



SUSTAINABLE
TRANSPORT
AWARD

TIANJIN

Reclaiming Space for Active Mobility



WORLD BANK GROUP



ITDP



Rethinking Mobility in Tianjin Central District

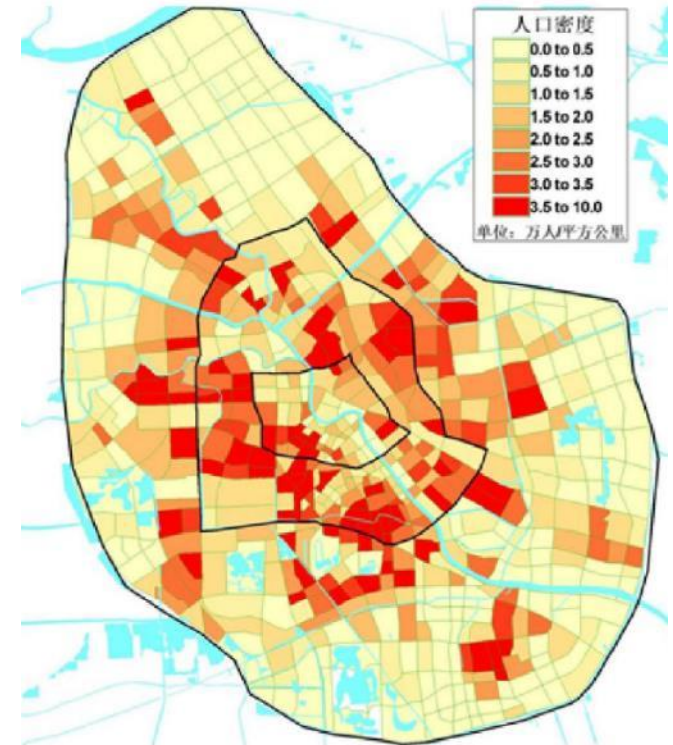
One of the four Chinese Municipalities, with over US\$200 billion in GDP

Central Tianjin (2013)

- 334 km²/ 5.1 m people/ 15,400 in people density/km²
- Experiencing growing congestion
- Annual growth in cars by 20% (157/1000 people)
- **non-motorized mode share high (66%) but declining**
- **4 metro lines (130 km) and only 0.8 m passengers**
- Low road density (4.6 km/km²)

- **(66%)**

A system under pressure



Need for rethinking urban transport approach

Urban Transport Improvement Project

Request: address congestion and resilience

Response: *“The **largest project** dedicated to improving streets for walking, biking and general public use and enjoyment – and integration with the city’s mass transit system – in the history of the World Bank”*

US\$145 m at closing. (US\$100m IBRD)

7 years. 2015 to 2022



Tianjin Green Transport Development Strategy

OBJECTIVE

By 2030, the downtown area of Tianjin will be an engaging, prosperous, lively, green, low-carbon and competitive city center, which will be equipped with a people-oriented, smart and efficient transportation system that meets citizens' demand on safe, comfort and convenient travel for better life.

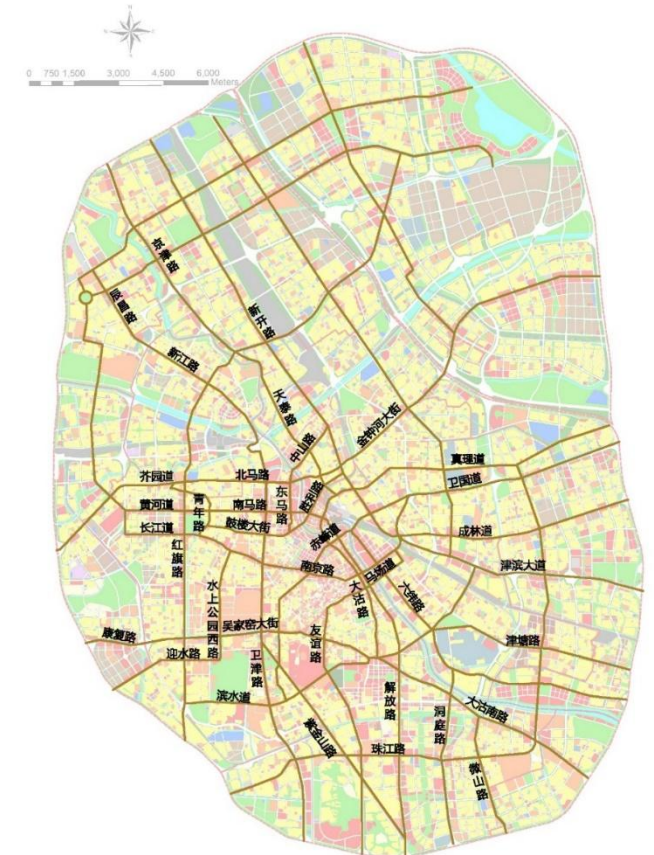


Tianjin Green Transport Development Strategy

Build a High Quality and People-oriented Pedestrian and Biking System

- ◆ Enhance the density of non- motorized network
- ◆ Increase the bike lanes with independent right of way
- ◆ Increase proportion of shading for bike lanes to no less than 90%
- ◆ Build bicycle express-lanes
- ◆ Introduce sharing bikes vigorously and in a large scale

