PRINCIPLES OF SUSTAINABLE URBAN PLANNING

可持续城市规划的原则与实践

China's Development Challenge 中国城市开发的挑战


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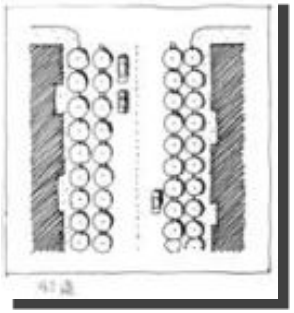
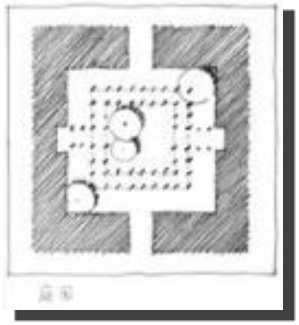
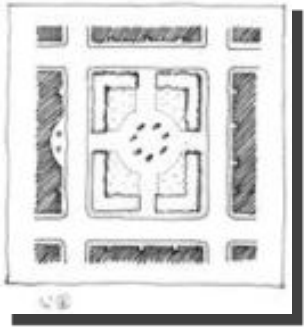
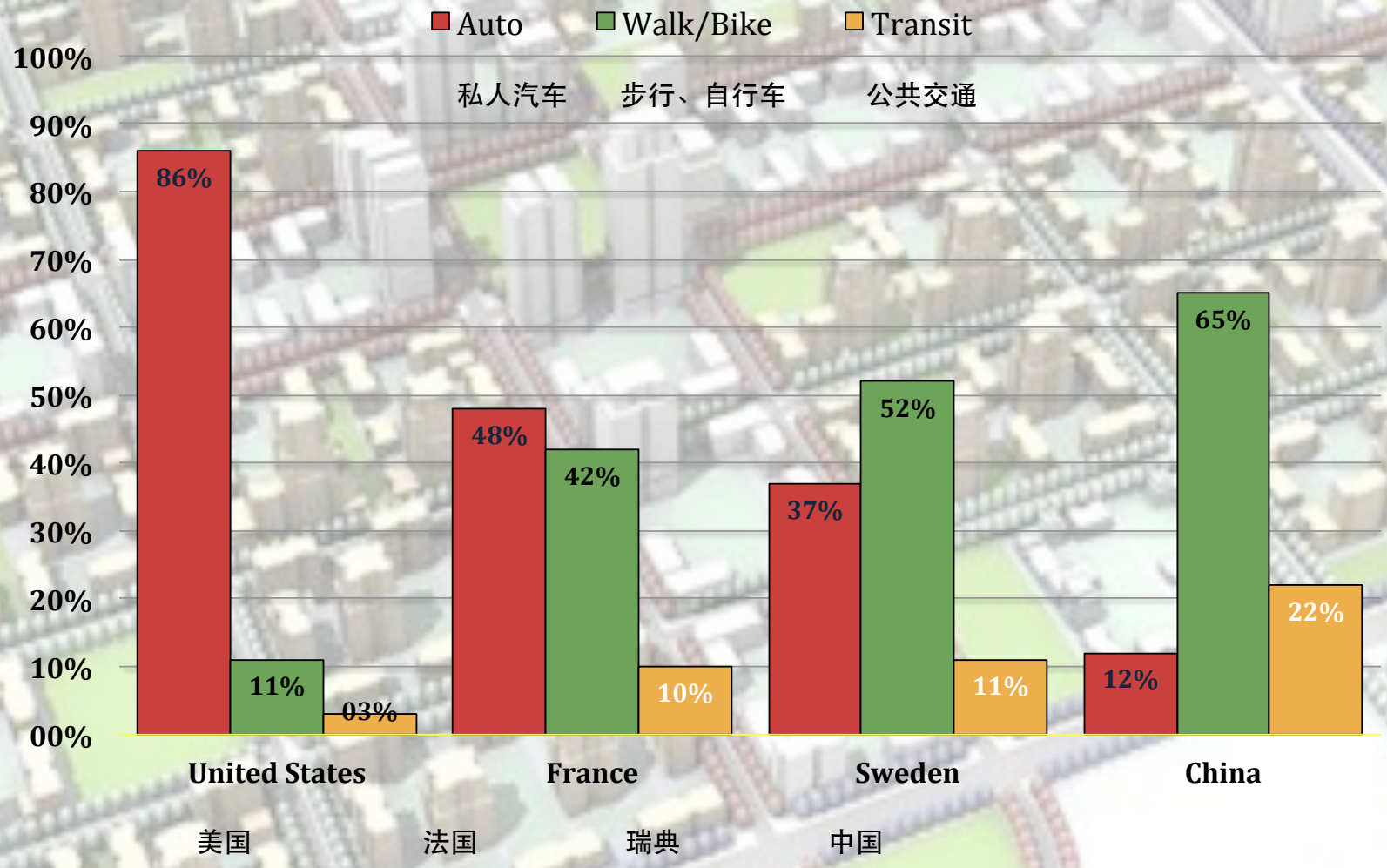






