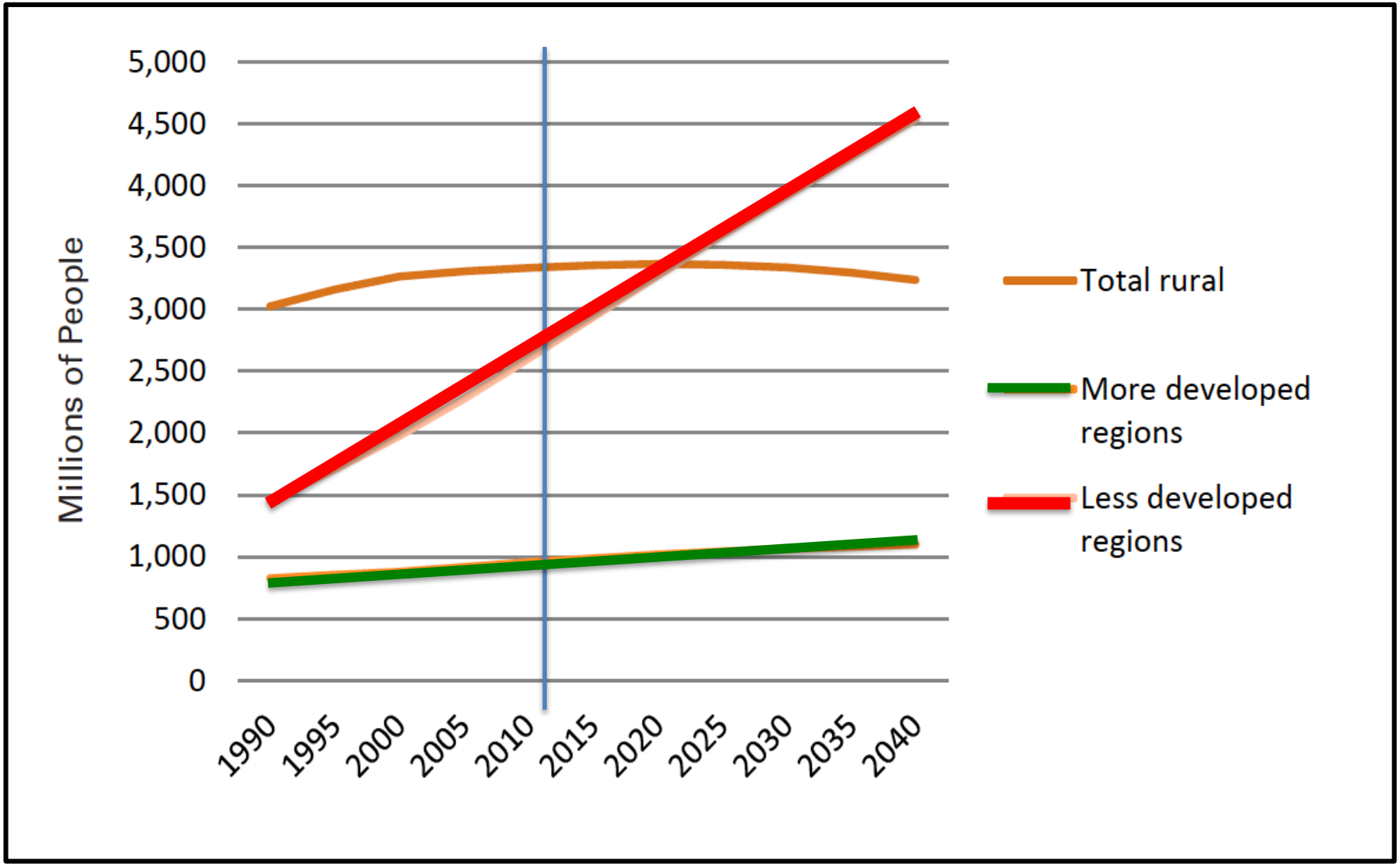
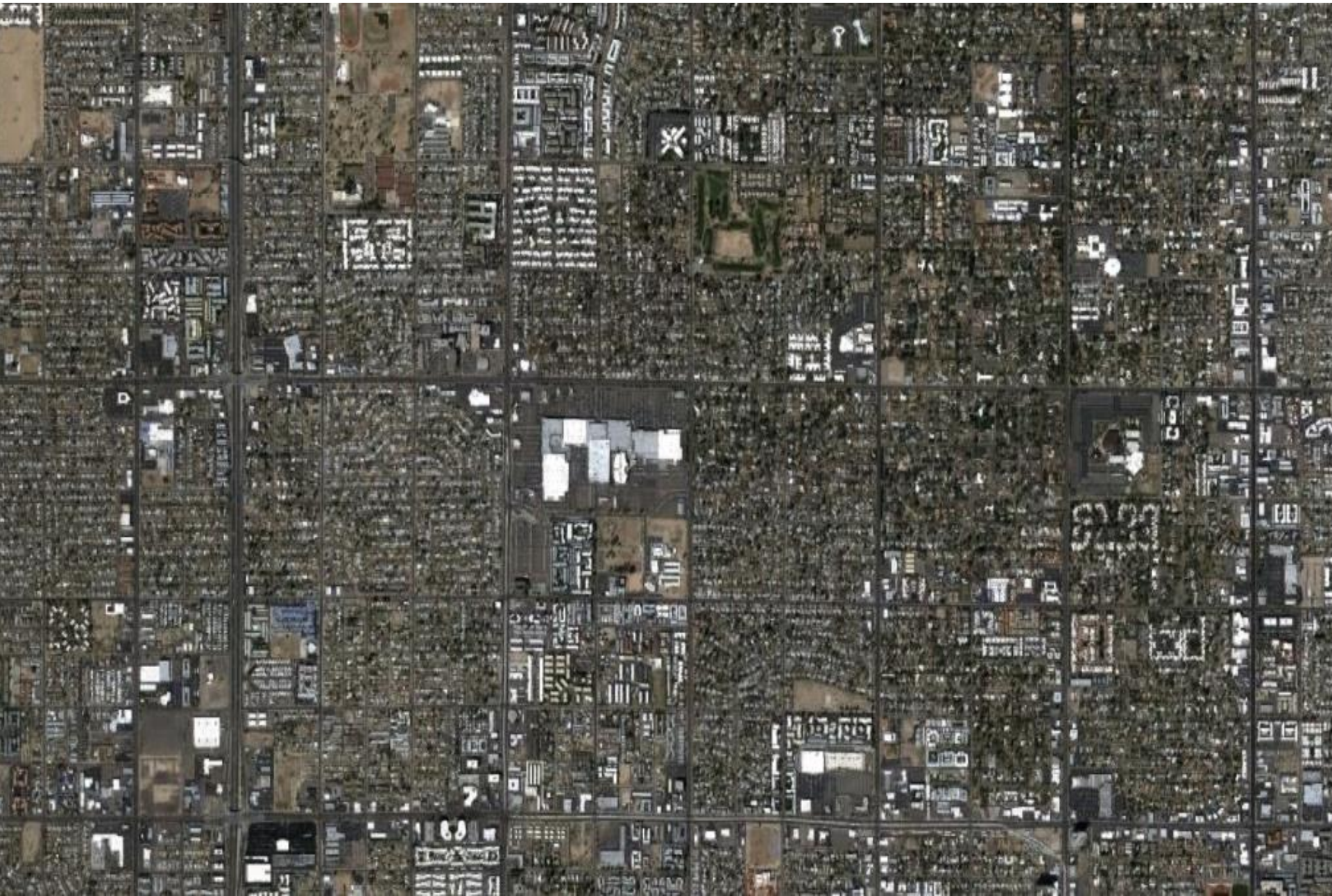
peter calthorpe
urbanism
in the age of
climate change

Urban Rich , Urban Poor, Rural



USA – Low Density Sprawl



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Tamiami Trail
Flagler St

Urban Infill - Oakland Uptown

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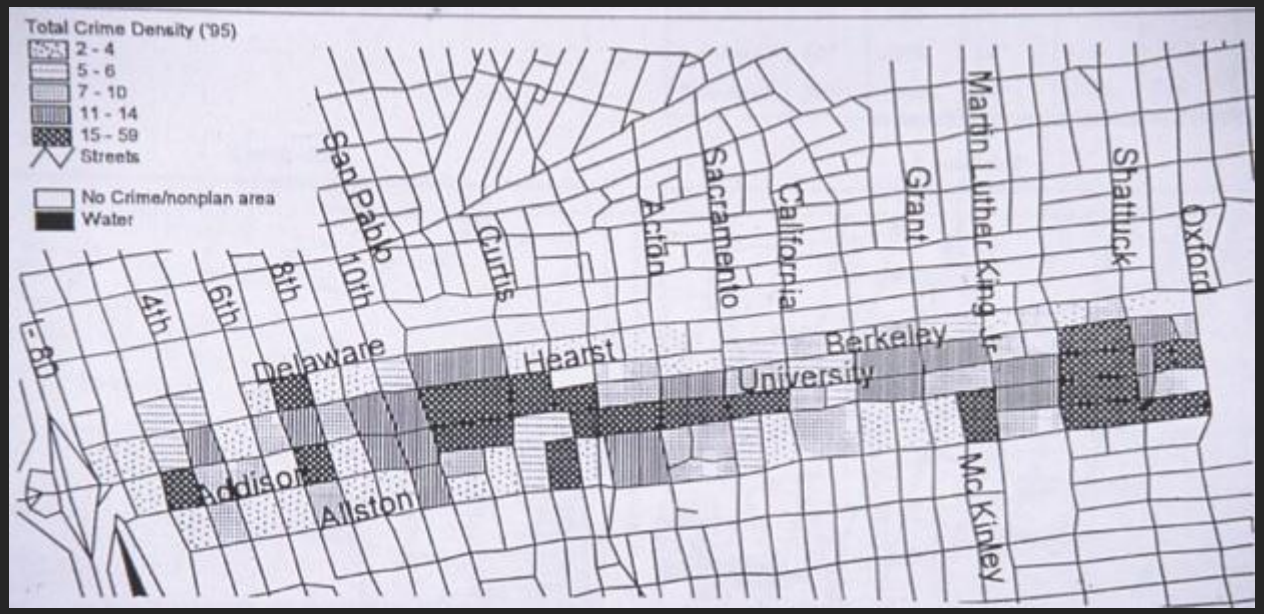
URBAN DESIGNERS. PLANNERS. ARCHITECTS