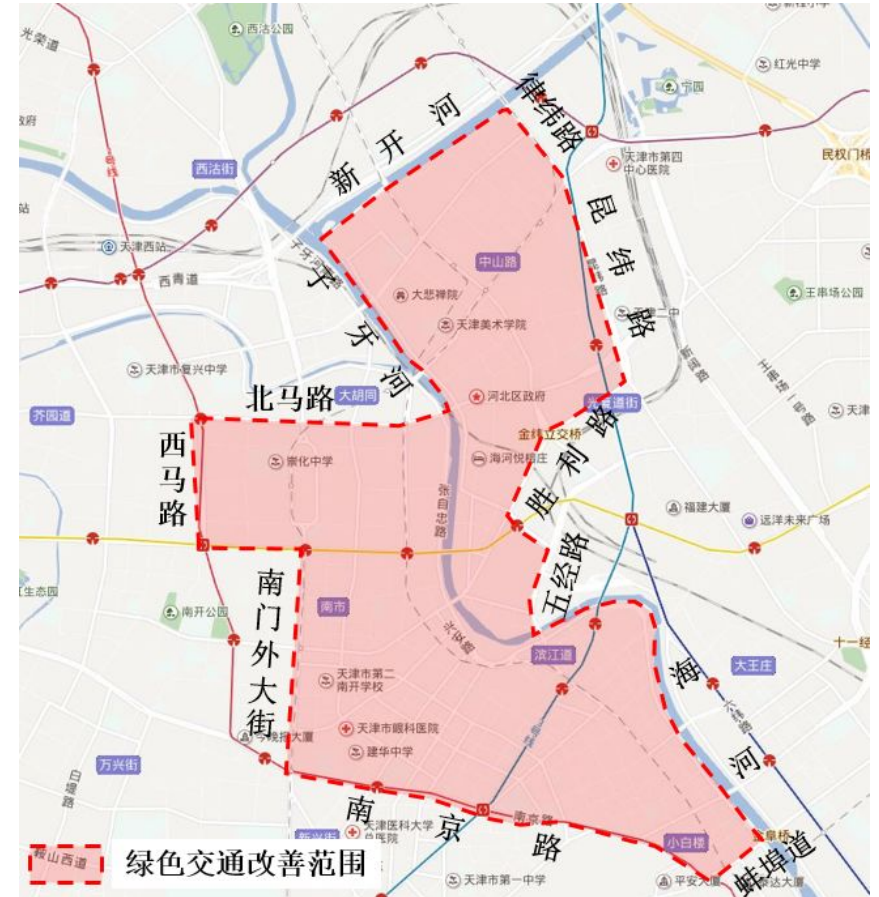
Planned Bike Corridors



Project approach: Rethinking Street Organization for TOD

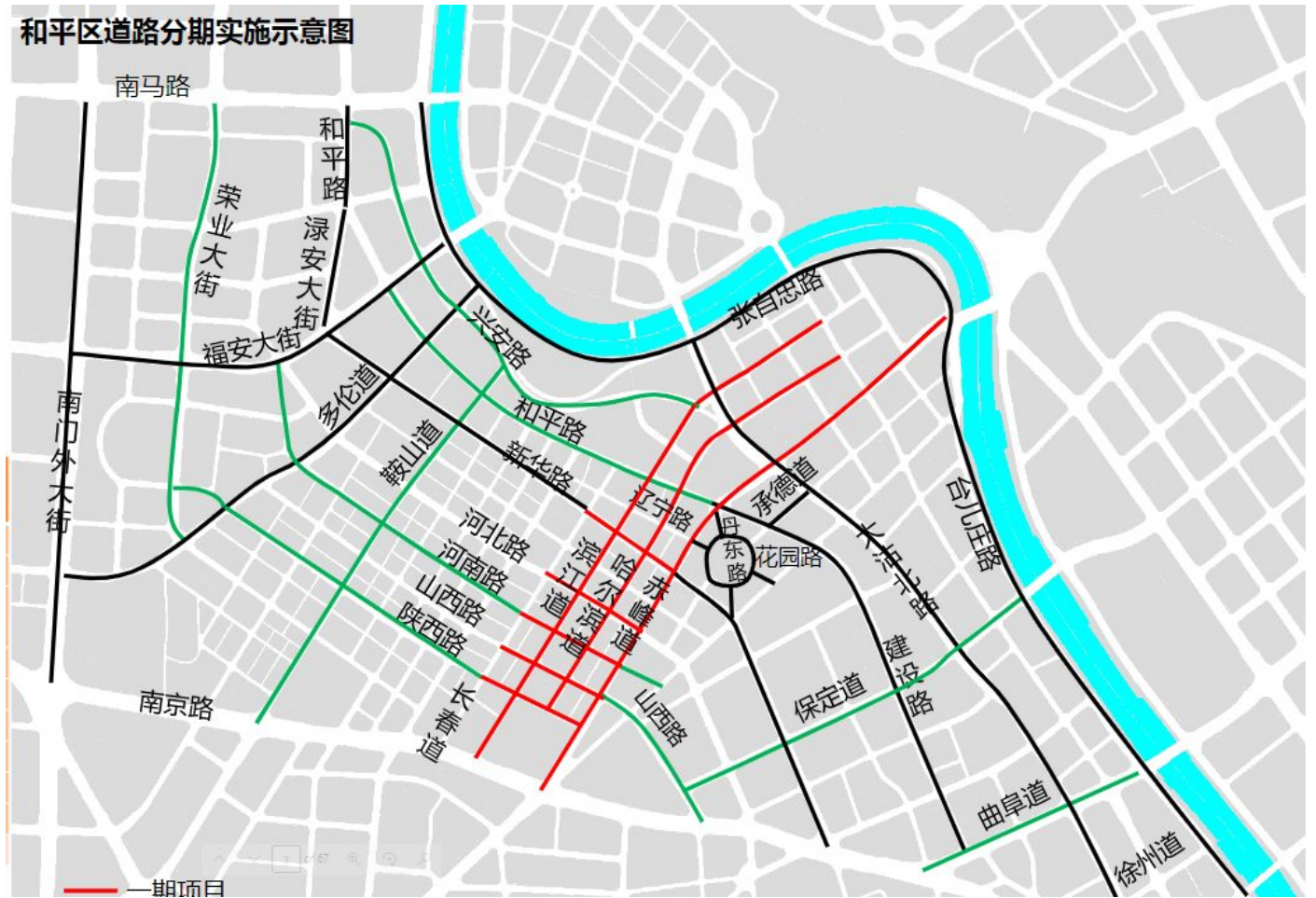
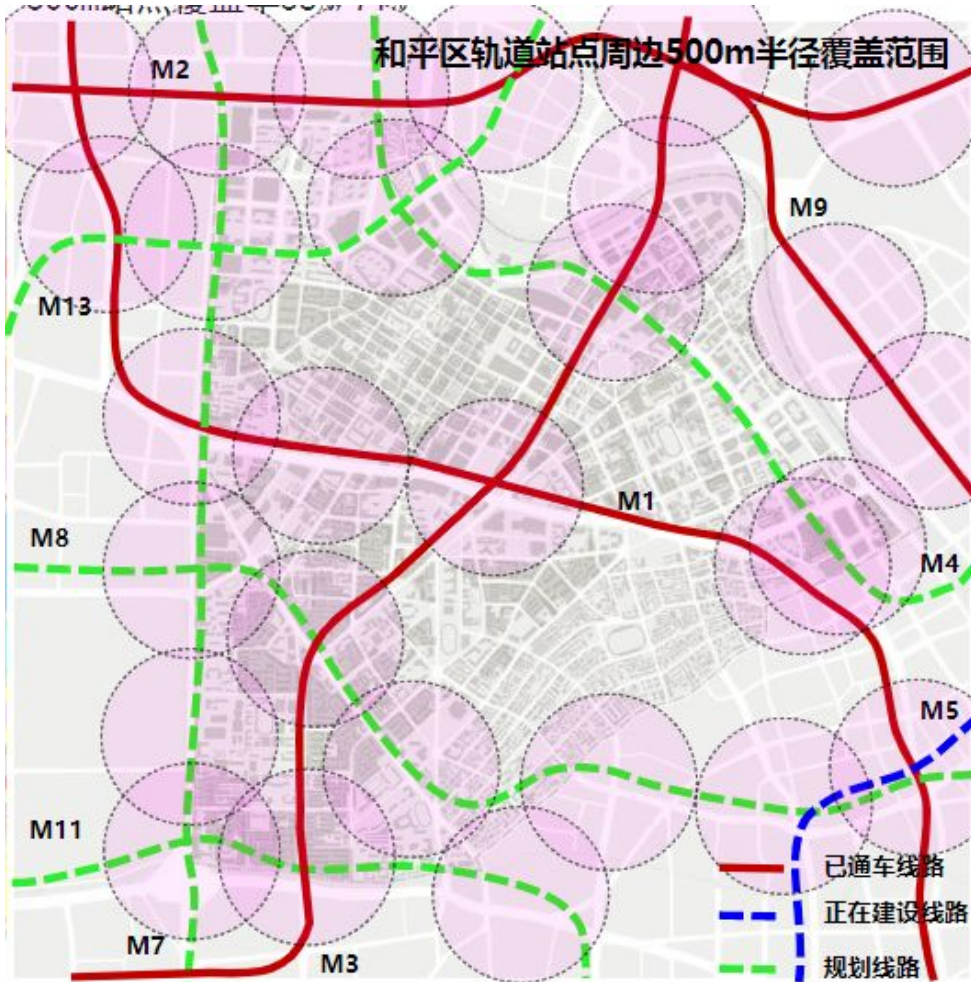
Mass Transit offers an opportunity for a rethink