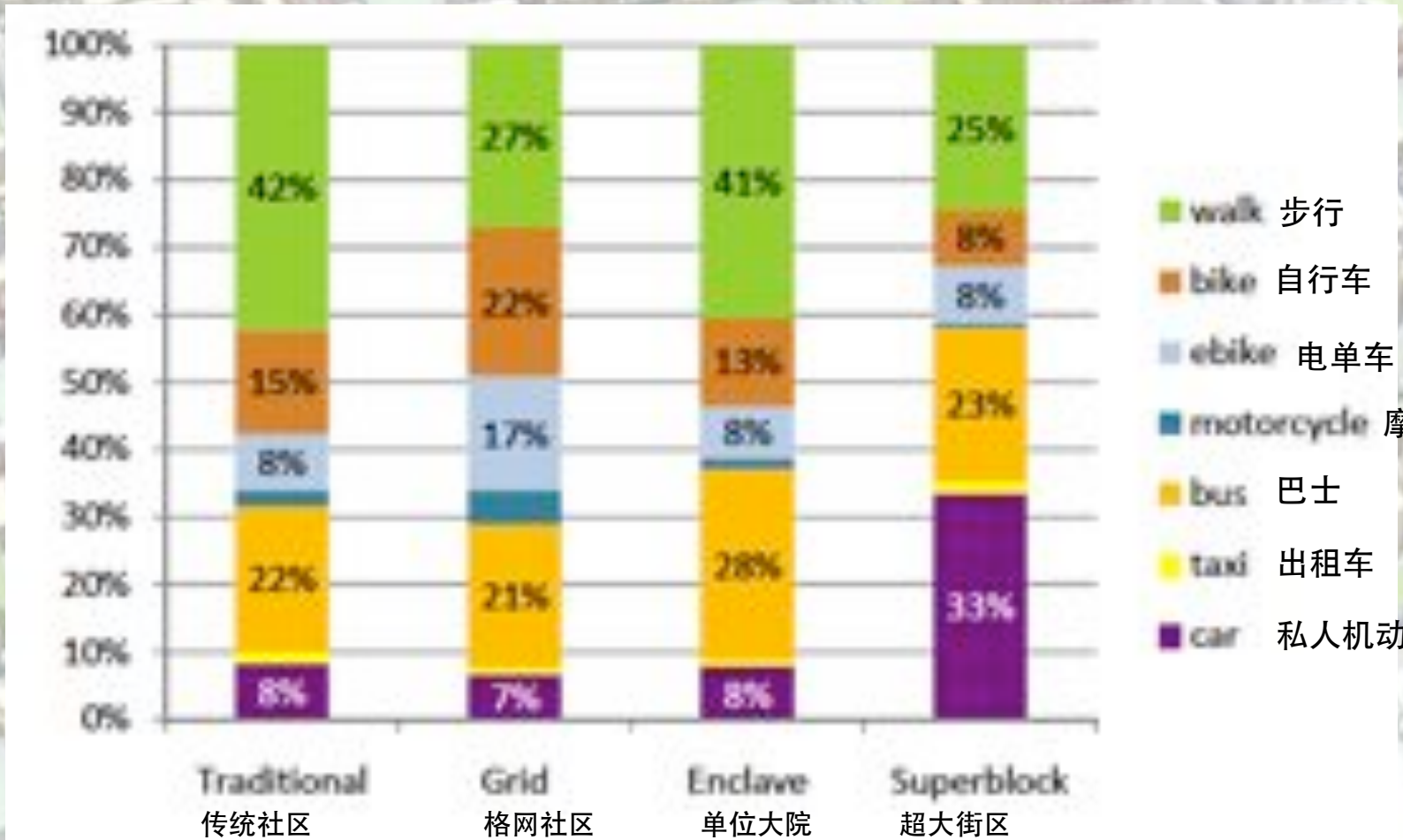
Transportation Mode by Country

各国交通出行模式



Mode Split by Neighborhood Type

各类社区的出行模式分担



Benefits of Sustainable Urban Planning

可持续的城市规划效益

- **Improve mobility**
- **Attract economic activity**
- **Improve air quality**
- **Preserve arable land**
- **Reduce carbon emissions**
- **Support a harmonious and prosperous society**

- 增加出行便利性
- 吸引经济活动
- 提高空气质量
- 减少碳排放保护
- 可耕农田
- 创建和谐、繁荣的社会

1

建设步行优先的邻里社区
Develop neighborhoods that promote walking

Chongqing, China

1

Develop neighborhoods that promote walking
建设步行优先的邻里社区

A. Shorten street crossings and emphasize pedestrian safety and convenience.
缩短街道穿行距离，保证行人安全和方便

Design features in Hong Kong slow traffic and keep pedestrians safe.

特殊的设计处理使车流速度减缓并保证行人安全- 香港

New York City has pedestrian friendly streets throughout downtown.

纽约的步行街遍布市区

1

Develop neighborhoods that promote walking
建设步行优先的邻里社区

B. Encourage ground-level activity and create places to relax along primary pedestrian routes
鼓励步行，为主要步行路沿街提供丰富的城市生活和休闲场所

底层零售商业和服务以及步行街可以鼓励步行活动

广州北京路步行街

2

优先发展自行车网络
Prioritize bicycle networks

Bike-prioritized Intersection

自行车优先的十字路口设置

2

Prioritize Bicycle Networks
优先发展自行车网络

A. Design streets that emphasize bike safety and convenience
设计道路时突出自行车的安全和便捷

- Create dedicated bike lanes, at least 3 meters wide in each direction, on all streets except low-speed local streets.
- 在除了支路以外的所有道路上设置自行车道，每一方向至少3米宽

- Provide secure bike parking in buildings, on streets, and at transit stations.
- 在楼宇、道路和车站附近提供安全的自行车停放处

2

Prioritize Bicycle Networks
优先发展自行车网络

B. Create auto-free streets and greenways to encourage non-motorized travel

建设慢行道网络，鼓励使用非机动车

- Create car-free corridors across the city grid, no more than 800 m apart.
- When combined with transit and pedestrian-only streets, bike lanes should be protected.

- 在城市建立慢行道网络，两条慢行道间距不大于800米
- 在与公交车道或者步行道共线时，自行车道应被保护独立出来

3

创建密集的街道网络
Create dense networks of streets and paths

Recommended: Dense networks of streets and paths
建议：创建密集的街道网络

Discouraged: Arterial-dominant street network
不提倡：宽马路为主的干道网络

3

Create dense networks of streets and paths
创建密集的街道网络

A. Create dense street networks that enhance walking, bicycling, and vehicle traffic flow.

创建密集的街道网络来改善步行、自行车和机动车出行

- Plan for a minimum of 50 intersections per sq. km
- Limit traffic speeds on local streets to 40km/h
- 规划每平方公里至少50个交叉口
- 支路限速40公里/小时

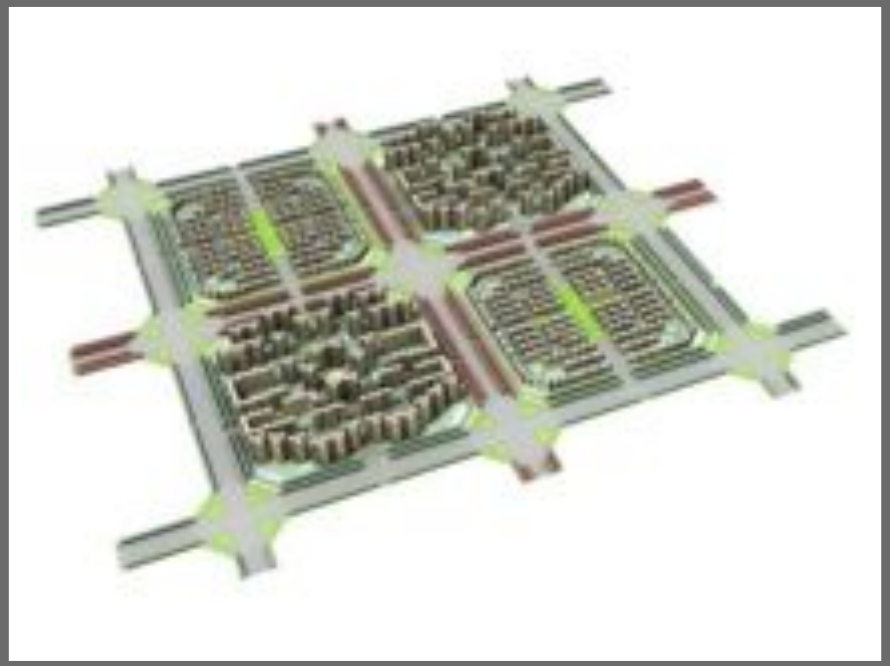
- Design local streets with traffic-calming features to help enforce speed limits.
- 设置交通静化措施以帮助限速的实施

3

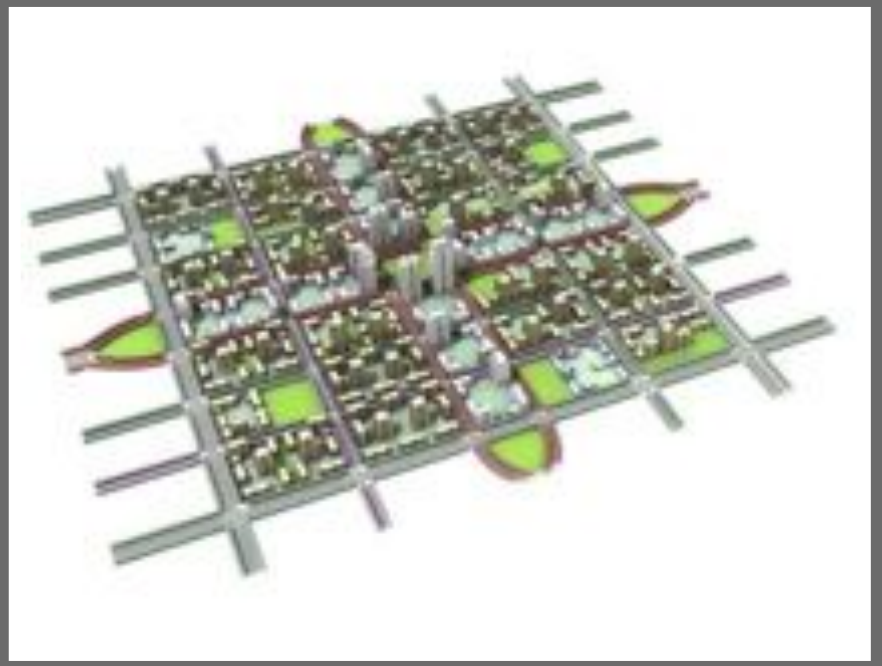
Create dense networks of streets and paths
创建密集的街道网络