SHANGHAI
Albright Parking
$2.00 $5.00
15 73
72 72L

500 WILLIAM

U-HAUL
Our Low Decks
Make Your Move
EASIER!
500 WILLIA

University Avenue



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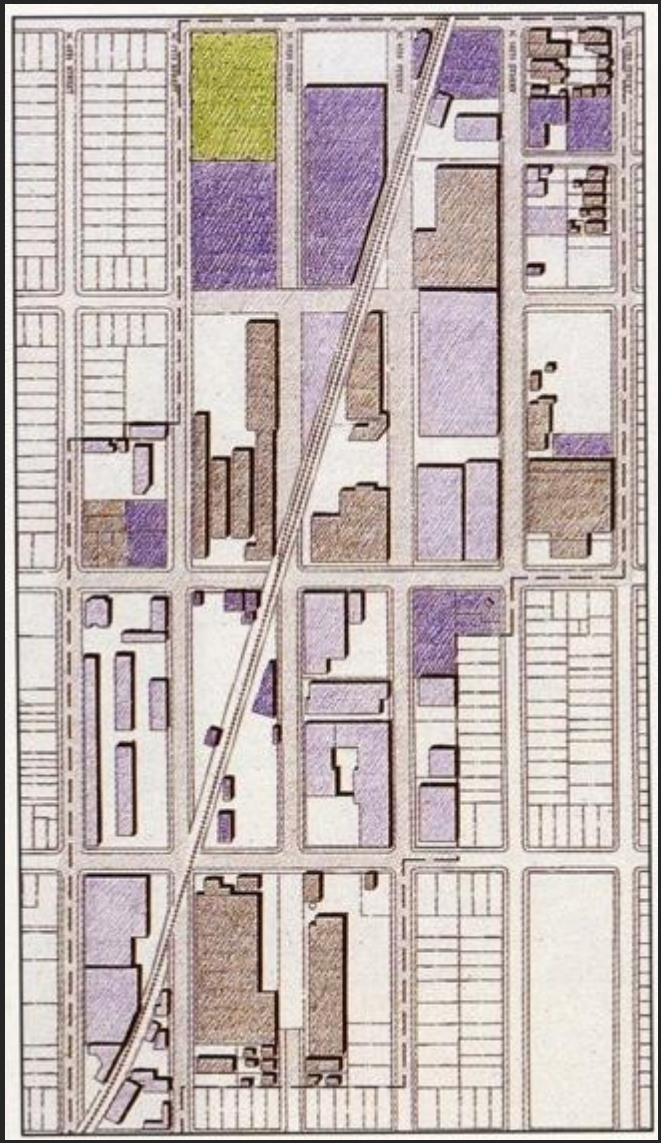
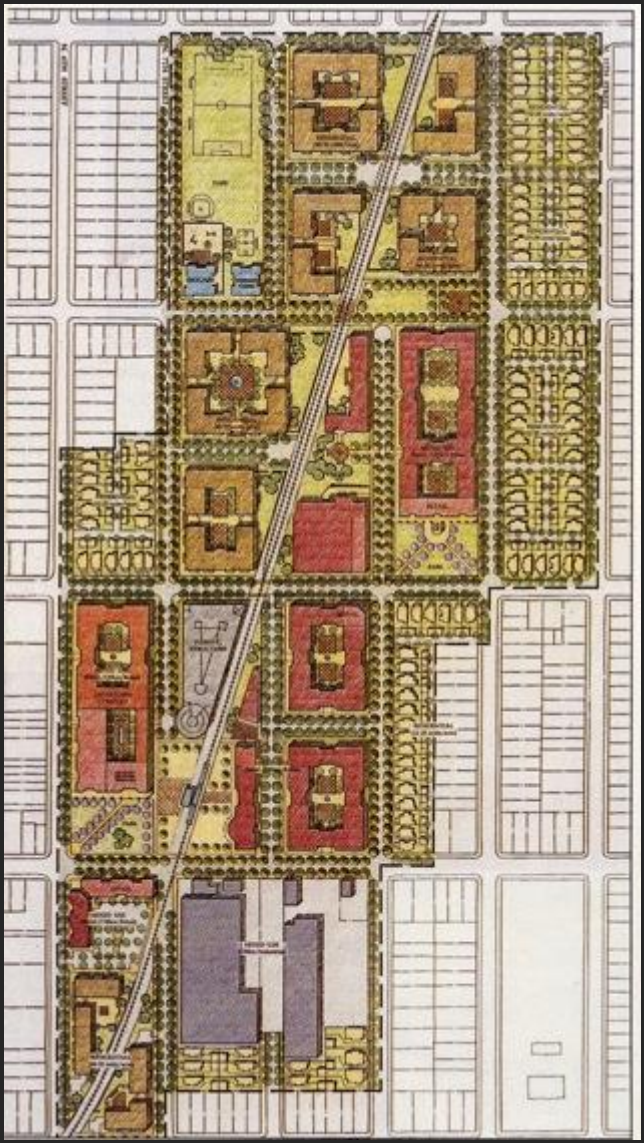
TUNELP
MASTERS
TUNE-UP
LUBE

1370

Jackson Taylor Neighborhood

San Jose, CA





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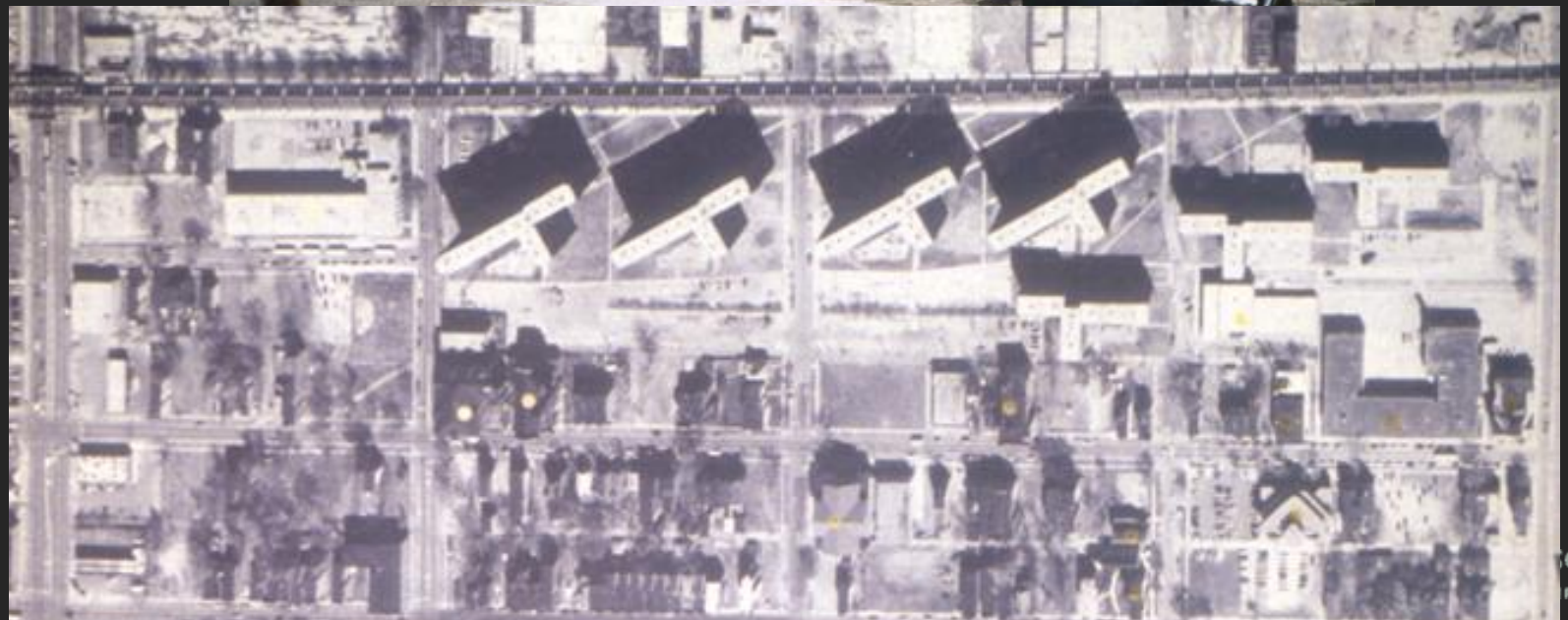
Seventh

RESTAURANT

Henry Horner Neighborhood



SOCIATES
RS. ARCHITECTS

SOCIATES
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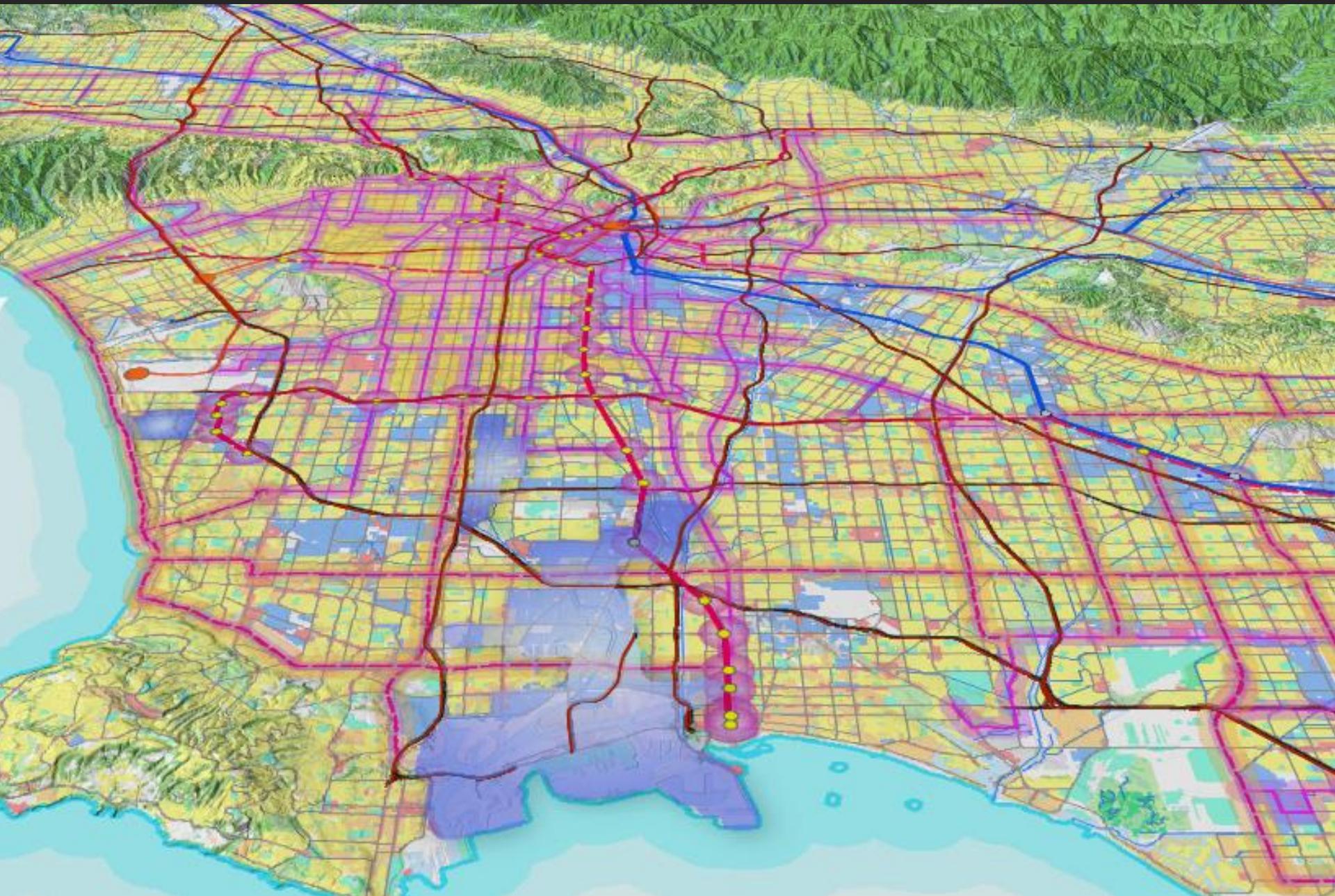
Toronto: Places to Growth Plan