- ◆The total area of 12 square kilometers
- ◆Districts with high density in city center
- ◆Hyper connected to metro lines in future
 - ◆Heping: 4 lines today- 10 lines in plans with 2km/km2 and 71% of coverage at 500m;
 - ◆Nankai 100%



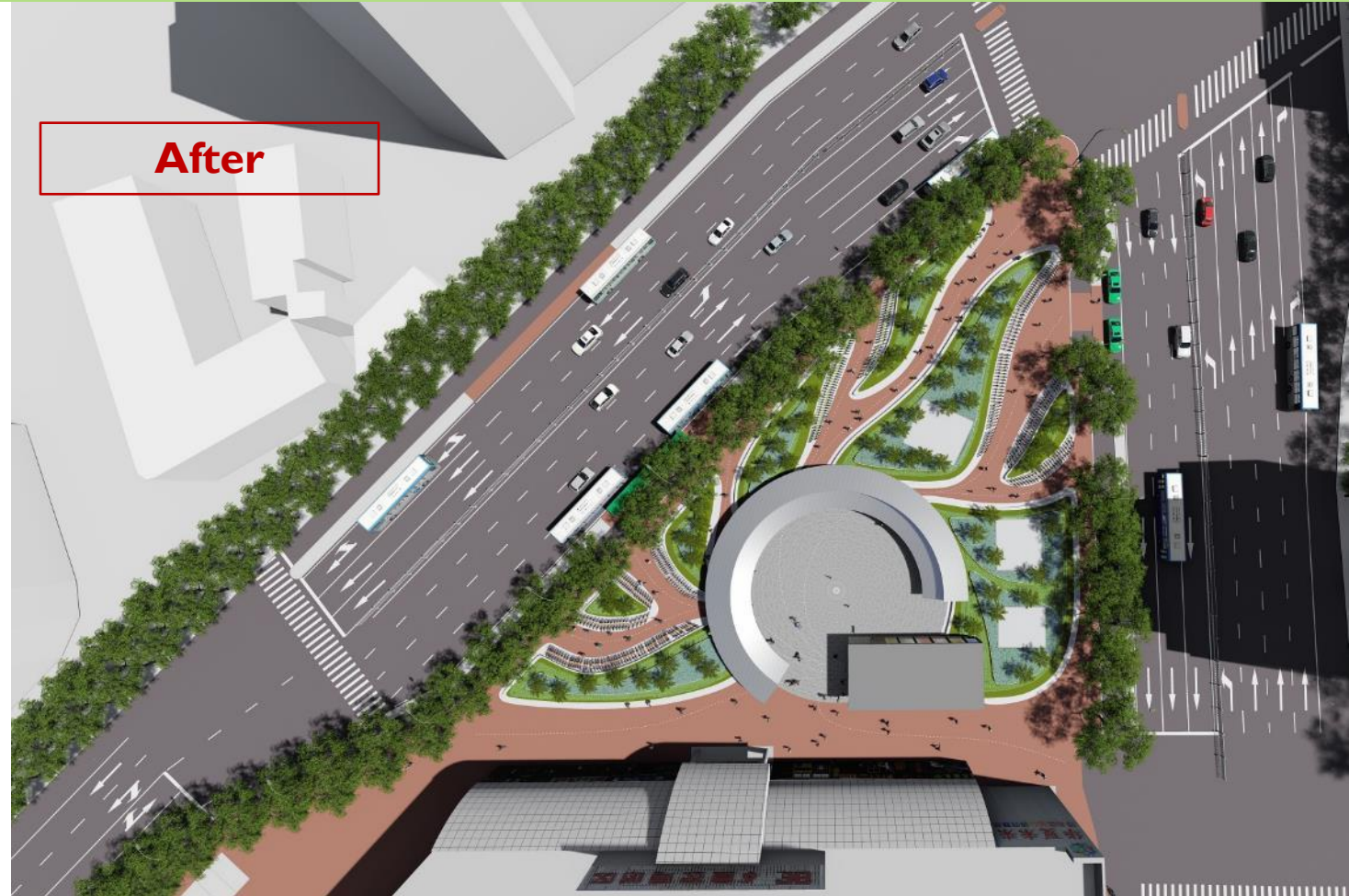
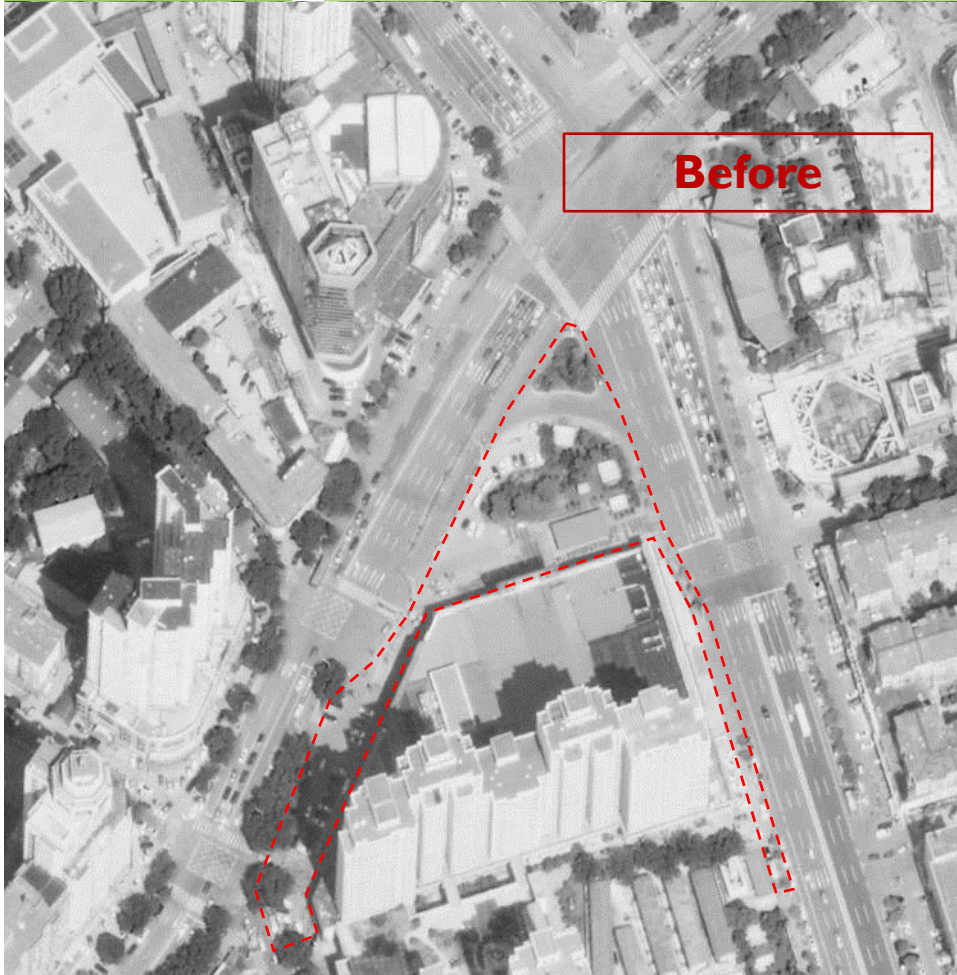
Rethinking Street Organization for TOD