B. **Disperse high traffic volumes over narrow, parallel routes rather than concentrating on fewer major arterials.**

将交通流分散至宽度较小的互相平行的道路上，而非集中在较少的主干道。



- Create a grid of varied street types to provide multiple parallel routes for all types of traffic
- 营造一个由不同街道类型组成的道路网络，为各类交通提供多个平行路径



- Incorporate through roads that connect surrounding neighborhoods at least every 300 meters.
- Replace major arterials wider than 45 meters with efficient one-way couplets
- 整合通过性道路，至少每300米即可连接周围邻里区域
- 采用高效的单向二分路取代路宽过45米的主干道

4

支持高质量的公共交通服务

Support high-quality transit

Guangzhou

4

Support high-quality transit
支持高质量的 公共交通服务

A. Ensure frequent and direct transit service.
确保频繁、直接的公共交通服务

- Establish a grid of high-capacity, high-speed transit corridors approximately every 1000 m with dedicated transit lanes.
- 建立设置有公交专用道、间隔约为1000米的高效公交网络

- Provide an integrated multi-modal system and ensure seamless transfers to all available transit options. Minimize the number of transfers needed for most passengers.
- 建立一个集成多元化交通体系，实现所有公交选择之间的无缝换乘，缩减换乘次数。

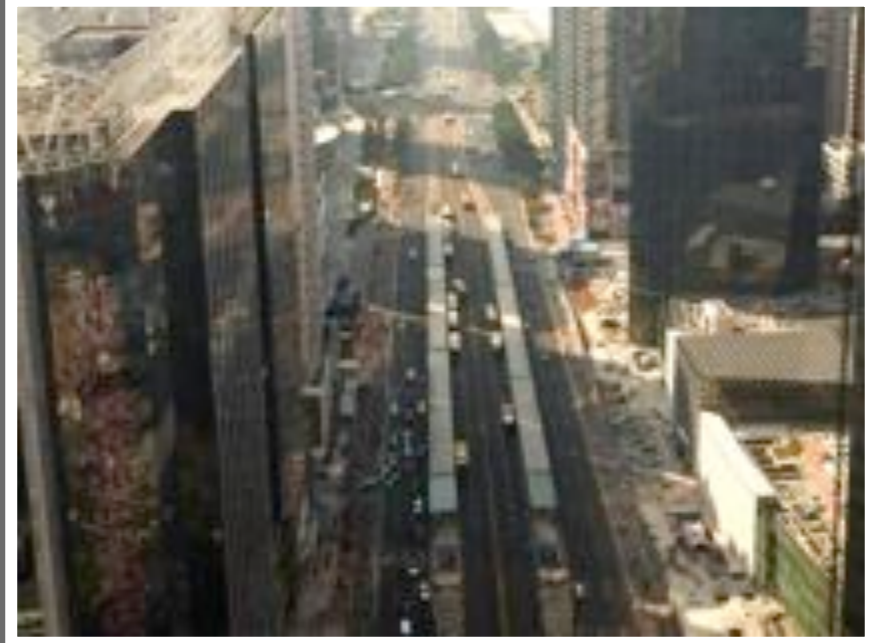
4

Support high-quality transit
支持高质量的 公共交通服务

B. Locate transit stations within walking distance of homes, jobs, and services.

在住宅、工作和服务场所步行可达的距离内设置公交站点

- All housing and job centers should be within 400 meters of a local transit station and 800 meters of regional transit service.
- 所有住宅和办公集中场所距离本地公交车站不应该超过400米，距离区域性公交站点不应超过800米。



- Increase density and ground floor services adjacent to major stations.
- 在主要公交站点周边增加开发密度和临街服务业。

5

建设多功能混合的 邻里社区
Zone for mixed-use neighborhoods

5

Zone for mixed-use neighborhoods
建设多功能混合的 邻里社区

A. Encourage an optimal balance of housing and services through zoning codes.
通过控规指标来实现住宅与服务的最佳平衡

- Housing options should accommodate a mix of income levels and age groups.
- Shops, schools, parks, and services should be located within 400 meters of housing. This includes age-specific services, such as day care.
- Mix housing, shops and services within commercial districts to create 24 hr communities.

- 为不同收入、不同年龄的人提供住房选择
- 住宅距离商店、学校、公园和服务机构不应超过400米，包括针特定年龄人群，例如托儿所。
- 在商业区搭配住宅、商铺以及市政服务，从而营造一个24小时都活跃的社区。

5

Zone for mixed-use neighborhoods
建设多功能混合的 邻里社区

B. Provide a variety of accessible parks and open space.
提供各类有良好可达性的公园和开放空间

- Neighborhood parks should be located within 500 meters of housing; large regional parks within 1 kilometer.
- Clusters of schools and civic destinations should form neighborhood centers within 400 meters of residential buildings.
- Unique natural environments and local cultural and historical assets should be preserved and creatively reused.

- 社区公园距离住宅应小于500米，区域性公园不超过1公里
- 用市政服务以及学校来构建社区中心，并使其布置在居住区的400米范围内
- 应保护并创造性再利用独特的自然环境和当地文化历史资源

6

将土地开发强度和公共交通承载力相匹配

Match density to transit capacity

In Curitiba, Brazil, high-rise development is focused within 200 meters of mass transit lines.

在巴西的库里提巴, 高层建筑距离大众公交线路不会超过200米。

In Guangzhou, density is focused around the BRT corridor. The system's capacity matches commute-hour transit demand.

在广州, 捷运走廊附近的密度较集中。系统能力和通勤时间的运输需求相匹配。

6

Match density to transit capacity
将土地开发强度和 公共交通承载力相匹配

A. Match density to the maximum peak-hour capacity of a transit system.

将开发密度和公交系统高峰小时的最大运送能力相匹配

- Both residential and commercial density should be designed to match the area's peak commute transit capacity.
- 民用和商用开发密度应该与当地公交高峰时段运送能力相匹配

- Major job centers should only be located where high-volume transit services are available.
- 主要就业中心应位于高容量公交服务区。

6

Match density to transit capacity
将土地开发强度和 公共交通承载力相匹配

B. In key employment areas, zone for mixed-use districts that combine everyday uses.

在主要就业区规划多功能的混合利用区，满足日常所需

- A mix of recreation, services, and retail should be located in employment areas to provide for workers' daily needs.

- 应在工作区域设立包括娱乐、服务和零售商业来满足就业人口的日常所需。

- Use TOD Center standards for minimum employment and population densities at stations to reinforce demand for services, transit and mixed use environment..

