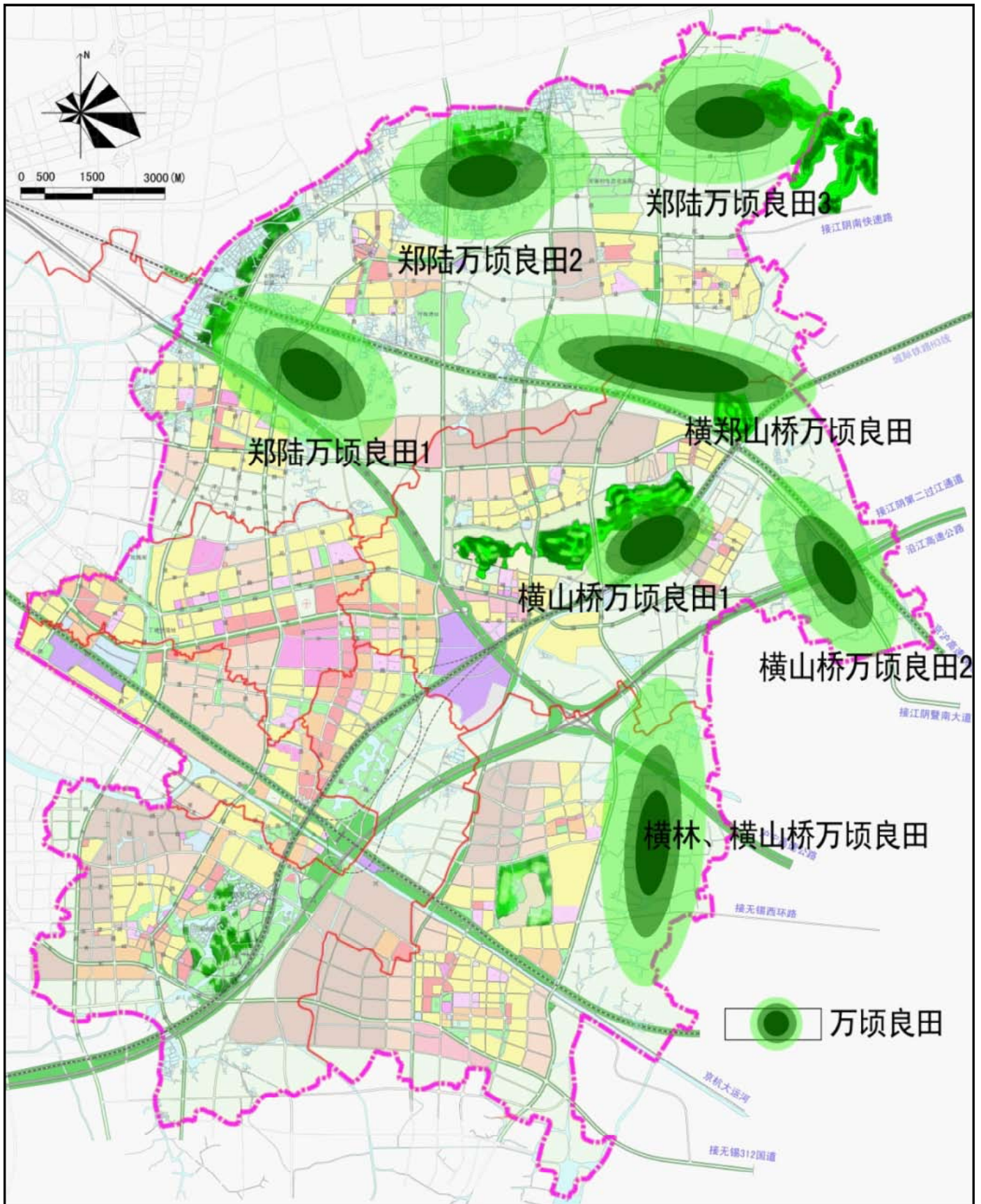
Land Use _ New industrial areas



PROJECT _ New industrial areas



PROJECT _ Agricultural areas



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