Mass Transit offers an opportunity for a rethink: Heping District



Adjusting Mass Transit Station Environment

Integrated Transport and Urban Space Design at Metro Station



Source: Technical Assistance under Project

Adjusting Mass Transit Station Environment

Park + Metro Neighborhood



Source: Technical Assistance under Project

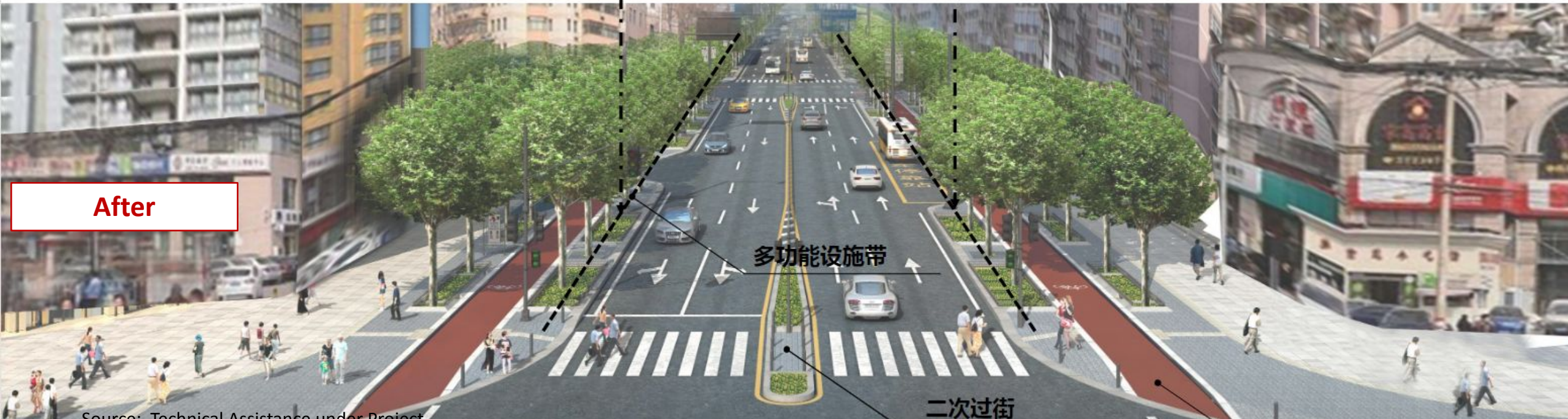
Enhancing safe walking and cycling

Example in Heping

Before



After



Enhancing safe walking and cycling

Example in Heping

Before



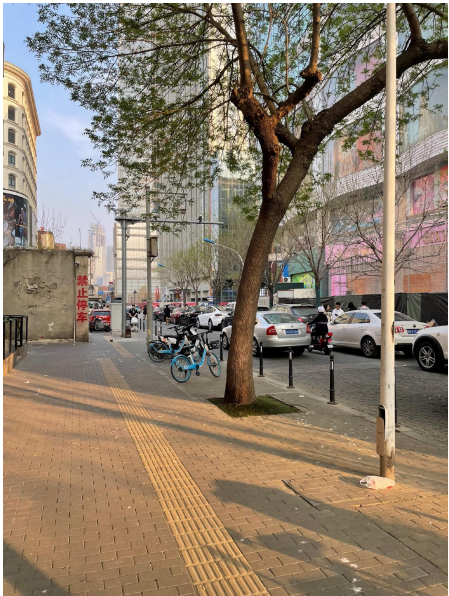
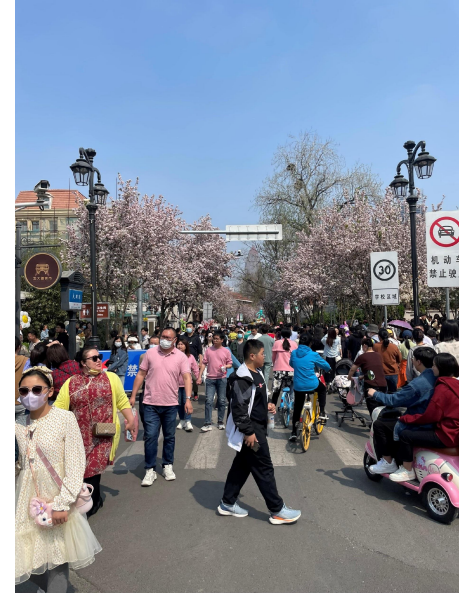
After



INFRASTRUCTURE DELIVERED

- ✓ **189 urban streets renewed and re-prioritized, totaling 132 km**
- ✓ **96 metro stations with access improvements**
- ✓ **38 public parks, squares and gardens built or upgraded, including Xingfu Park**
- ✓ 216,000 square meter of red bike lanes
- ✓ **3,541 sidewalk trees**
- ✓ 1,596 public seats
- ✓ 2,911 garbage bins
- ✓ 284 streetlights
- ✓ 573 traffic light signals installed or upgraded
- ✓ **11,200 m of drainage pipe installed (example of Binjiang Road)**
- ✓ 1 bus terminal