- 采用TOD中心的设置标准在公交站点周边确定就业与居住人口密度最小值，确保对于服务、公交以及混合利用的需求。

7

确保紧凑型发展，提倡短程通勤

Create compact regions with short commutes

Kunming Regional Growth
昆明区域发展

7

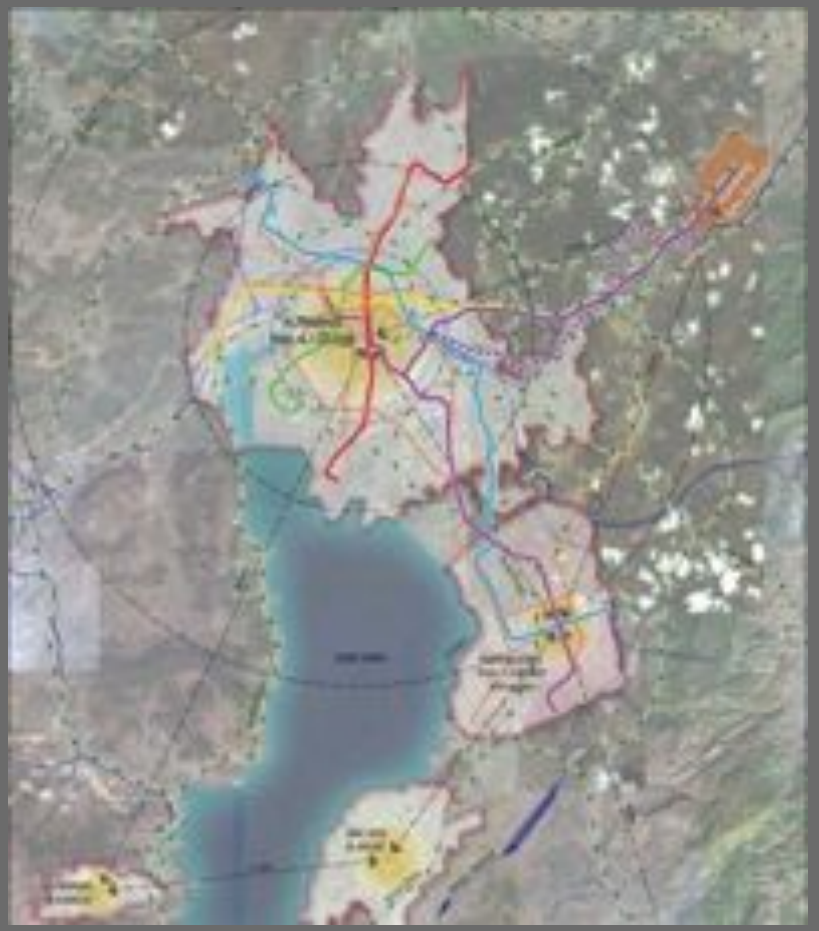
Create compact regions with short commutes
确保紧凑型发展，提倡短程通勤

A. Reduce sprawl by focusing development in areas adjacent to and within existing cities.

在紧靠现有城区地区或者现有城区内部安排发展，避免无序蔓延

- Regional development should seek a compact footprint through preservation, reuse, and infill of existing areas, balanced with dense areas of new growth.
- New development should avoid agricultural lands and other environmental assets.

- 区域开发应通过对现有地区进行保护、再利用和填充寻求紧凑型发展，与高密度的新兴区域保持平衡
- 避免在农田等有价值的环境资源上安排城市开发



7

Create compact regions with short commutes
确保紧凑型发展，提倡短程通勤

B. Create a jobs/housing balance within a short commute distance.

在较短通勤距离内实现职住平衡

- Create multiple high capacity transit connections to all new development areas
- Locate job centers and aim to limit commutes to approximately 5 kilometers or 15 minutes.
- Create smaller decentralized job centers that encourage reverse commutes.

- 为所有新的开发区域配备多种高容量公交联系
- 将就业中心进行合理分散，使得通勤距离限制在5公里范围内，或者通勤时间限制在15分钟内
- 创建小型分散的就业中心来鼓励双向通勤。

8

规范停车和道路使用，增加出行便利性

Increase mobility by regulating parking and road use

Cities may choose to charge tolls for use of overloaded roads.
城市可对拥堵路段征收过路费。

Singapore's Electronic Road Pricing system has cut congestion and raised money for public transit and other uses.
新加坡的电子道路收费系统可减轻拥堵情况

8

Increase mobility by regulating parking and road use
规范停车和道路使用，增加出行便利性

A. Limit parking in key employment districts to discourage driving during peak traffic periods.

在主要就业区限制停车，引导人们高峰时段不驾车

- Limit parking ratios in employment areas to 0.2 stalls per worker.
- Eliminate long-term street parking to ease congestion and reduce street width.
- Remove all parking-space minimums for residential buildings and establish citywide parking-space maximums consistent with targets for private car use.

- 将就业区域的停车位配比限制在0.2个/人
- 禁止长时间沿街停车以缓解堵塞并降低街道尺度
- 取消住宅设计中的最低停车位配比标准，并设立全市范围的停车位上限以匹配规划中对小汽车使用所设定的目标

8

Increase mobility by regulating parking and road use
规范停车和道路使用，增加出行便利性

B. Adjust car fees by time of day and destination.
在主要就业区限制停车，引导人们高峰时段不驾车

- Institute a congestion-management system that limits auto use in key urban and employment district at peak traffic hours.
- Charge tolls for use of overloaded roads and bridges and use the fees to support transit.
- Vary parking charges by time of day and location to insure high turnover.

- 建立拥堵管理体系，限制高峰时间主要城区和就业区的小汽车使用
- 对高负荷道路和桥梁征收费用，利用改费用改善公共交通
- 根据时间和地点调整停车费用，实现较高的停车场周转率

