



Yanji Parking & Non-motorized Transport

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Non-motorized Transport Components

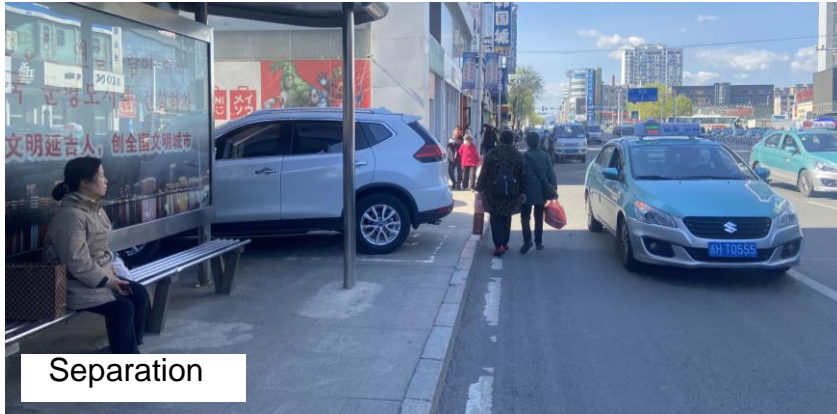
1. Input to phase 1A BRT corridor design
2. Input to phase 1B BRT corridor design
3. Key feeder roads connecting to BRT stations
4. City-wide Greenway network



Key NMT design issues for NMT on BRT Corridor & Greenway (1)



Key NMT design issues for NMT on BRT Corridor & Greenway (2)



Greenway Network

Safe and convenient corridors for pedestrians and cyclists, for transportation and recreation purposes

Goals:

- Provide attractive corridors for walking and cycling
- Connect high-demand locations (shopping, office, residence, services)
- Connect existing greenways, pedestrian streets, parks, riverside
- Provide access to BRT stations

Yanji Greenway Network



Different kind of greenways



Lyon, France. Cycle path, walkways, seating, playgrounds, landscaping

Different kinds of greenways



Seoul, Korea. Cycle path, walkway, seating, fitness machines, connections

Different kinds of greenways



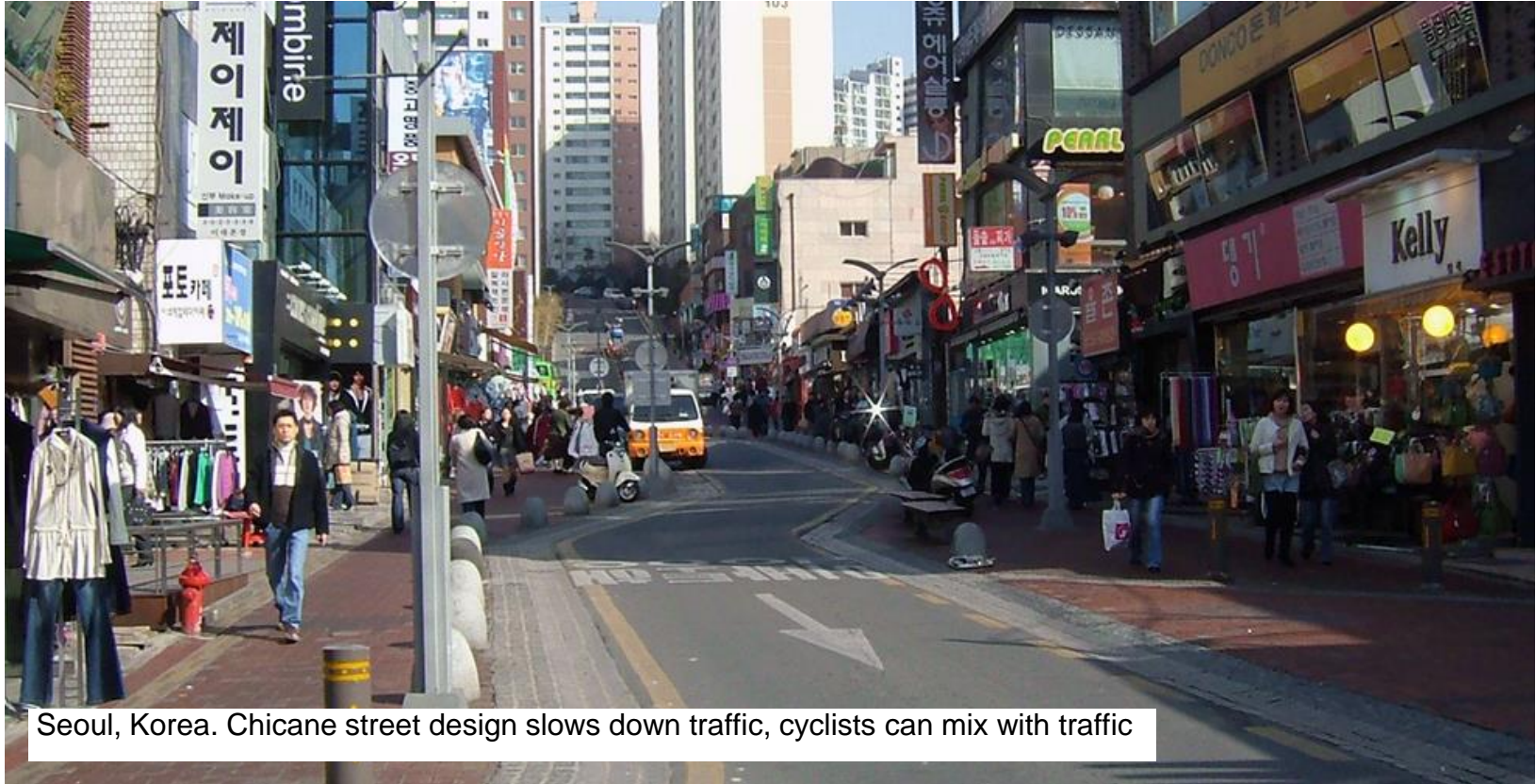
Bogota, Colombia. Segregated greenway connection from city center to suburbs