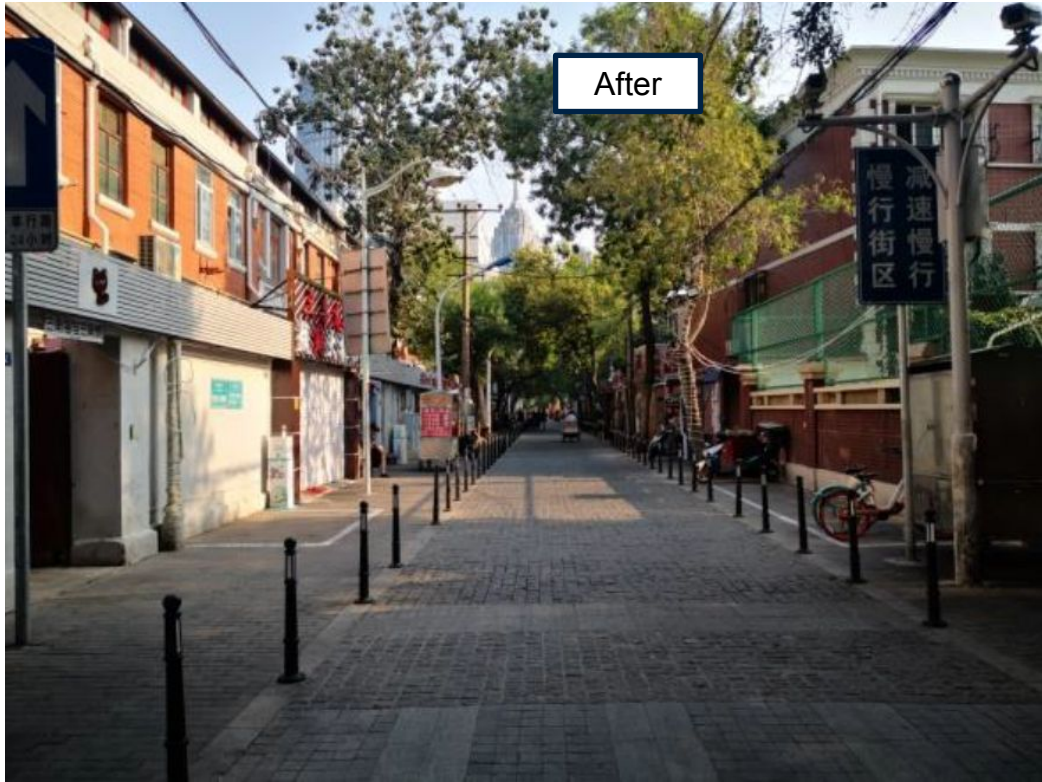
INFRASTRUCTURE DELIVERED



1. SUPPORTING COMMERCIAL VITALITY



2. WALKABLE NEIGHBORHOODS



3. RESTORING THE RIGHT OF WAY OF BIKES ON ALL STREETS



All photos are *After* photos unless otherwise noted.

3. RESTORING THE RIGHT OF WAY OF BIKES ON ALL STREETS



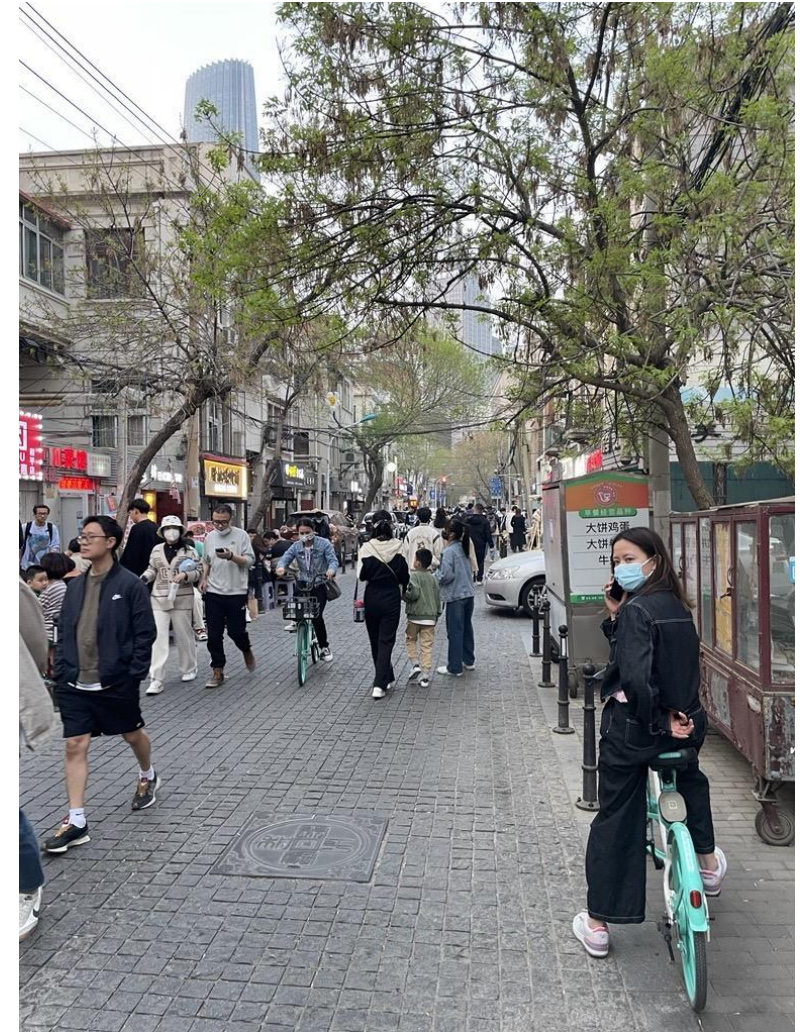
4. PLACES FOR COMMUNITY LIFE



4. PLACES FOR COMMUNITY LIFE



5. REALLOCATING PUBLIC SPACE TO MORE SOCIALLY AND ECONOMICALLY PRODUCTIVE PURPOSES



OUTCOMES

1. Mode Shift / Decarbonization

- 34% bike mode share (2020)
- 175,750 additional daily trips now happening by metro (2022)
- 261,144 additional daily trips now happening by walking and biking (2022)

2. Economy and Equity

- Ex-post EIRR of 53.54% (+300% of appraisal EIRR)
- + number, density, and average consumption of small businesses.
- Disproportionate benefits to the bottom 40 percent^b

3. Safety

- 100% of streets iRAP 3-star or above (was 30%)^c
- 9.2% less accidents^b

4. Resilience. Improved drainage for vulnerable pedestrianized commercial shopping street, among city-wide drainage improvements

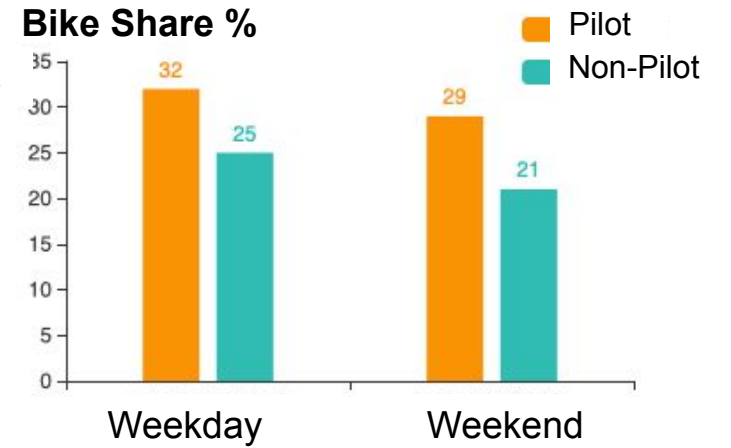
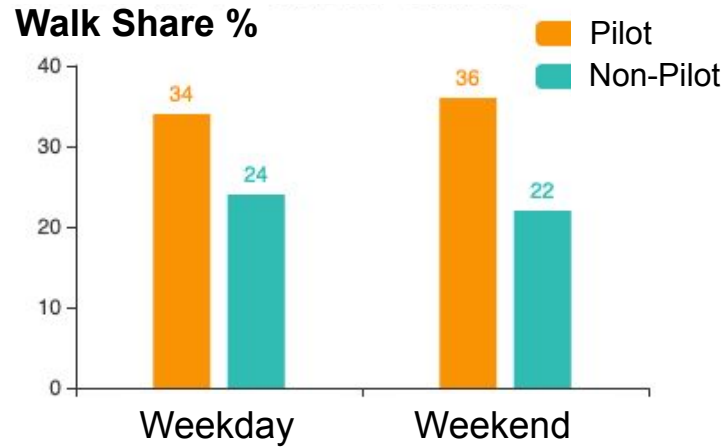
a. Over 65 percent of households in the bottom 40 percent of the income distribution walked or biked for their trips, compared to about 30 to 35 percent for higher income groups. 44 percent of the extreme poor lived in one of the six central districts (2015)

b. Sample of 20 streets, totaling 16.5km. Rating for bicyclists and pedestrians.