Langstaff

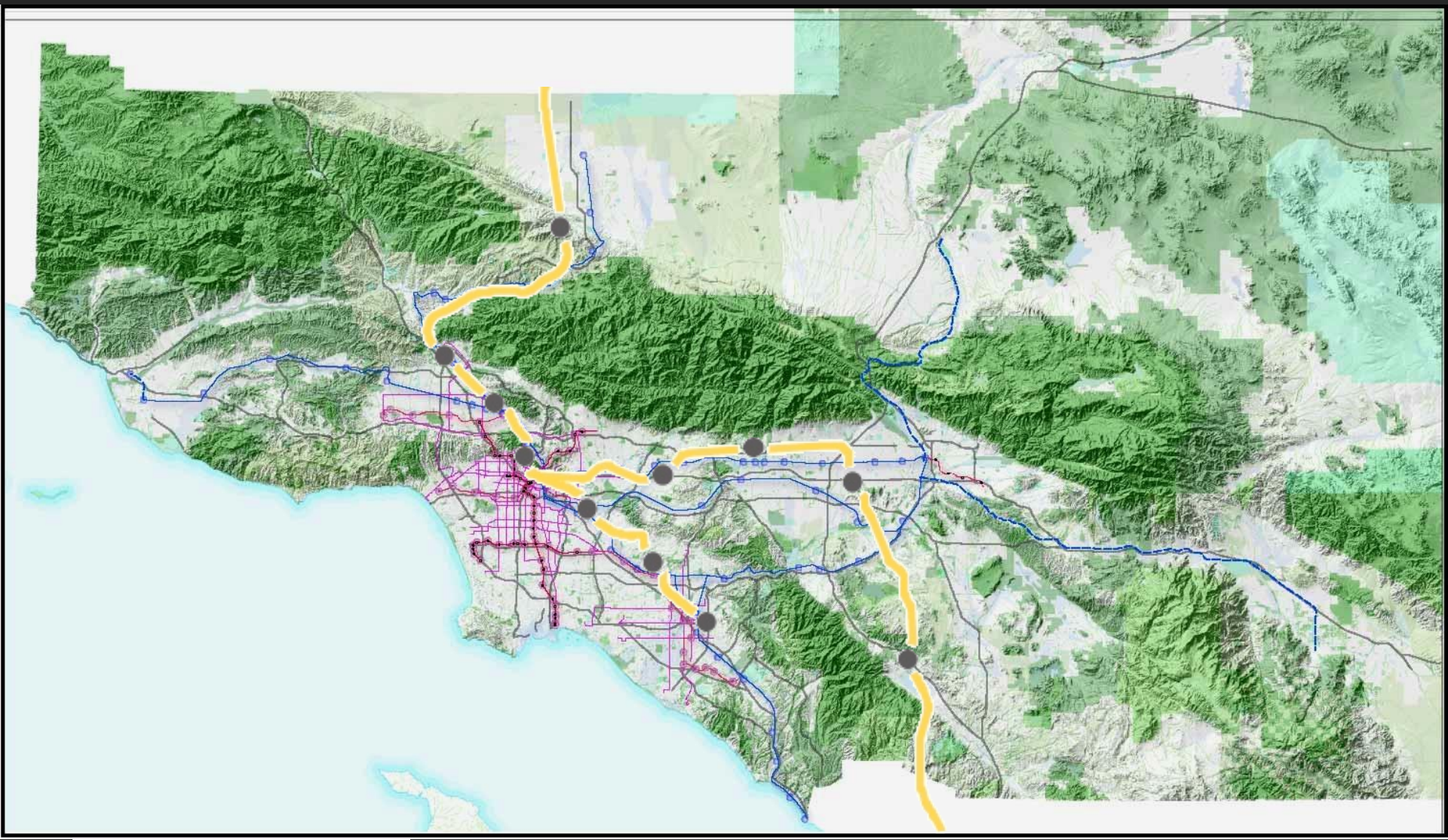
FAMILY DOCTORS
MEDICAL CENTRE

Los Angeles Regional Plan



Mobility

Transit Systems



Growth that Supports Transit

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URBAN DESIGNERS. PLANNERS. ARCHITECTS