Chenggong 呈贡新区

Low Carbon City 低碳城

OLD KUNMING NEIGHBORHOOD

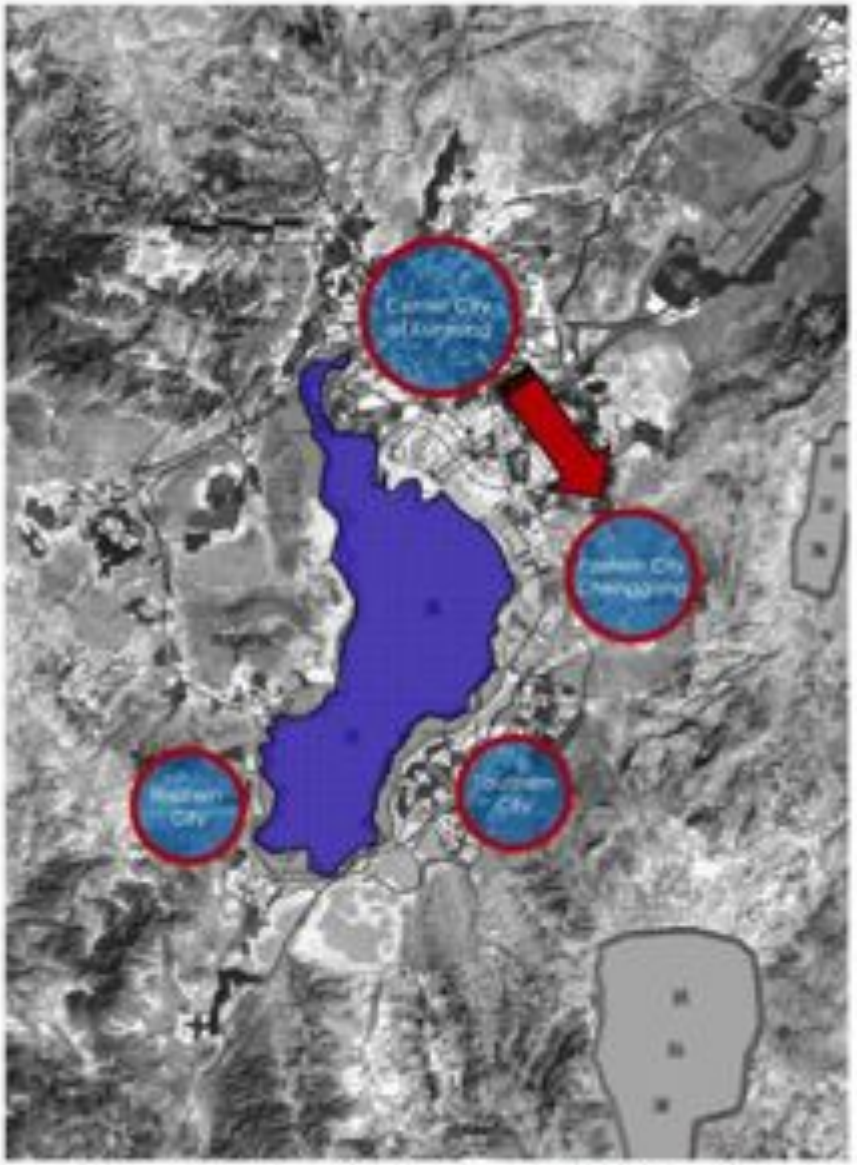
KUNGE TOWER

LONGTAN TOWN

DOUNAN FLOWER MARKET

GUANSHAN RESERVOIR

DIANCHI LAKE

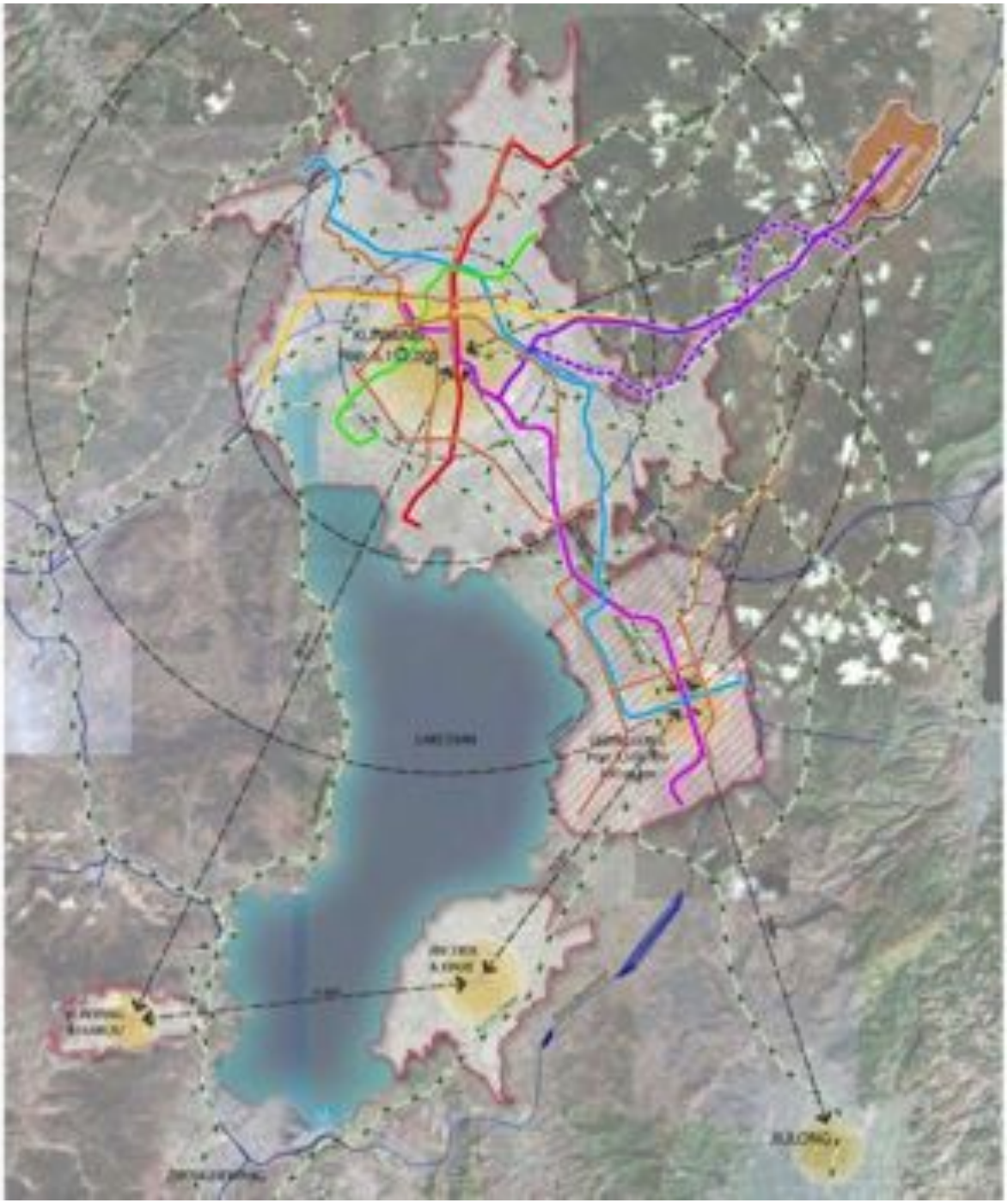


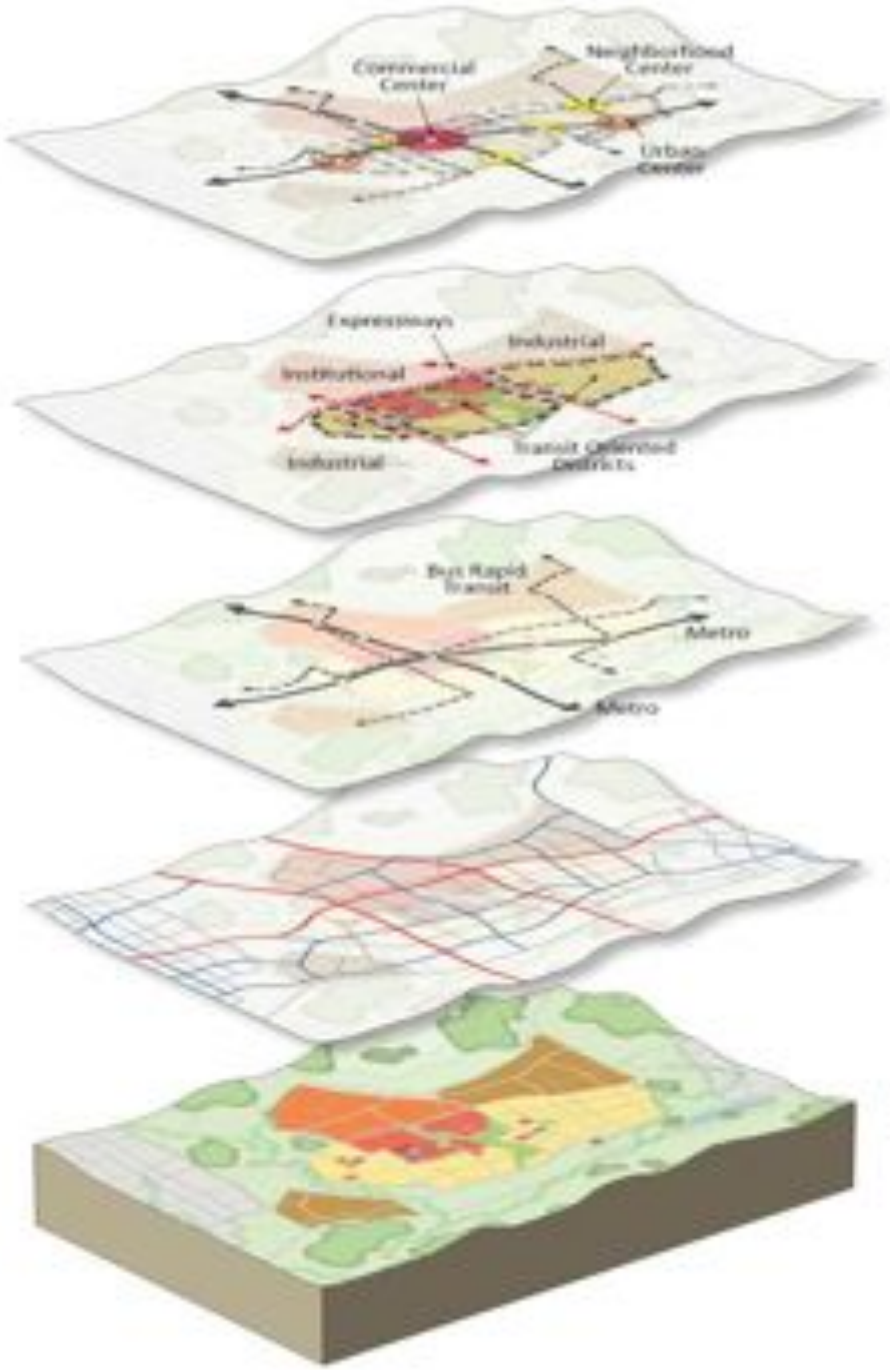
REGIONAL PLANNING CONCEPT: 4 CITIES AROUND DIANCHI LAKE

Chenggong New Construction　呈贡新城现有建设情况

REGIONAL CONTEXT

区域背景





CENTERS

中心

TRANSIT ORIENTED DISTRICTS

公交为导向片区

CITY TRANSIT MAP

城市公共交通规划

CITY CIRCULATION PLAN

城市路网规划

CITY MASTER PLAN

城市总体规划

Existing New Town Master Plan
现有新城总体总体规划

Transit Oriented District Locations
TOD 分布

TOD Centers and Transit Lines
TOD 中心以及公交线路

LAND USE USING
“SMALL BLOCK”