c. Between 2019 to 2022 for project streets within Hebei, Heping and Nankai Districts

OUTCOMES

The overall economic vitality index:
pilots +18.4% vs. **non-pilots +2.7%**



	Pilot Streets		
	Before (2016)	After (2020)	Change Rate %
# Quality stores/ 100m	3.4	8.3	142.7
# Popular stores/ 100m	3.4	6.8	101.2
Store rating by customers	3.2	3.5	9.5
Store opinions	249.2	323.1	29.6
Store expenditure	168.5	218.1	29.4
Store rent (RMB/m/day)	4.0	5.7	43.4

Source: Analysis of the Short-term Impact of Tianjin NMT Project on Regional Economic Vitality

Innovations under the Project

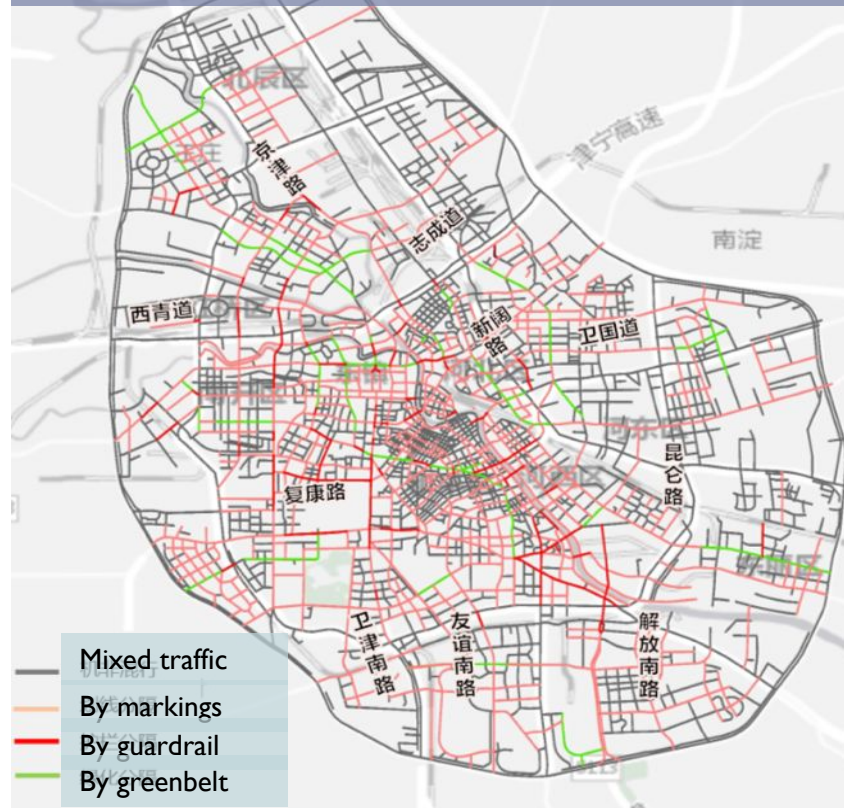
Data

Better Integrated Data for Smarter NMT Planning and Decision Making

Multi-layers Infrastructure Data

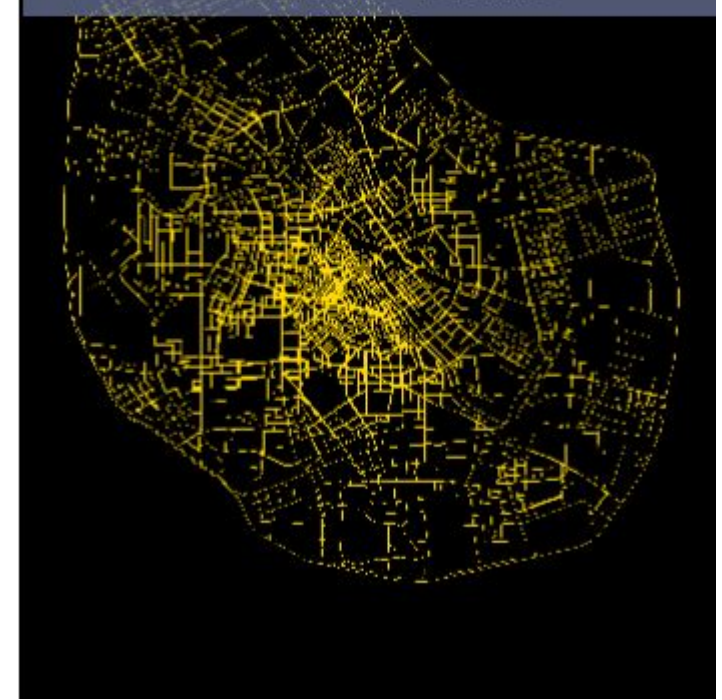


Apply computer vision and AI to identify bike lane separation facilities



13:00