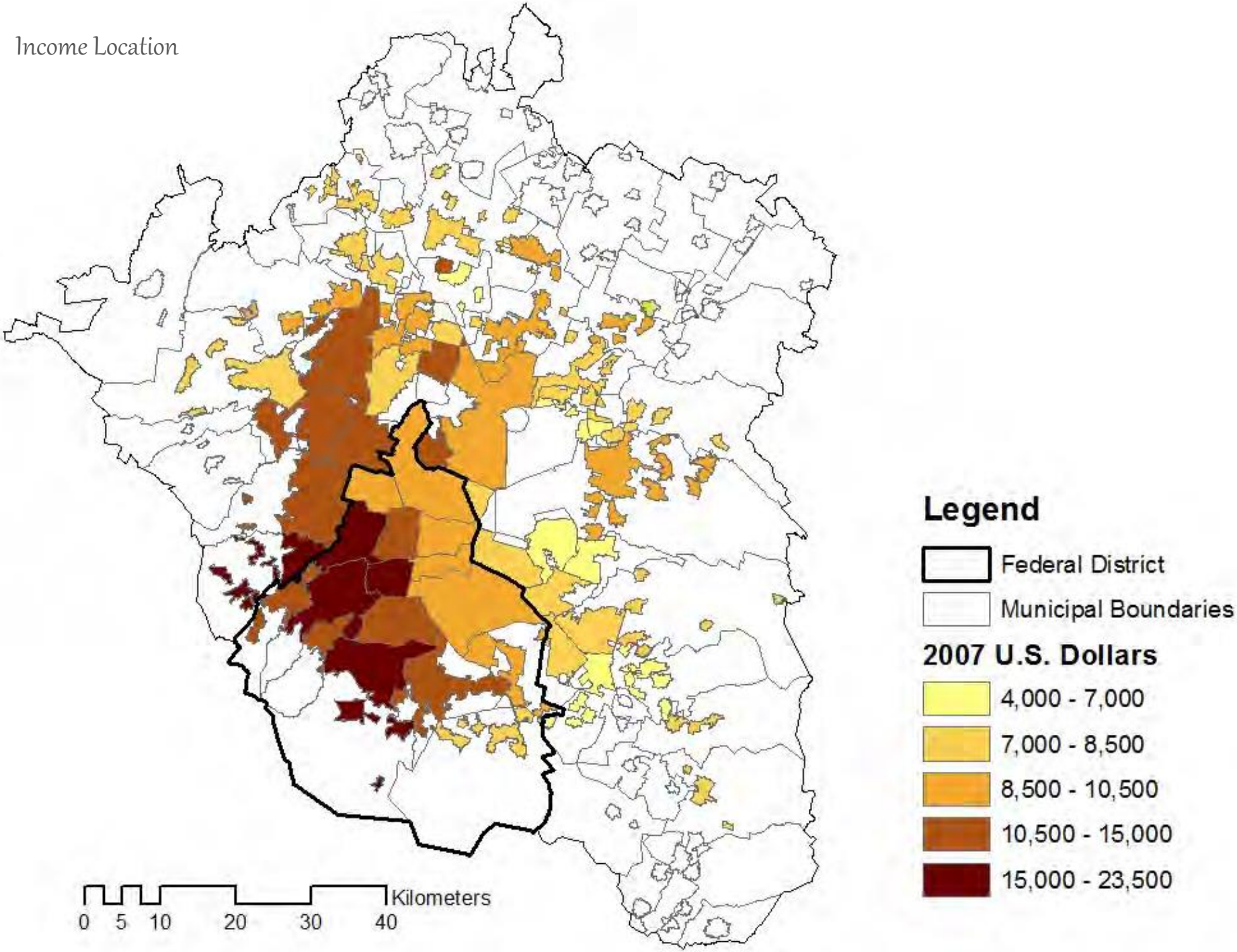
Mexico – Low Income Sprawl

40
MAXIMA

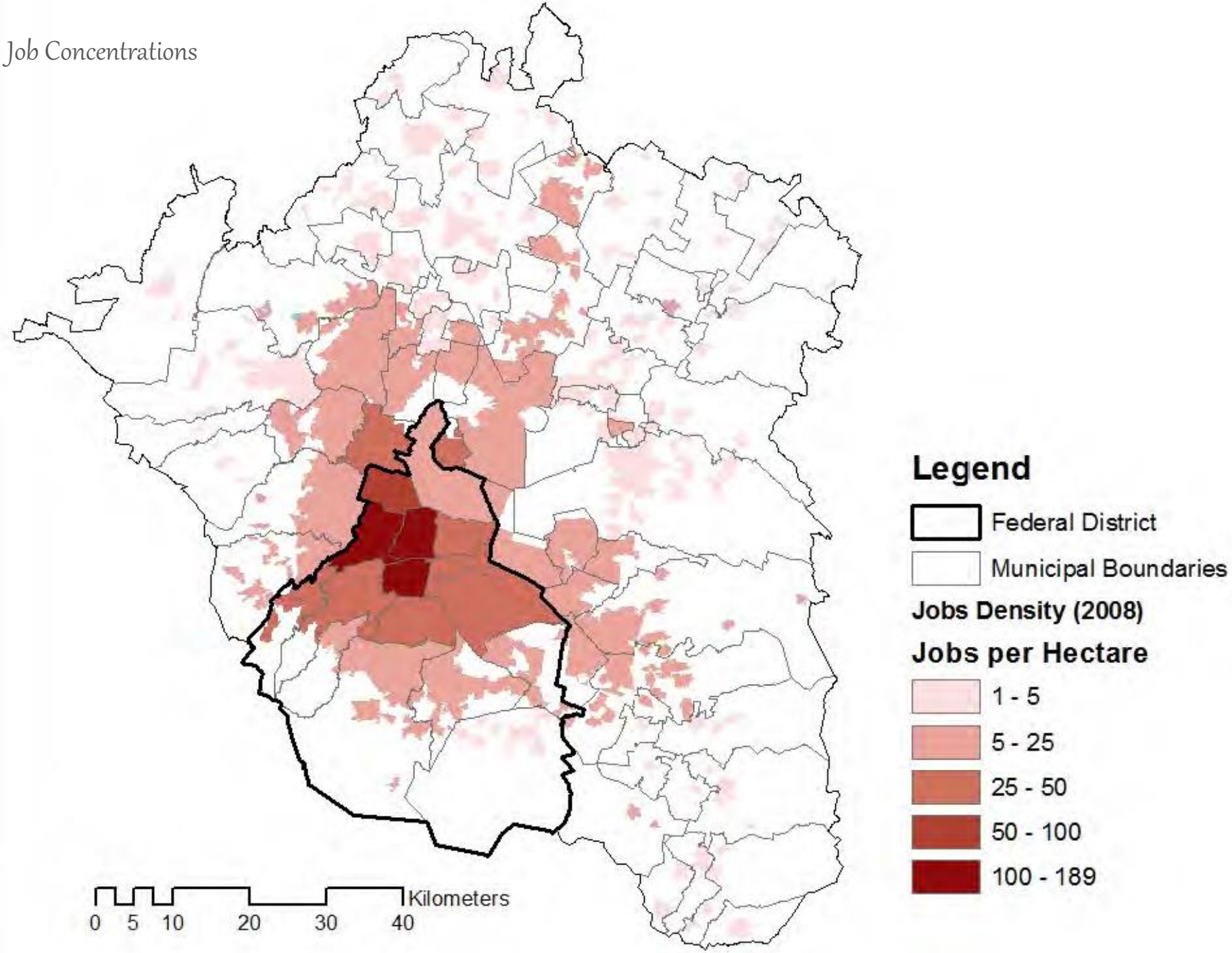
CIBER-CAFE
PC GAMES
Recargas
ROTOPLAS

TAXI
TIM

Income Location

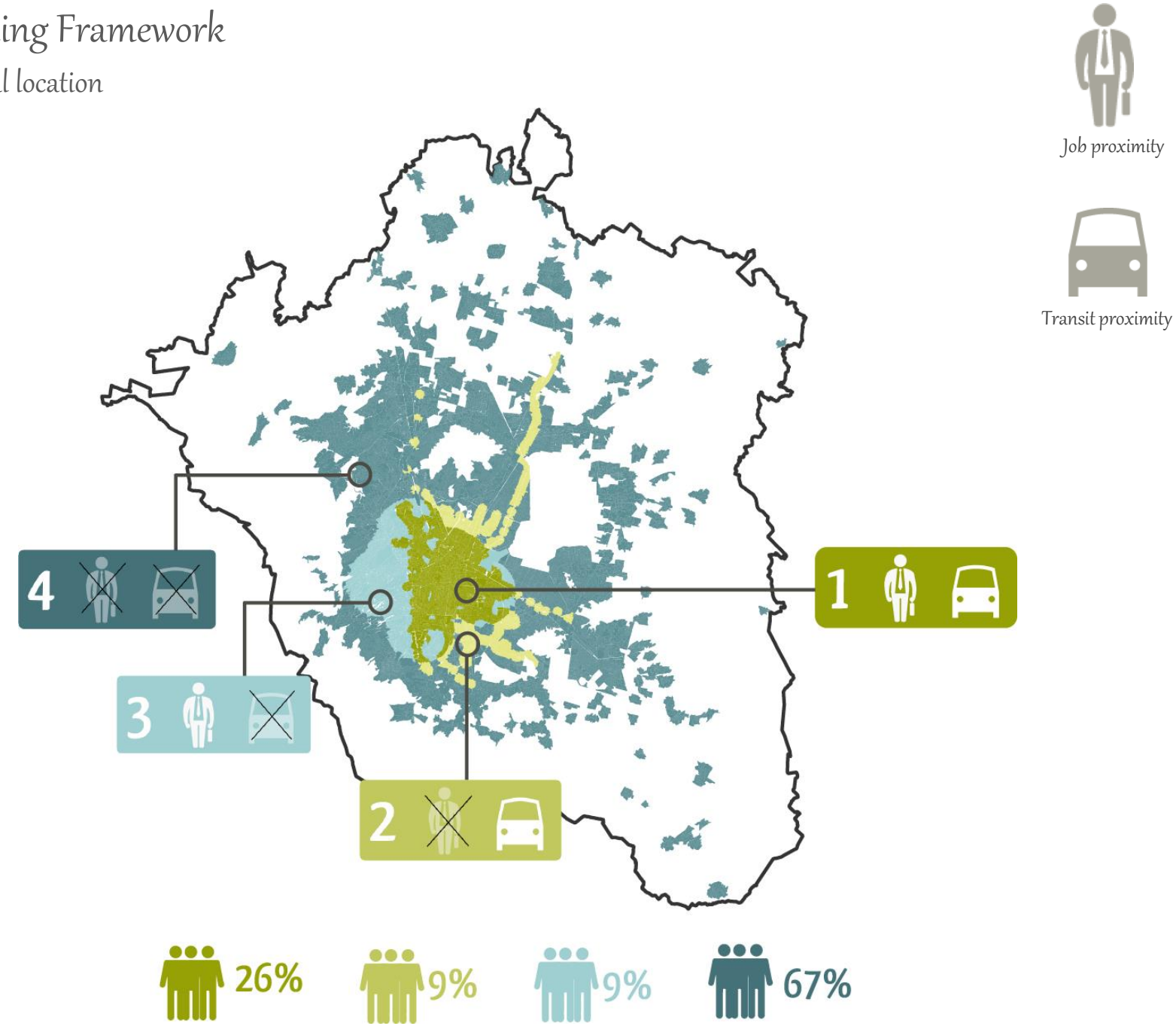


Job Concentrations



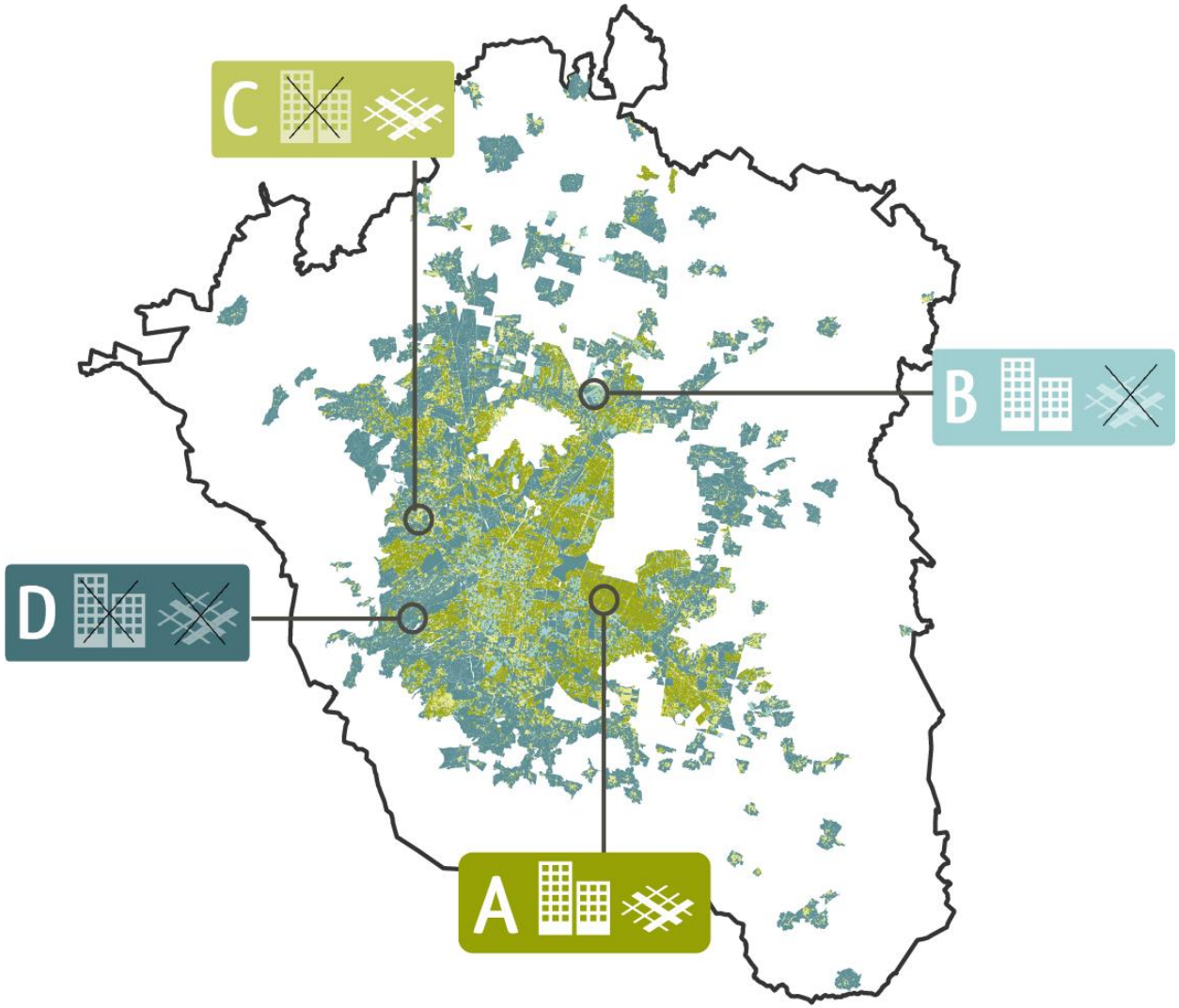
Modeling Framework

Regional location



Modeling Framework

Urban configuration



Place type definition

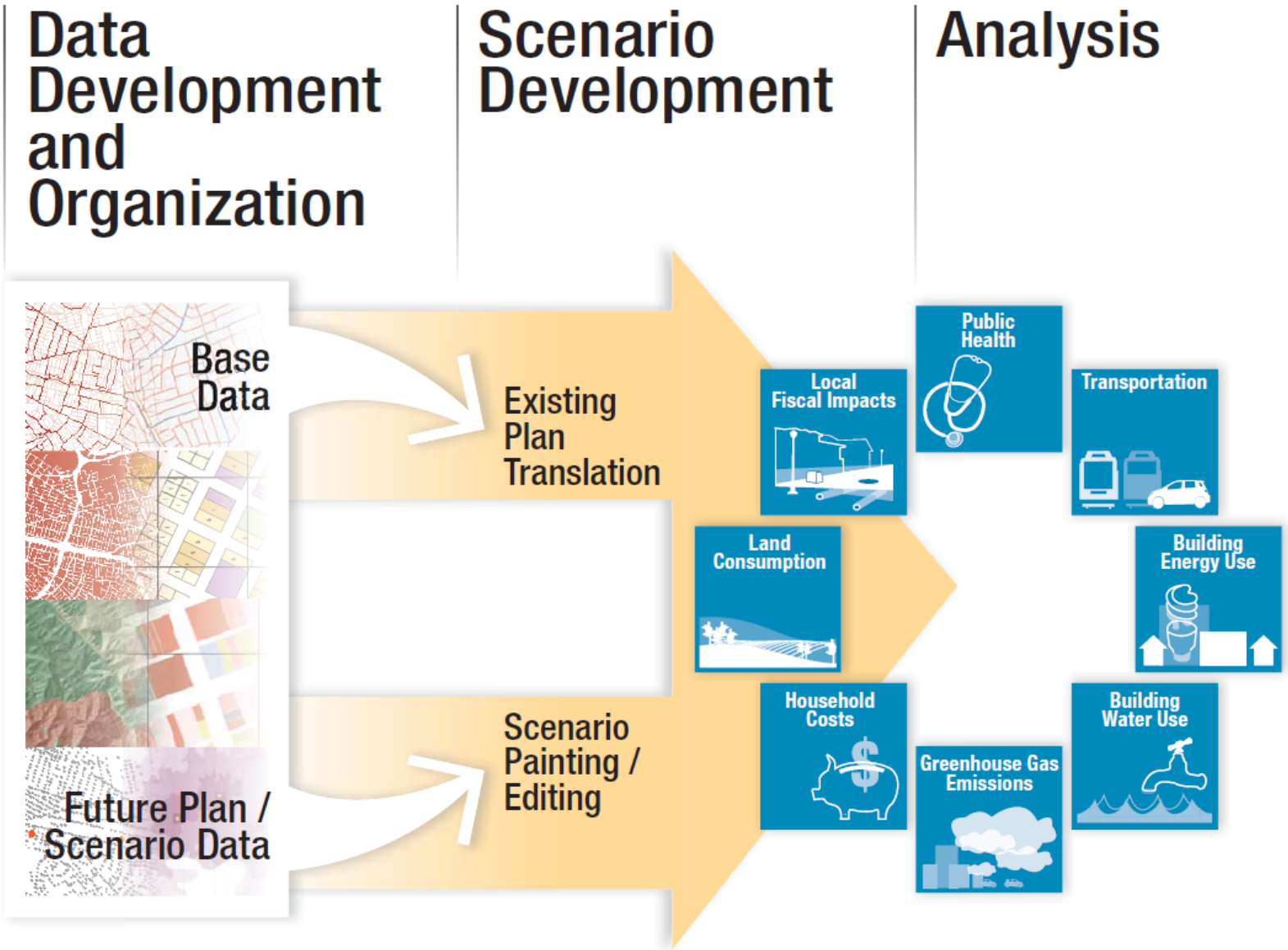
16 Possible combinations

URBAN CONFIGURATION

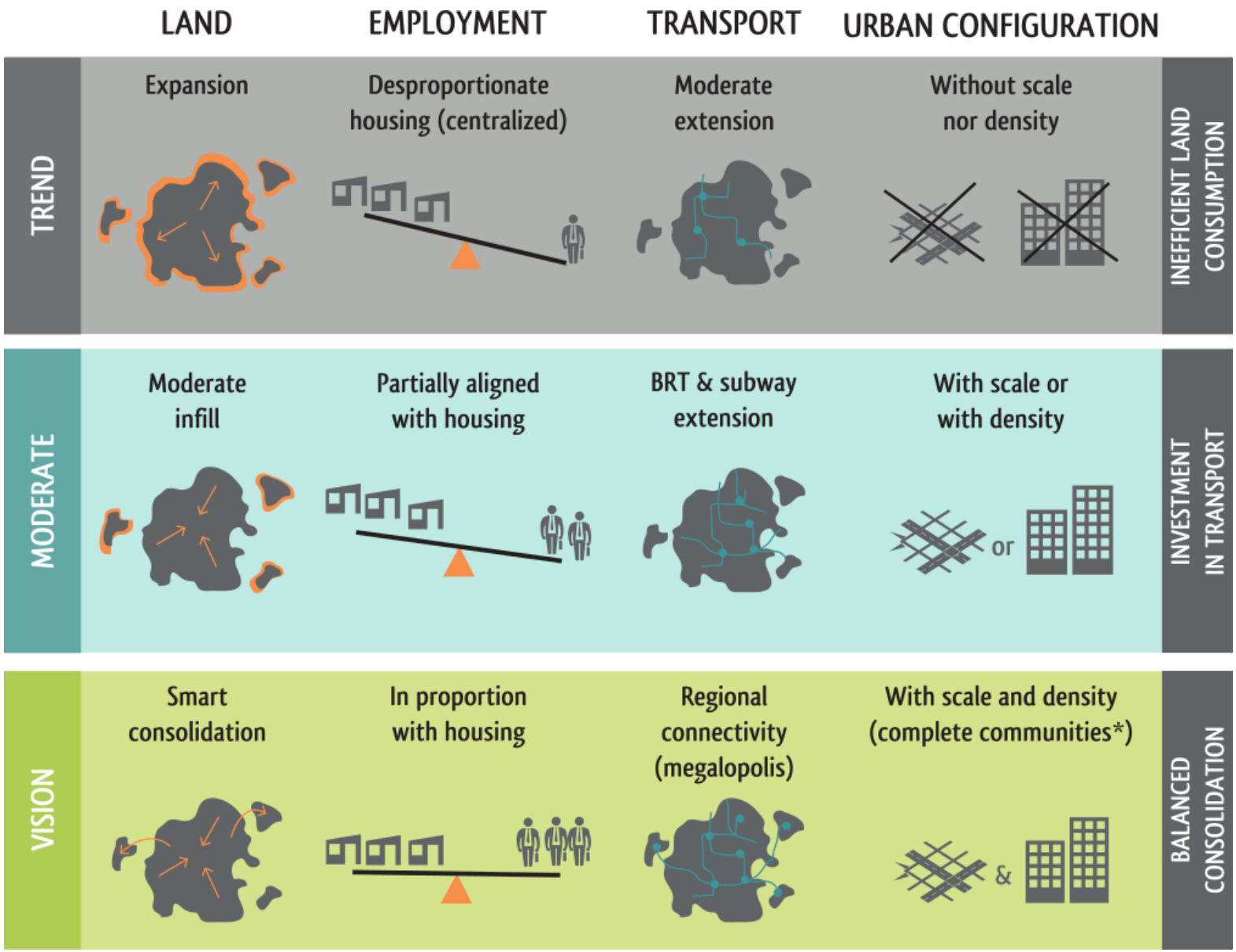
REGIONAL LOCATION	A	B	C	D
1	10% 1A	1% 1B	4% 1C	1% 1D
2	6% 2A	1% 2B	1% 2C	1% 2D
3	6% 3A	1% 3B	1% 3C	1% 3D
4	37% 4A	8% 4B	7% 4C	15% 4D

X 3 socioeconomic strata= 48 typologies

UrbanFootprint Scenario Ecosystem



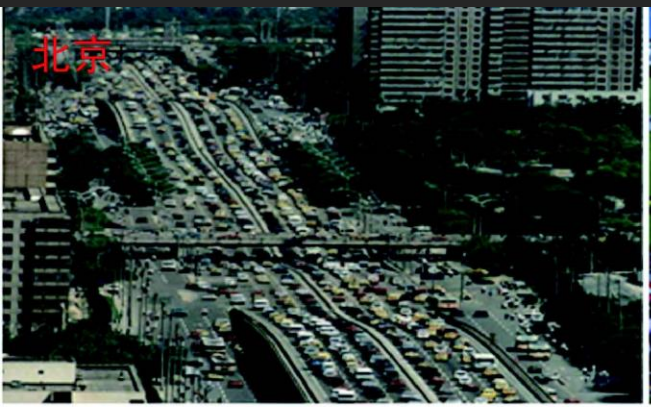
Scenario definition



Metrics analysis

	LAND CONSUMPTION	INFRASTRUCTURE COSTS	ENERGY CONSUMPTION	WATER CONSUMPTION	TRAVELED KM (private)	TRAVEL TIME (public & private)	COSTS PER HOUSEHOLD (annualized)	GHG EMISSIONS (annualized)