土地利用采纳“小街区”设置中的标准

CIRCULATION USING
URBAN NETWORK

交通体系采纳城市格网

CITY MASTER PLAN
TOD AREA

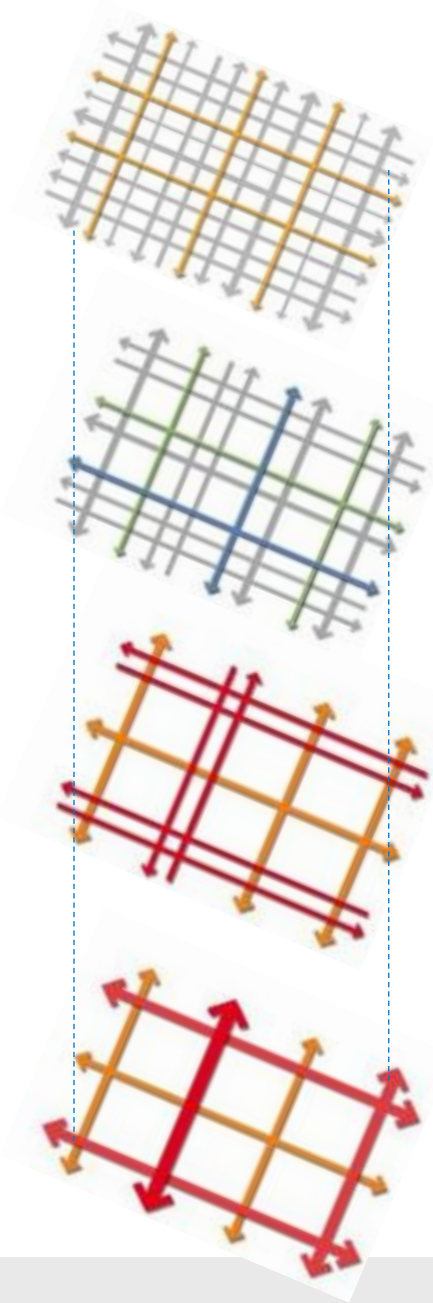
城市总体规划层面的TOD区域


CAYUGA ROAD


CAITIOM ROAD
Govt. Center
Central Park
Tunnan University

Applying Low Carbon Design Principles to Chenggong

低碳设计原则在呈贡新区的应用



Add Local Streets

添加支路

Add Car-Free Streets

添加慢行道

Disperse Traffic on One-Way Couplets

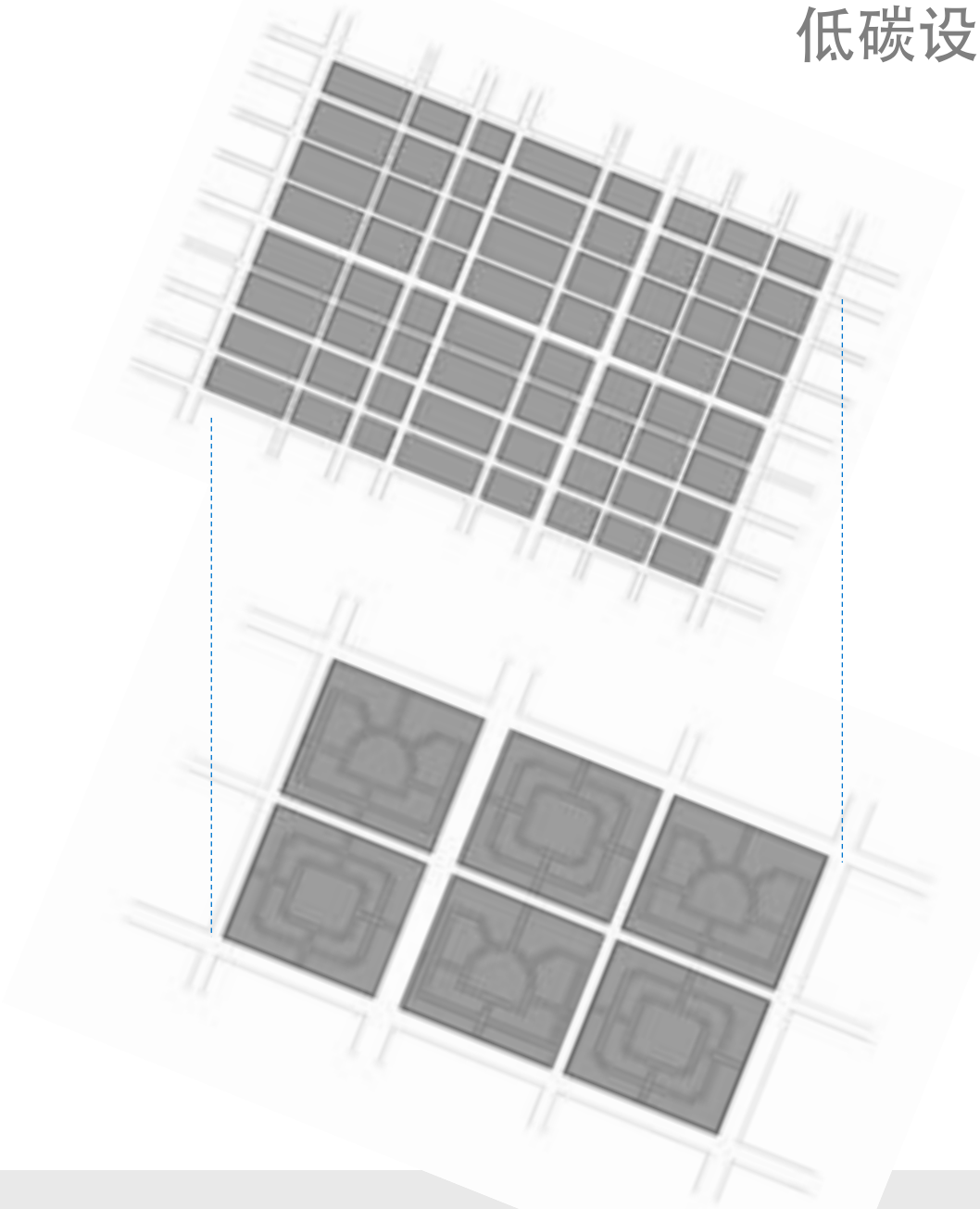
通过单向二分路分散交通流

Superblocks

超大街区

Applying Low Carbon Design Principles to Chenggong

低碳设计原则在呈贡新区的应用

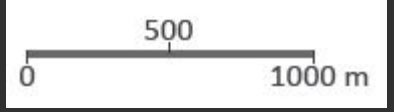


Human Scale Blocks – Total R.O.W. 30%

人行尺度街区
总路面面积比例 30%

Superblocks – Total R.O.W. 36%

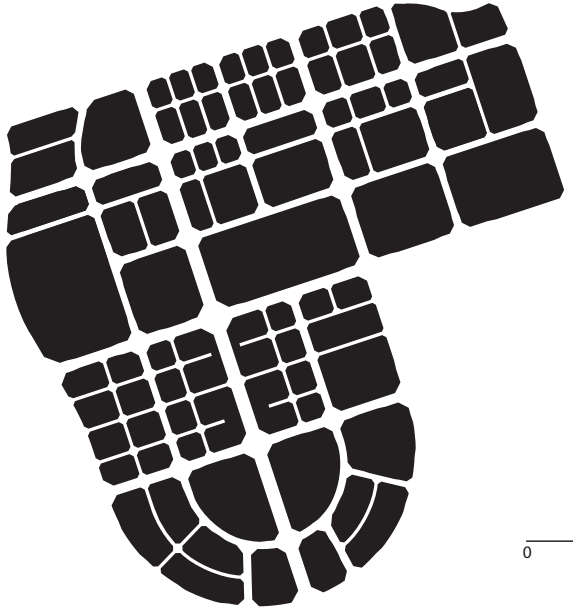
超大街区
总路面面积比例 36%



CALTHORPE ASSOCIATES
URBAN DESIGNERS. PLANNERS. ARCHITECTS

Network of Arterials and Superblocks

主干道路网与超大街区

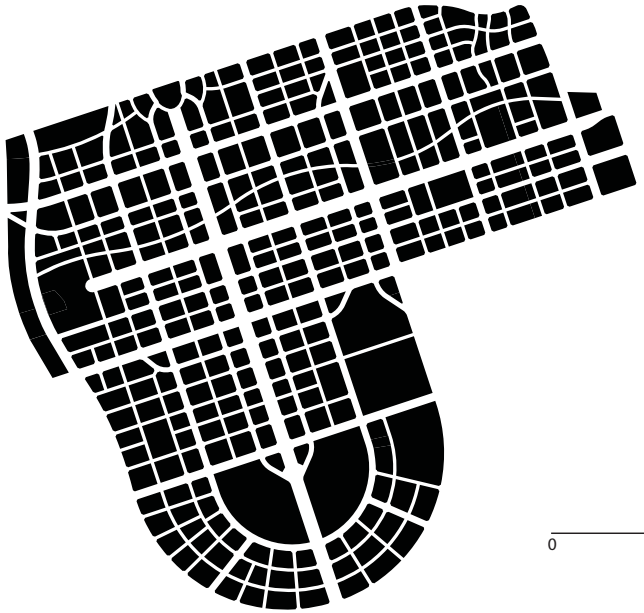


Network of Varying Street Widths and Block Sizes

多尺度街道与街区的网格

The fine grained street network allows an urban grid of small blocks to organize the site and provide for a pedestrian scaled environment.

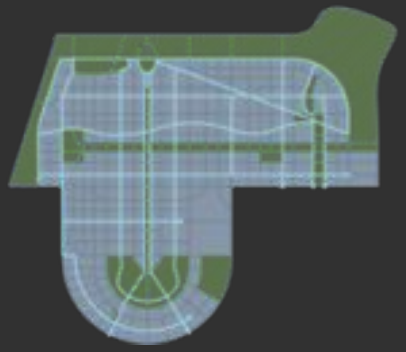
细致的接到网络为小街区灵活地组织城市空间提供了可能性，并营造了人行的尺度和环境



Applying Low Carbon Design Principles to Chenggong

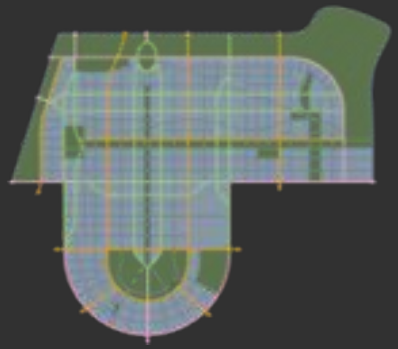
Mixed uses and small blocks