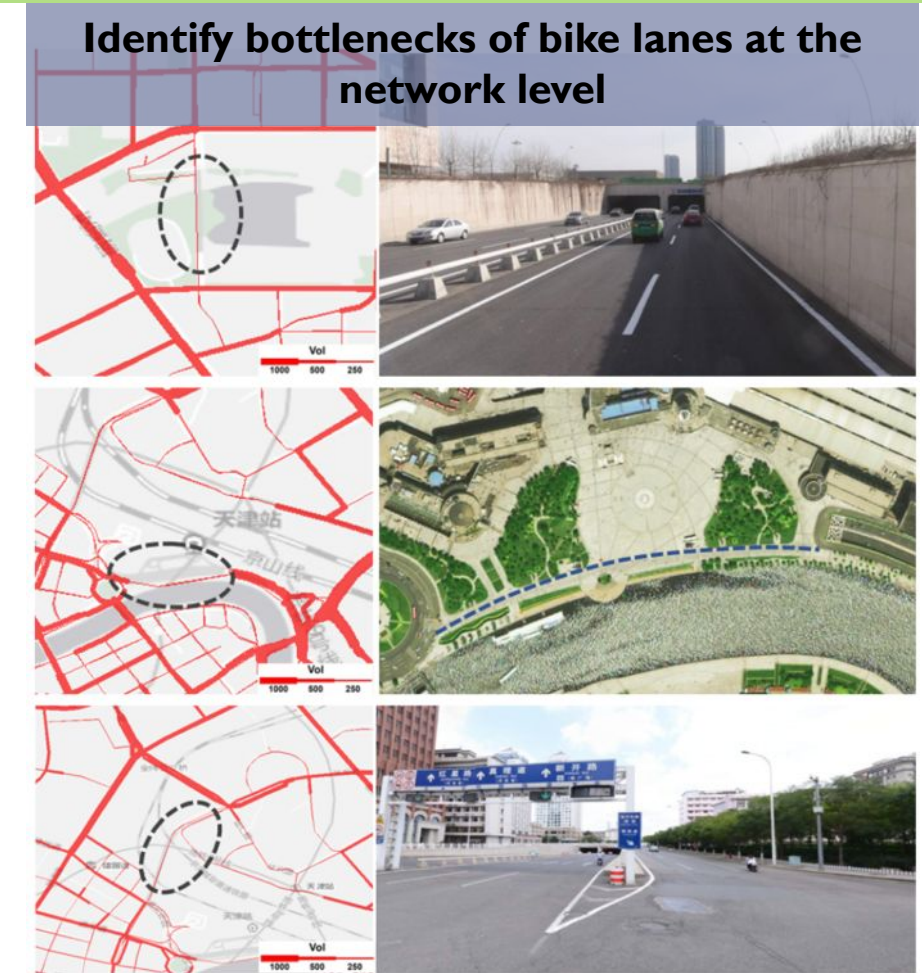
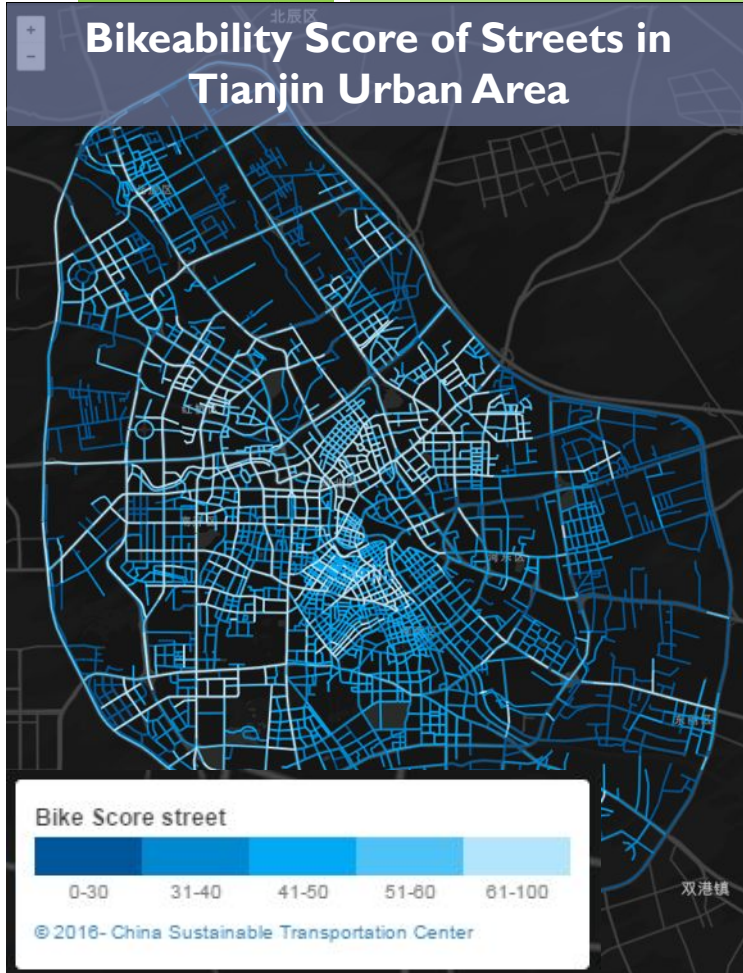
Spatiotemporal Distribution of PBS Traffic Volume



Innovations under the Project

AI

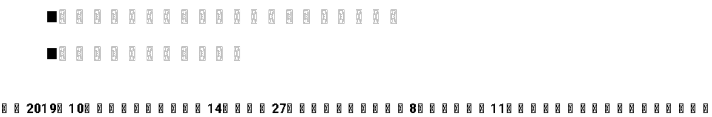
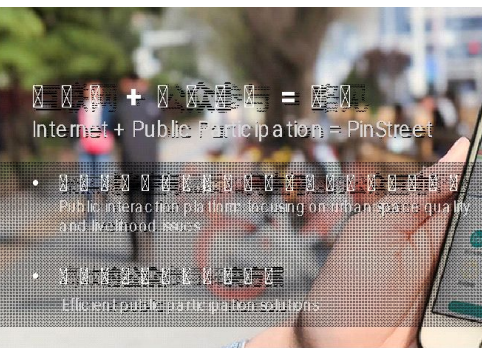
Apply AI Algorithms to Diagnose NMT Environment at a Network Level



Innovations under the Project

Citizen

Collect and Analyze Crowdsourcing Public Opinions via PinStreet App



路见天津·公众参与管理平台

参与概况

提案总数	参与人数	字数统计
6487	5157	284084

地图工具

地图工具 分布图

提案类别 全选 清除

骑行环境	自行车停放	电动车
过街设施	步行环境	占道停车
无障碍设施	标识与指引	休憩空间
夜间照明	遮阳避雨设施	自定义

提案详情

共6487条, 已选择6487条

向往
丰台区少年宫(文体路东)

#骑行环境#路边缺少自行车道, 机动车违停现象严重, 极易导致危险事故发生。

momo
河北区秀山园(江都路西100米)

#休憩空间#小区环境卫生差! 小朋友没有一个可以安全玩的区域, 老年人没有可以遛弯活动的地方--小区排水管道更换完了善后无人管理路面都是明显的石头与土堆-

柳岩
河东区成林道(理趣0广场东南)

#占道停车#卖菜的太少了! 应设几个生活所需的零售市场! 老百姓关心的就是: 柴米油盐酱醋茶! 迫切地希望建市场! 以方便老百姓的生活所需!!!!