TREND	640 km^2 (similar in size to Puebla)	$ 33,070 mill.	4,160 Quad. Btu	52,450 mill. m^3	42,000 mill. vehicle km traveled	13,200 person hours traveled	$ 7,022 annual/household	26 mill. Ton CO_2
MODERATE	255 km^2 (similar in size to Toluca)	$ 11,338 mill. -$ 21,700 mill. 14 lines subway (line 12)	4,140 Quad. Btu -$ 867 mill.	52,200 mill. m^3 -$ 116 mill.*	8% less vehicle km traveled -500,000 vehicles (2050)	15% less person hours traveled -½ hour PHT per day	$ 6,601 annual/household -$ 420 annual/household	24 mill. Ton CO_2 -6% emissions
VISION	140 km^2 (similar in size to Queretaro)	$ 6,983 mill. -$ 26,094 mill. 17 lines subway (line 12)	4,120 Quad. Btu -$ 1,799 mill.	45,900 mill. m^3 -$ 123 mill.*	13% less vehicle km traveled -780,000 vehicles (2050)	23% less person hours traveled -1 hour PHT per day	$ 6,342 annual/household -$ 680 annual/household	23 mill. Ton CO_2 -9% emissions

China – High Density Sprawl



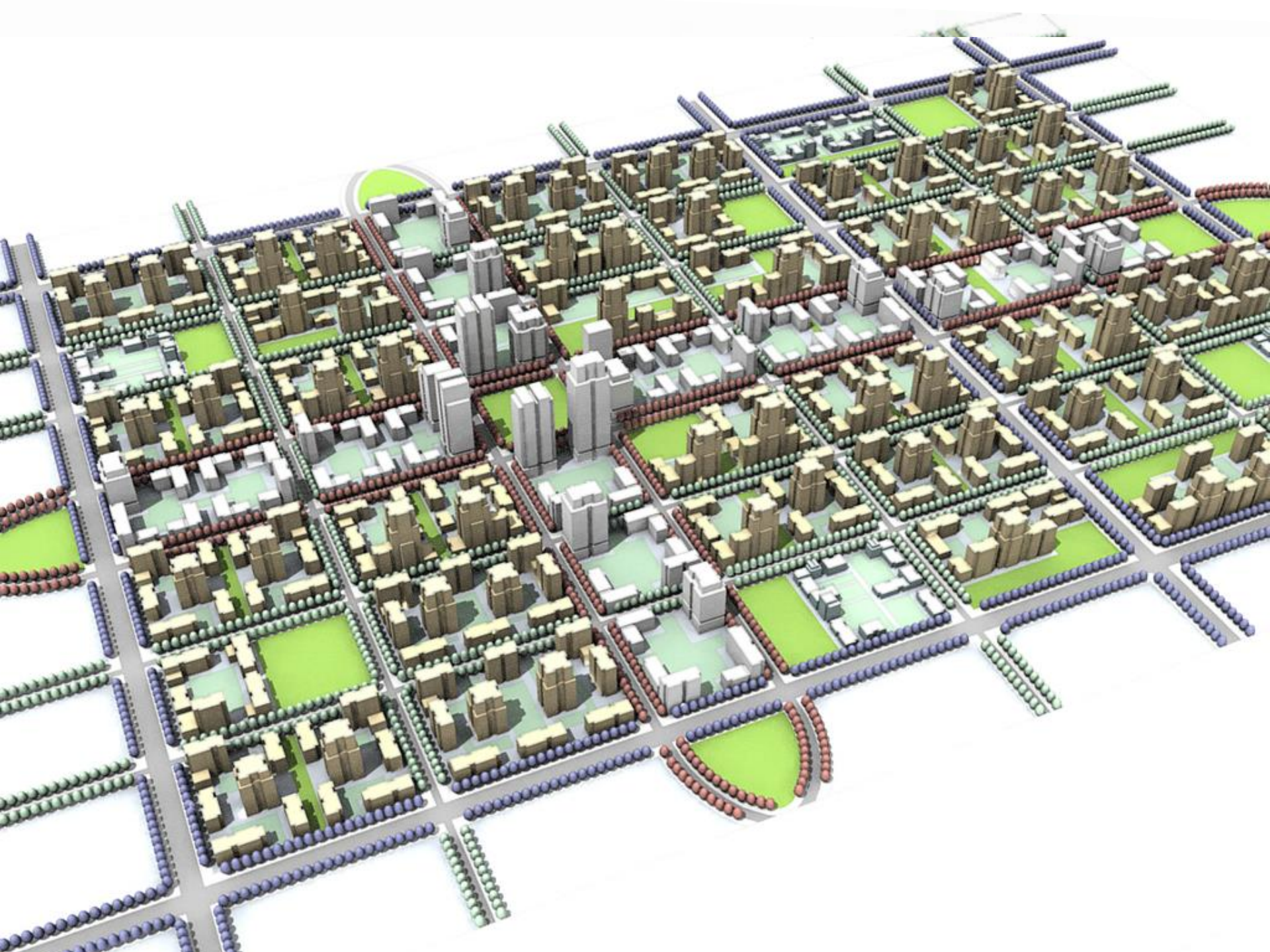
Congestion in big cities (Beijing, Shenzhen, Chongqing, Shanghai)
大城市的拥堵问题严重