Small blocks and mixed uses replace typical superblocks to create a more walkable community. The greater street density improves pedestrian access and disperse traffic.

多功能的小型街区
多功能的小型街区取代了大型街区，创建了更适合步行的社区环境。增加的街道密度改善了步行的可达性，同时疏散了车流。



Auto-free streets
A network of car free streets, some with bus access, others for bikes and pedestrians, are spaced no more than 800 meters apart throughout the town.

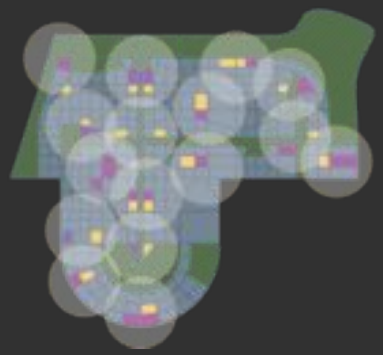
公交和慢性专用路
带有公交车道或仅针对自行车和行人的专用街道网络形成了街区网络，道路间隔不超过800米。



Paired one-way streets and narrow arterials
Through traffic is carried on streets no wider than 45 meters. Higher volume traffic is diverted onto one-way street pairs, no more than 30 meters wide in each direction to allow easy pedestrian crossing.

单向双联路和更窄的干道
通过性道路宽度不可超过45米。针对大流量交通，可将道路分为各路宽仅为30米的单向双联路，便于行人穿行。

Applying Low Carbon Design Principles to Chenggong
低碳设计原则在呈贡新区的应用

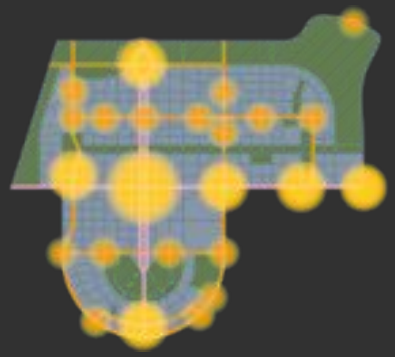


Walkable neighborhoods
Each neighborhood has a roughly 500-meter walking radius, centered on local parks, schools, and other civic uses.

适合步行的邻里社区
当地公园、学校和其他公用设施应位于邻里社区不超过500米的步行半径范围。

Accessible parks
Linear greenways, neighborhood parks, and larger community parks are located throughout the plan and are easily reached by car-free streets and quiet local roads.

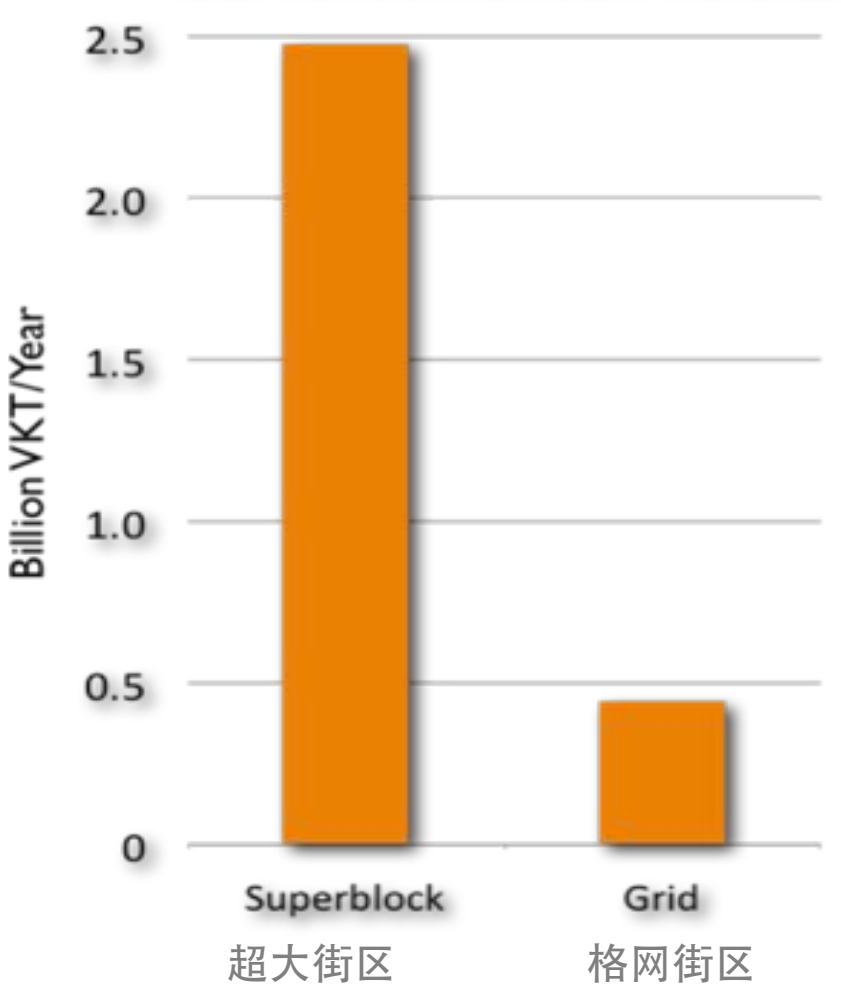
可步行到达的公园
绿色通廊、邻里公园和较大型社区公园遍布规划范围，可通过公交慢行专用道和安静的生活道路轻松到达。