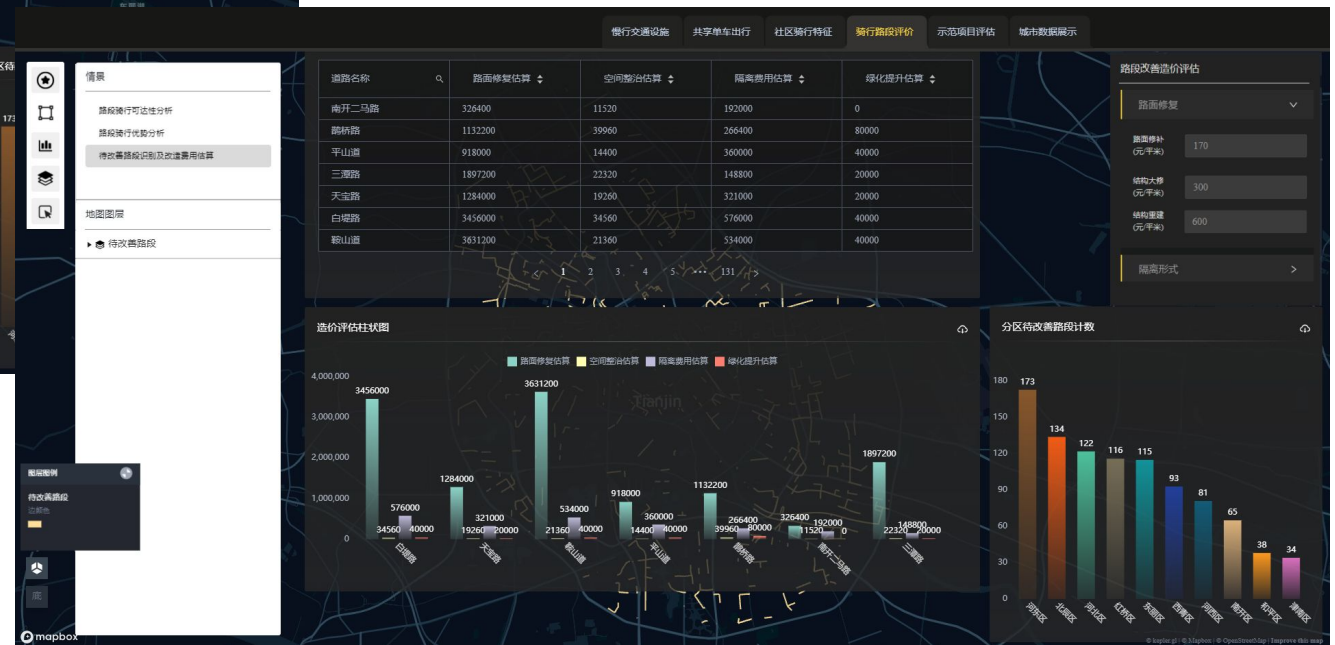
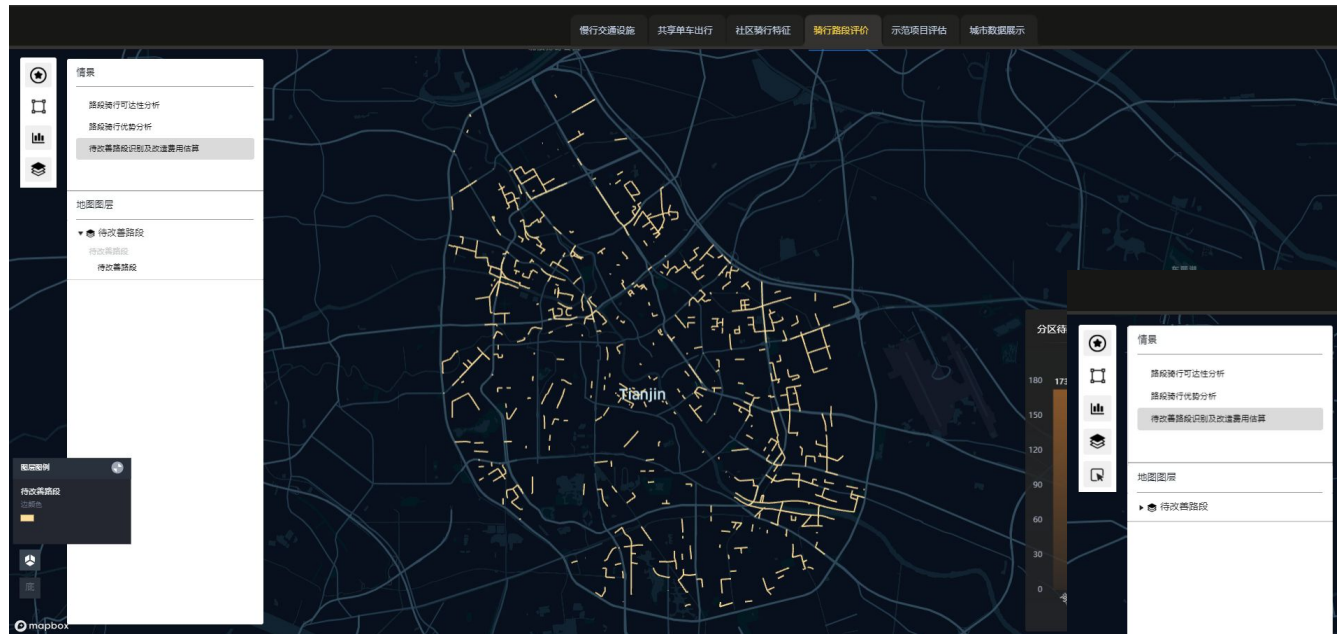
路见PinStreet © 2017-2021

Innovations under the Project

Platform

Nationwide First Decision Support Platform for Improving NMT Environment

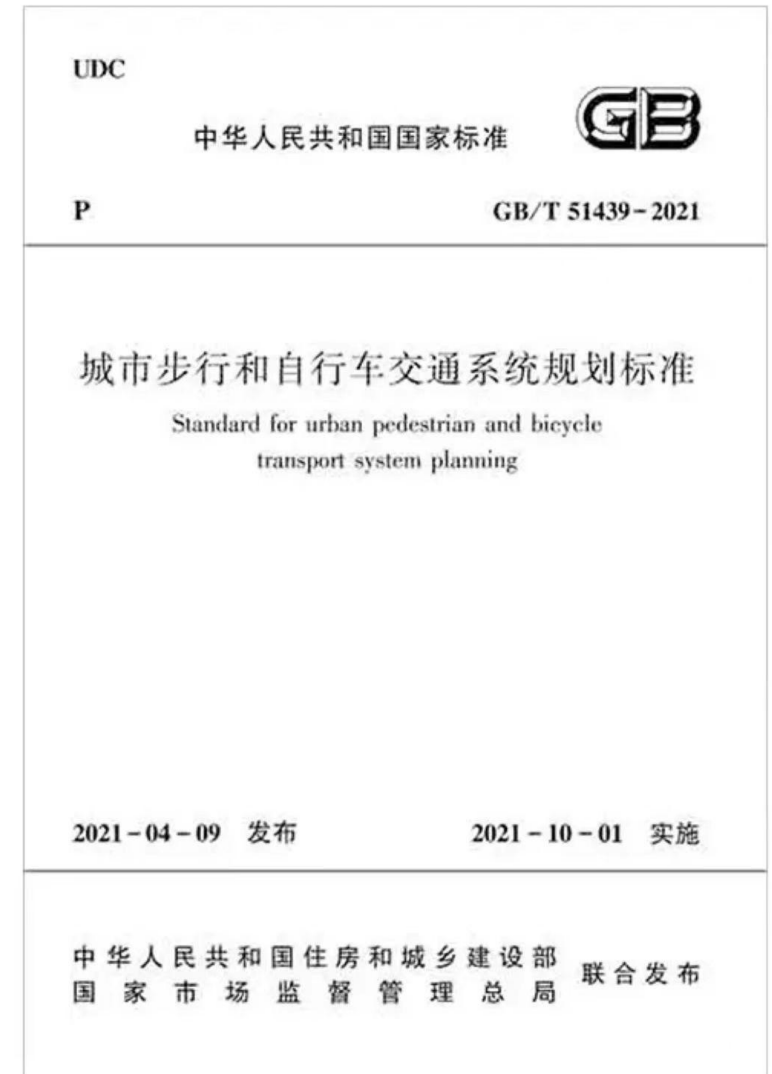
Project identification and recommendation



Project cost estimates

RECOGNITION AND INFLUENCE

- 1. City.** Directly influenced the design of the *14th Five-Year Development Plan for Tianjin Green Transportation (2021-2025)* and the *14th Five-Year Plan for Tianjin Comprehensive Transportation (2021-2025)*.
- 2. Country.** Heavily influenced the design of the inaugural *National Standards for Urban Pedestrian and Bicycle Transportation System Planning and Design (2021)*.



THE ROAD AHEAD...BACK TO THE FUTURE



1980s



2022



SUSTAINABLE TRANSPORT AWARD

 staward.org

Thank you!



Institute for Transportation
& Development Policy