乌鲁木齐在线
wlmqwb.com

珍惜生命,行人请走
人行横道或立交桥

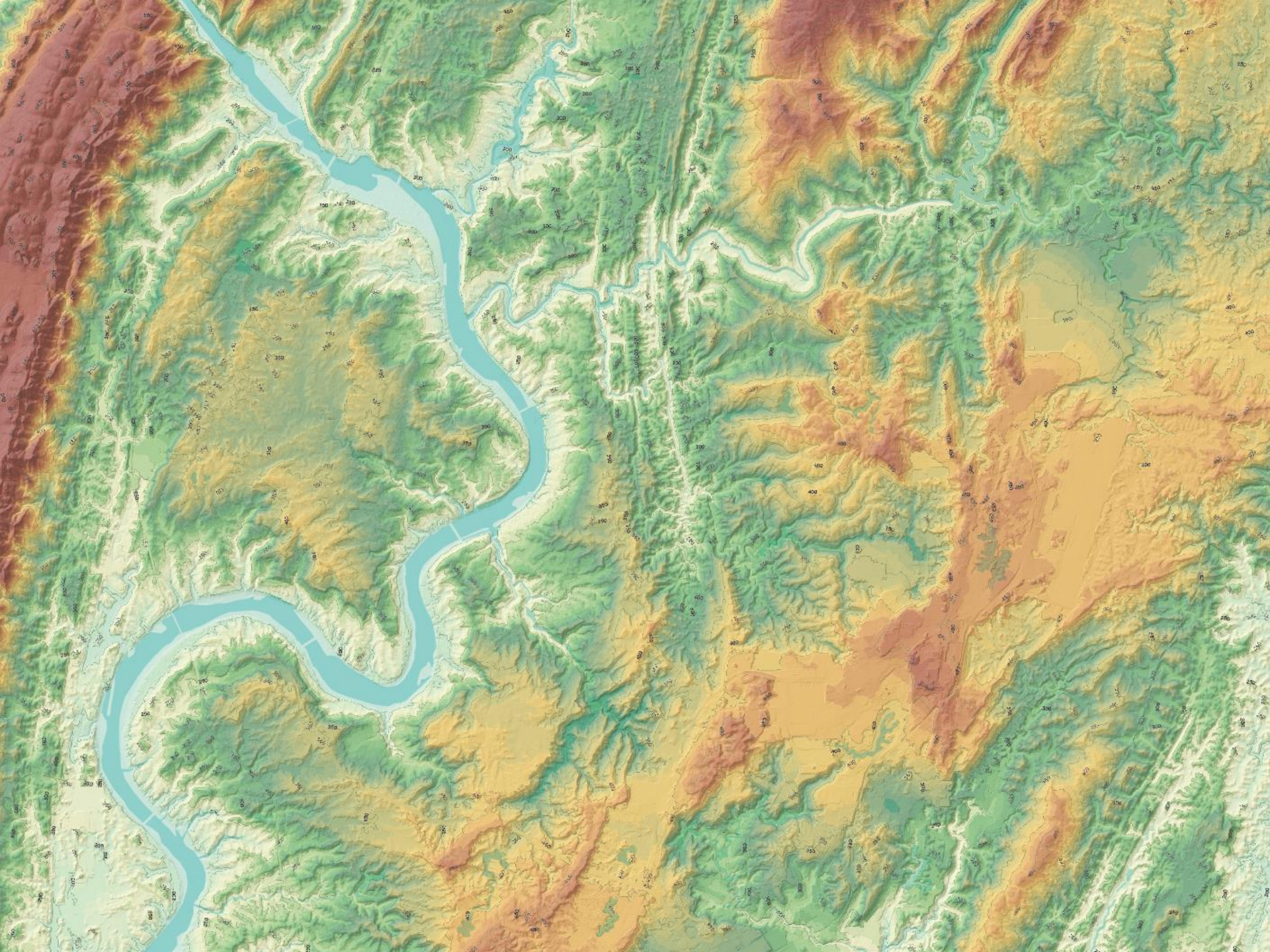
China World

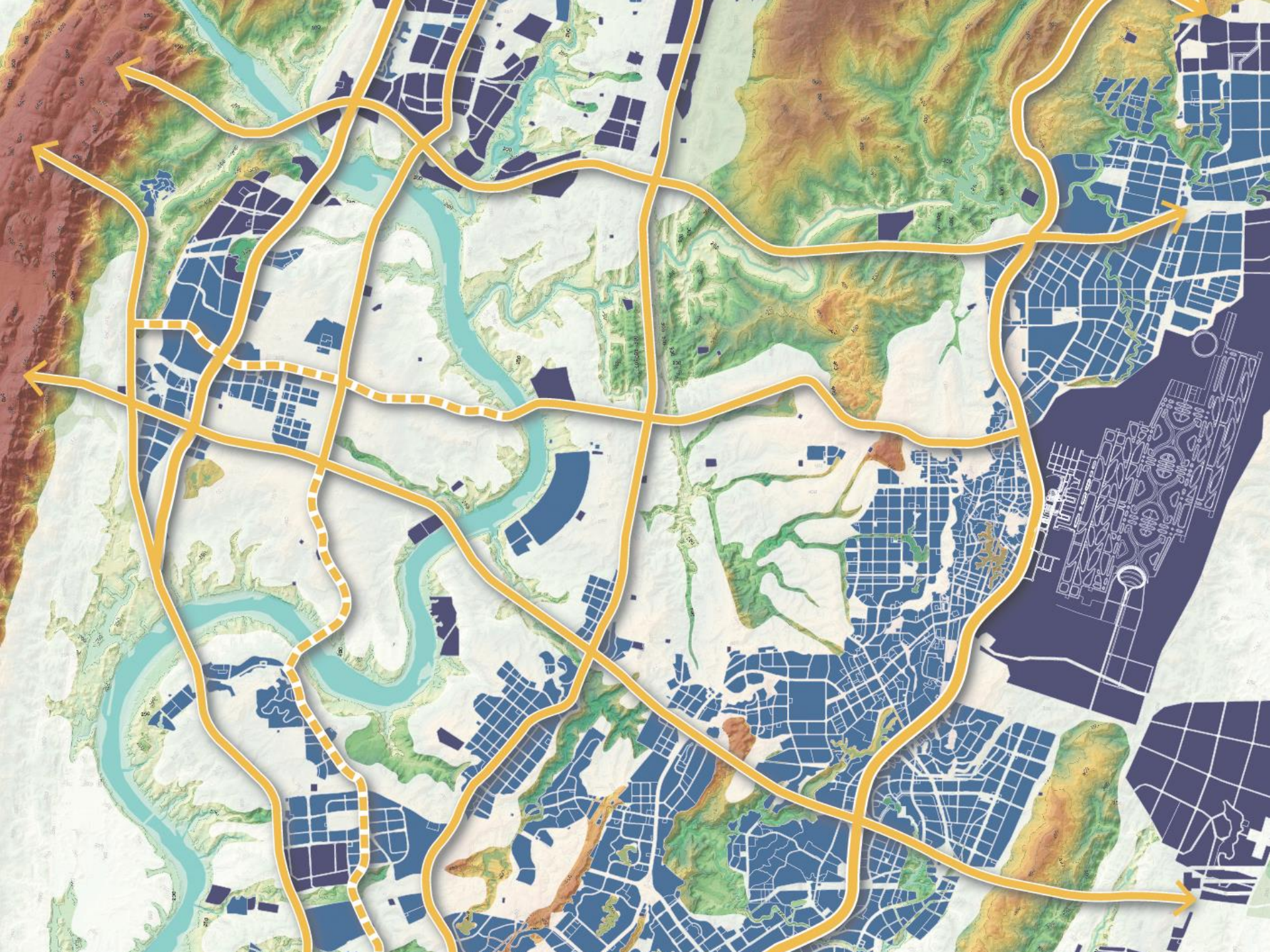
China – Superblocks

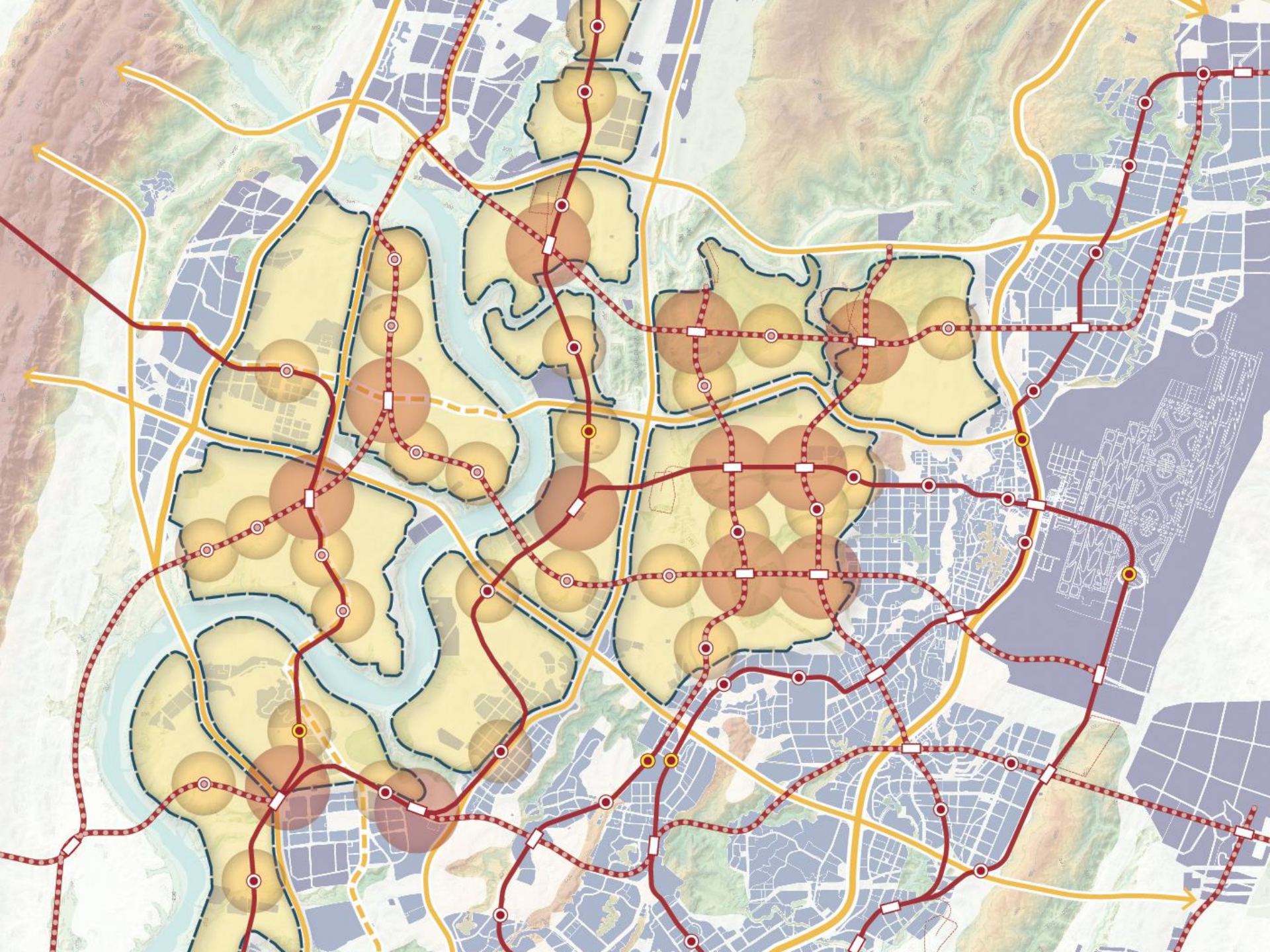


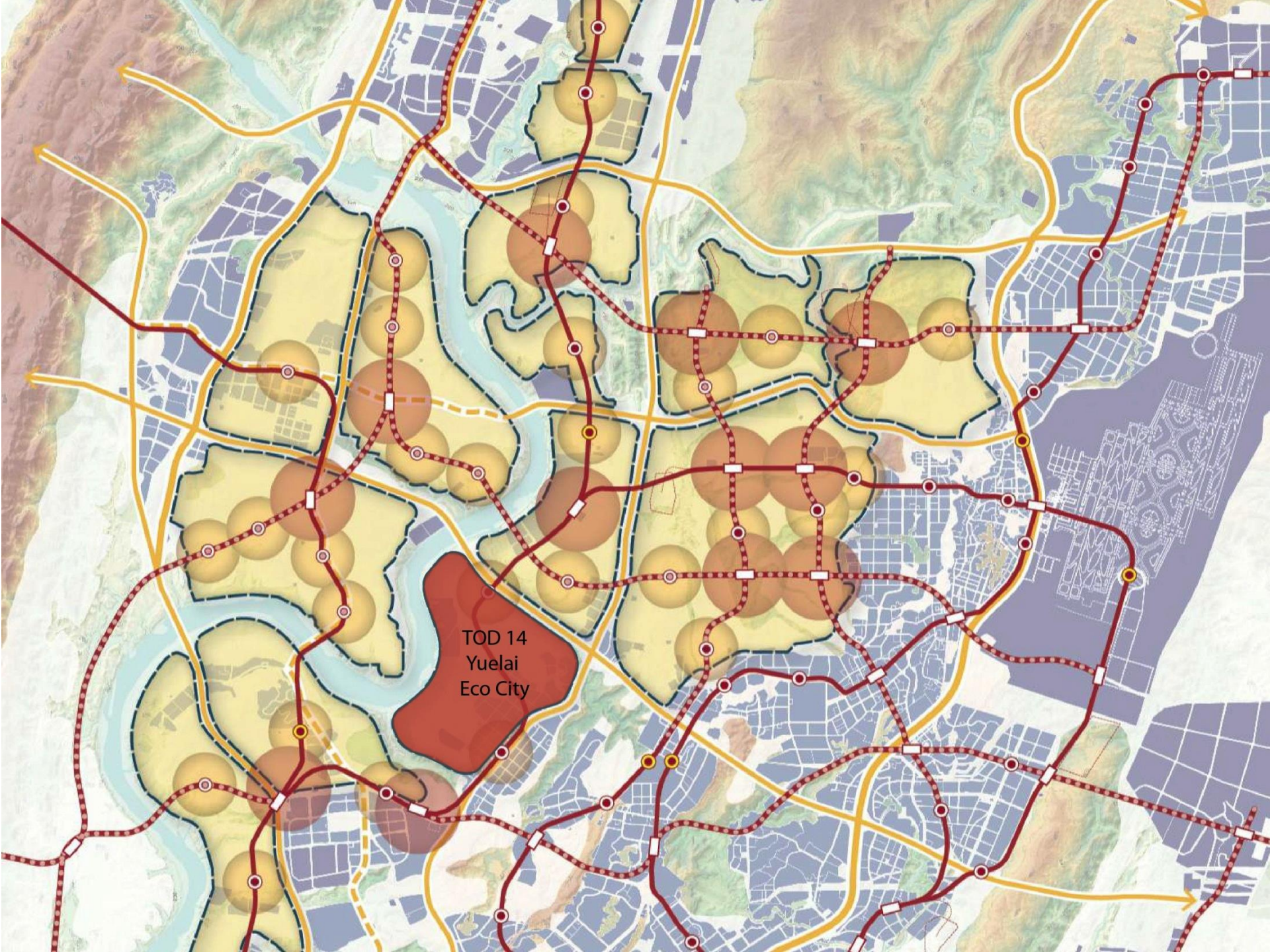
CHONGQING

重庆建成区





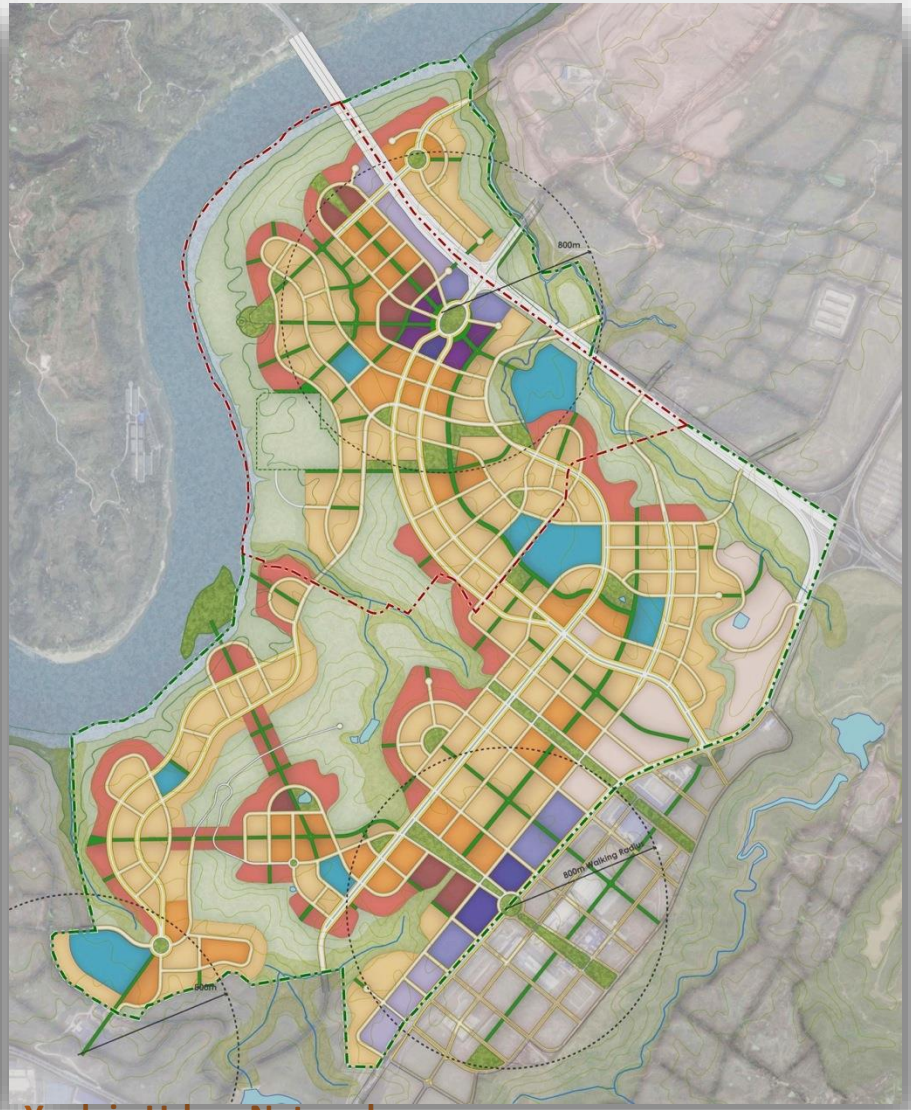



TOD 14
Yuelai
Eco City

Current and Proposed Plan Comparison

现有规划与新版规划对比

Yuelai : Superblock
悦来生态城：超大街区



Yuelai : Urban Network
悦来生态城：城市格网

Open Space
开放空间

Develop Neighborhoods that Promote Walking
建设步行优先的邻里社区

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

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

1

Prioritize Bicycle Networks

优先发展自行车网络

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 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