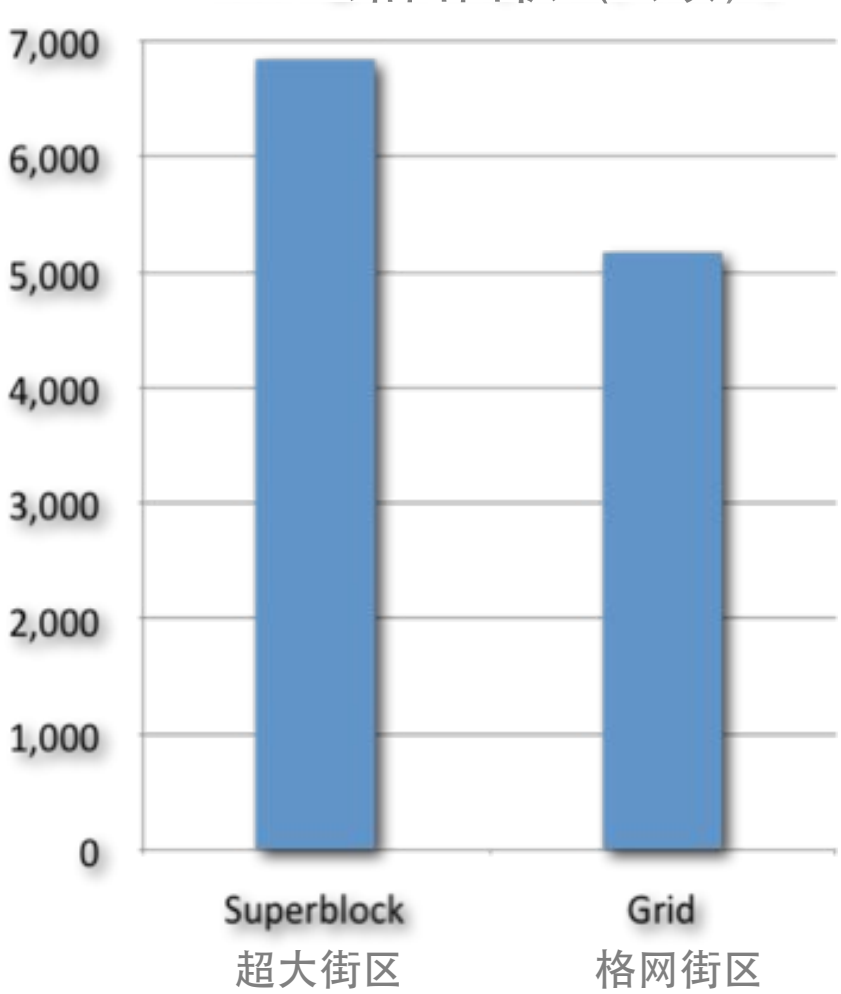
Transit-oriented Development
Areas with high levels of transit service, such as the crossing of two metro or BRT lines, have higher density, more commercial development, and a greater mix of uses.

以公交为导向的发展
带有完备公交服务的区域，如区域中心两条地铁线路的换乘点，密度将继续增加、商业发展更为充分、使用功能更为全面。

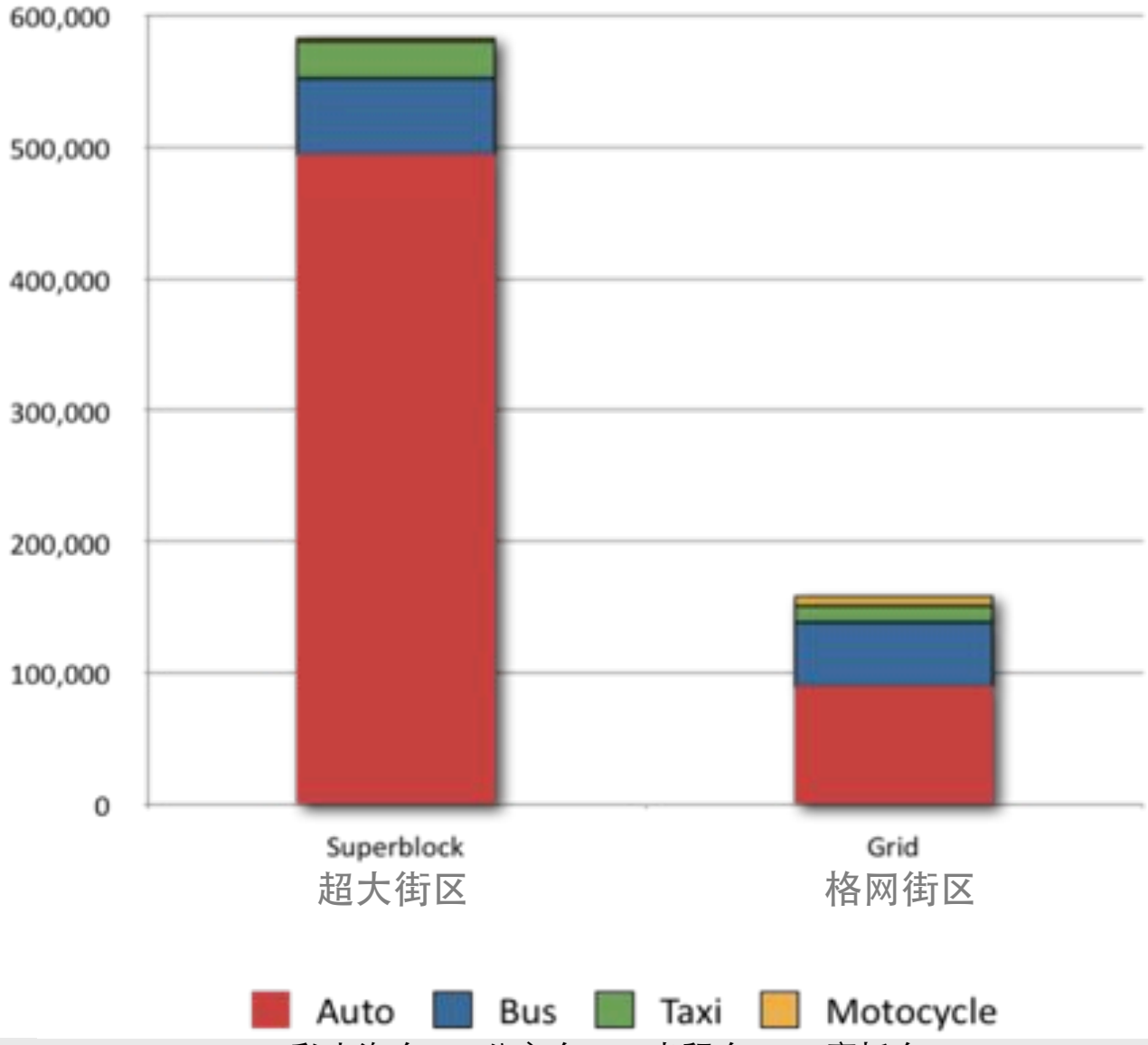
Total Vehicle Kilometers Travelled
车型公里数



Total Right-of-way Area (hectares)
路面面积（公顷）



Total Transportation Carbon Emissions (MT CO_2 / year)
交通碳排放总量（百万吨二氧化碳/年）



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