2

Create Dense Networks of Streets and Paths

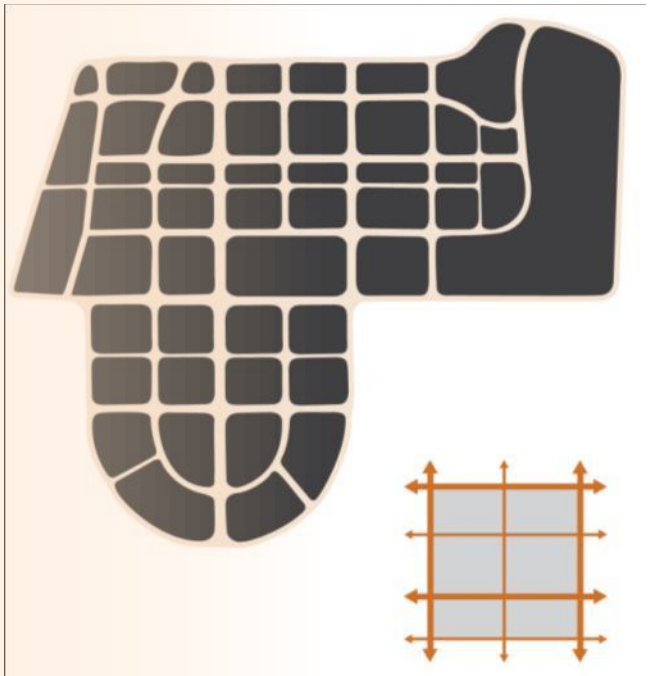
创建密集的街道网络

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

Disperse high traffic volumes over narrow, parallel routes

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



3

Support High Quality Transit
支持高质量的　公共交通服务

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

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

4

Zone for Mixed Use Neighborhoods

建设多功能混合的 邻里社区

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

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

5

Match Density to Transit Capacity

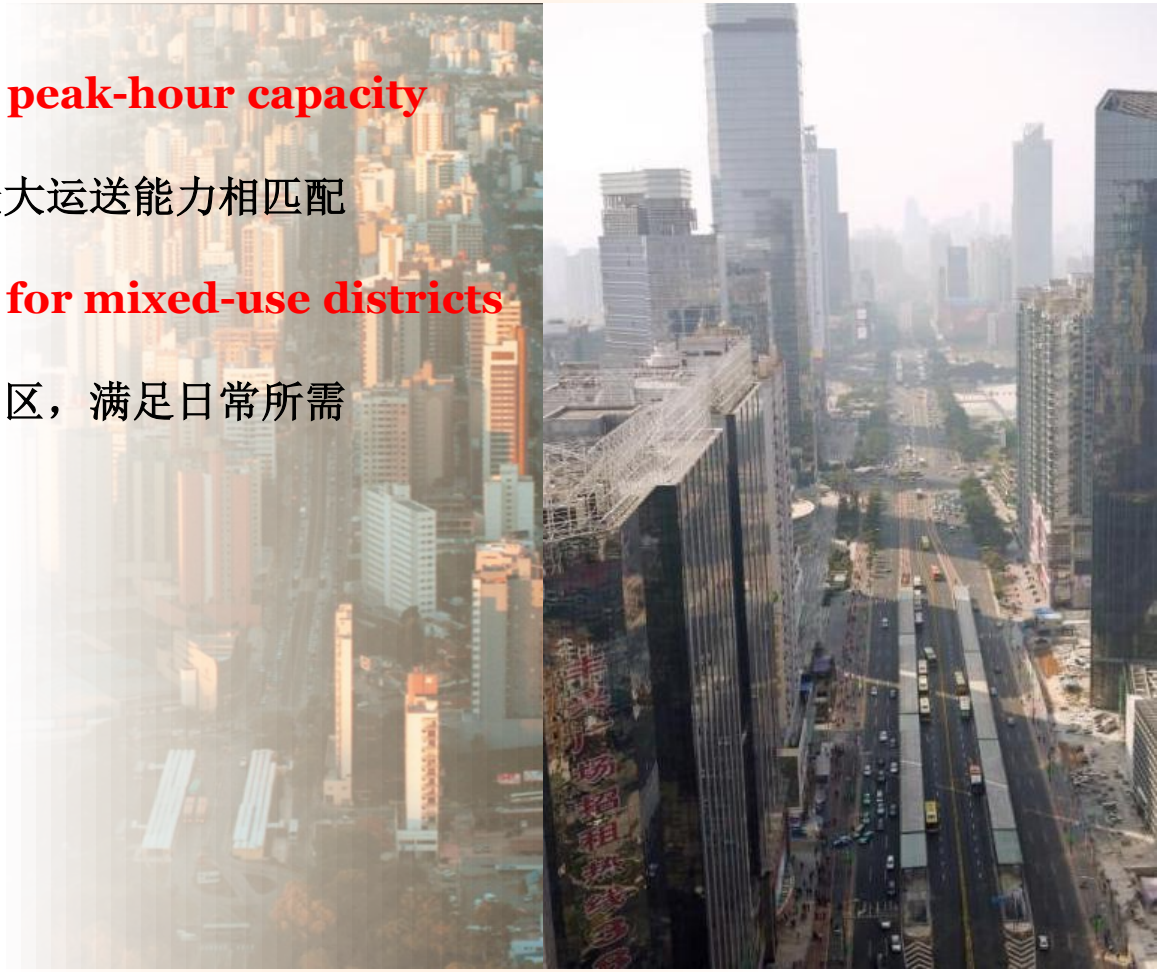
将土地开发强度和 公共交通承载力相匹配

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

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



6

Create Compact Regions with Short Commutes

确保紧凑型发展，提倡短程通勤

Focus development in areas adjacent to 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

Create a jobs/housing balance within a short commute distance

在较短通勤距离内实现职住平衡

7

Create Energy Efficient Buildings & Community Systems to Reduce Carbon Emissions

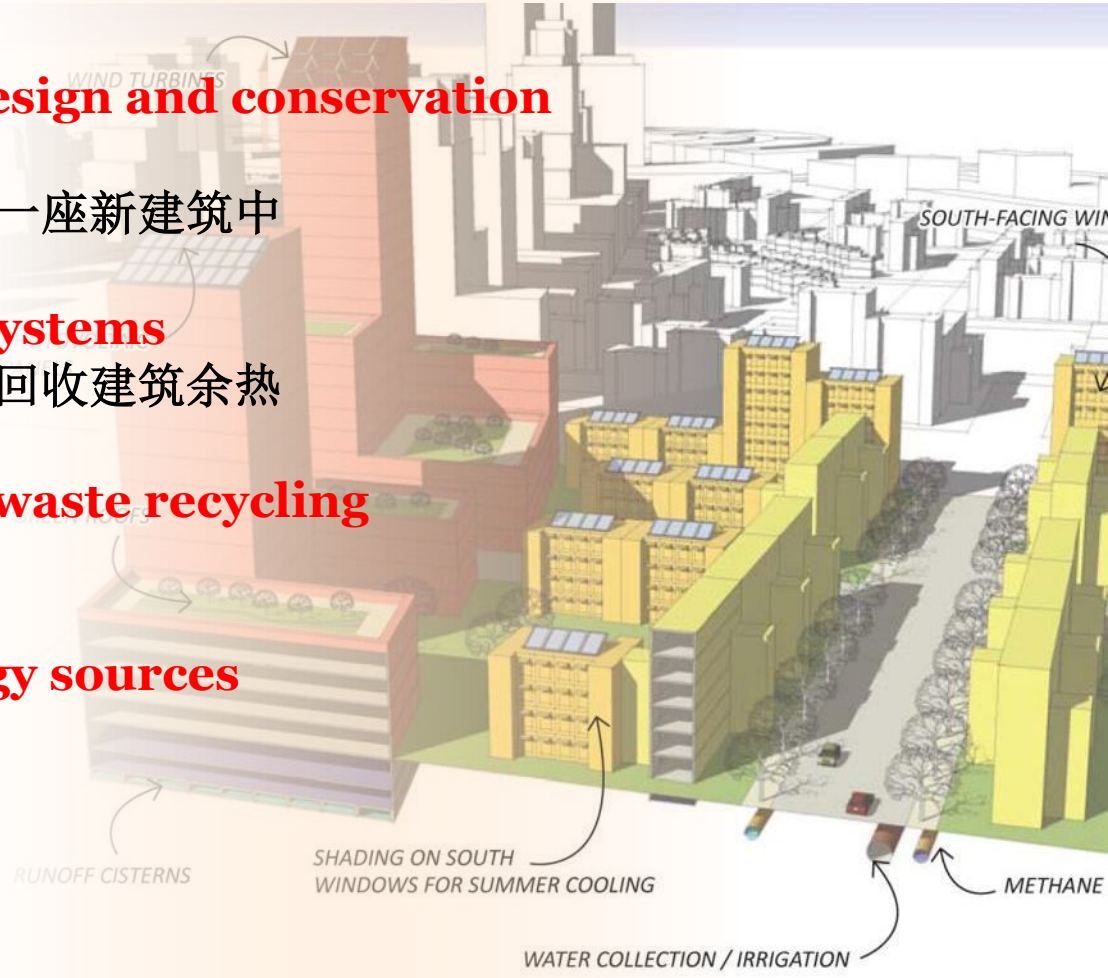
建设节能建筑和社区系统降低碳排放

Employ climate-responsive design and conservation features in all new buildings
将环保设计以及节能技术应用到每一座新建筑中

Create district cogeneration systems
建造地区性热点联产系统来发电并回收建筑余热

Provide ecological water and waste recycling
建造社区尺度废水垃圾循环系统

Employ local renewable energy sources
尽可能使用可再生能源



8

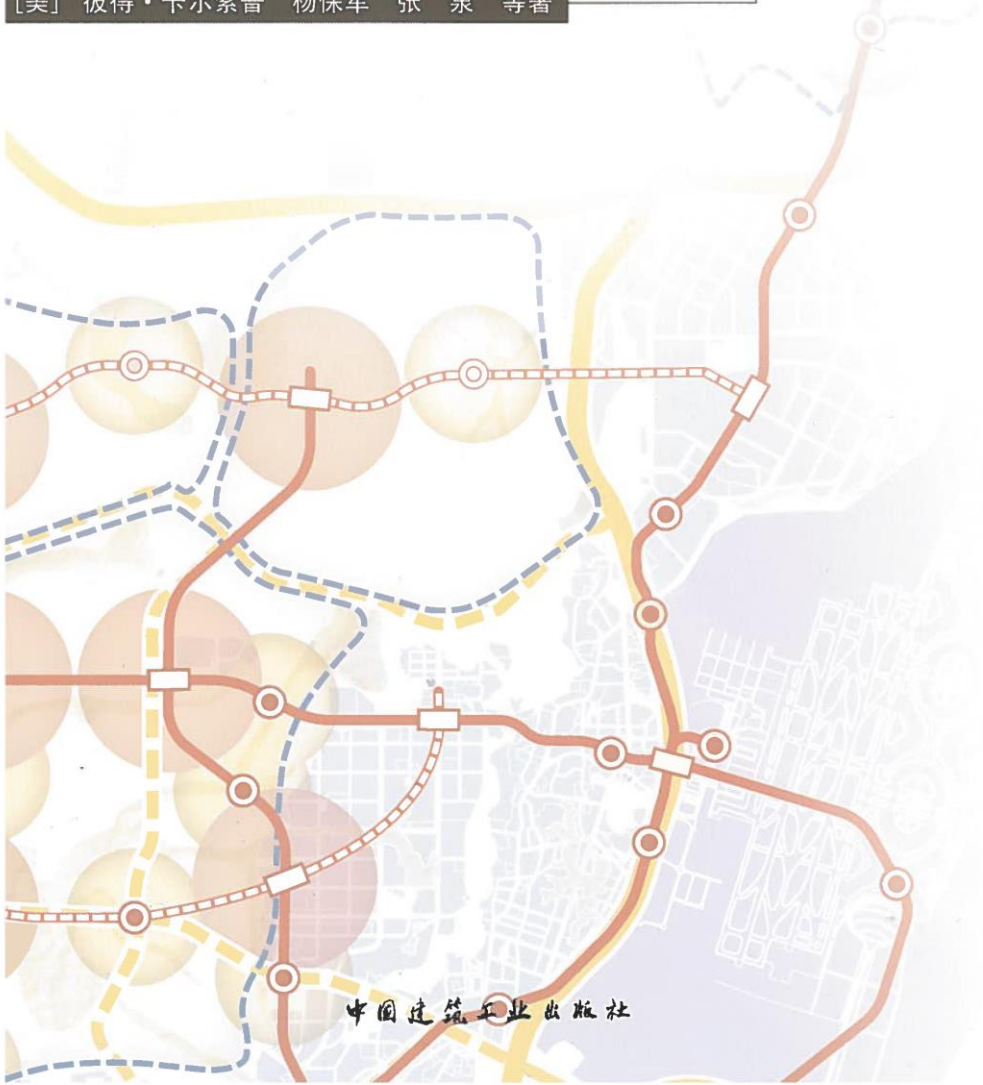
TOD在中国

Transit Oriented Development in China

面向低碳城市的土地使用与交通规划设计指南

A Manual of Land-use and Transportation for Low Carbon Cities

[美] 彼得·卡尔索普 杨保军 张 泉 等著



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