Different kinds of greenways



New York, USA. Segregated cycle path and walk along downtown street

Different kinds of greenways



Seoul, Korea. Chicane street design slows down traffic, cyclists can mix with traffic

Key NMT Design Aspects for BRT corridor & Greenways

1. Sidewalks and bicycle lanes

- Continuous through intersections & driveways
- Physical dividers to keep motorized traffic at bay on large traffic corridors

2. Crossings for convenient access to destinations (and BRT stations)

- At intersections
- At mid-block, or where demand is
- At BRT stations

3. Amenities: bicycle parking, public seating, lighting, wayfinding, etc.

Continuity of NMT infrastructure – through intersections



公园路 – 金达菜北街

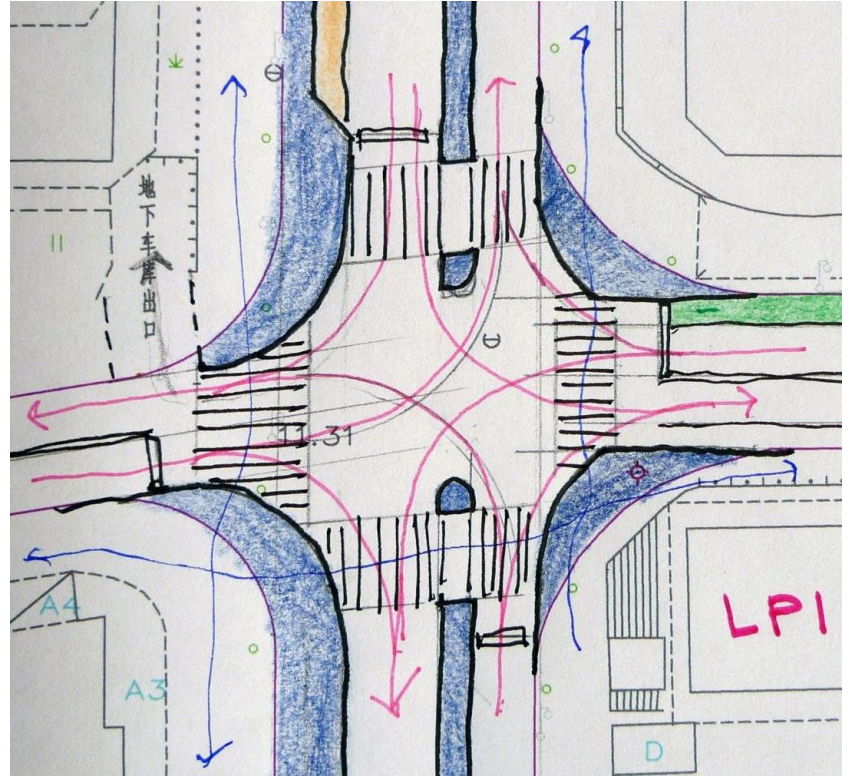
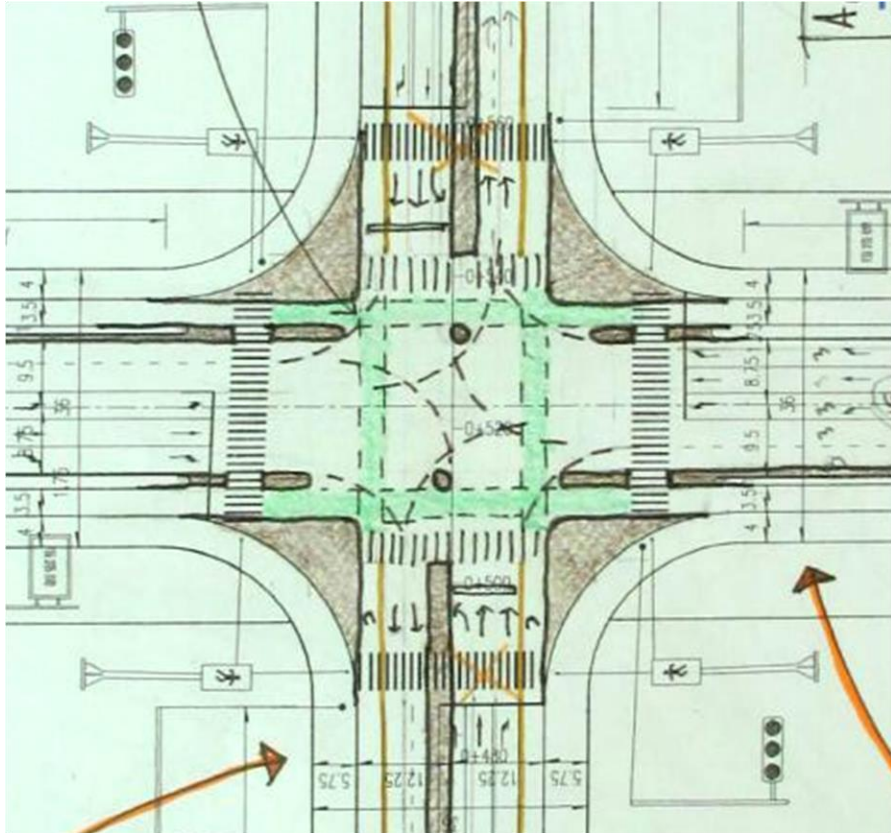
Curb radius: reduce crossing distance

Refuge islands

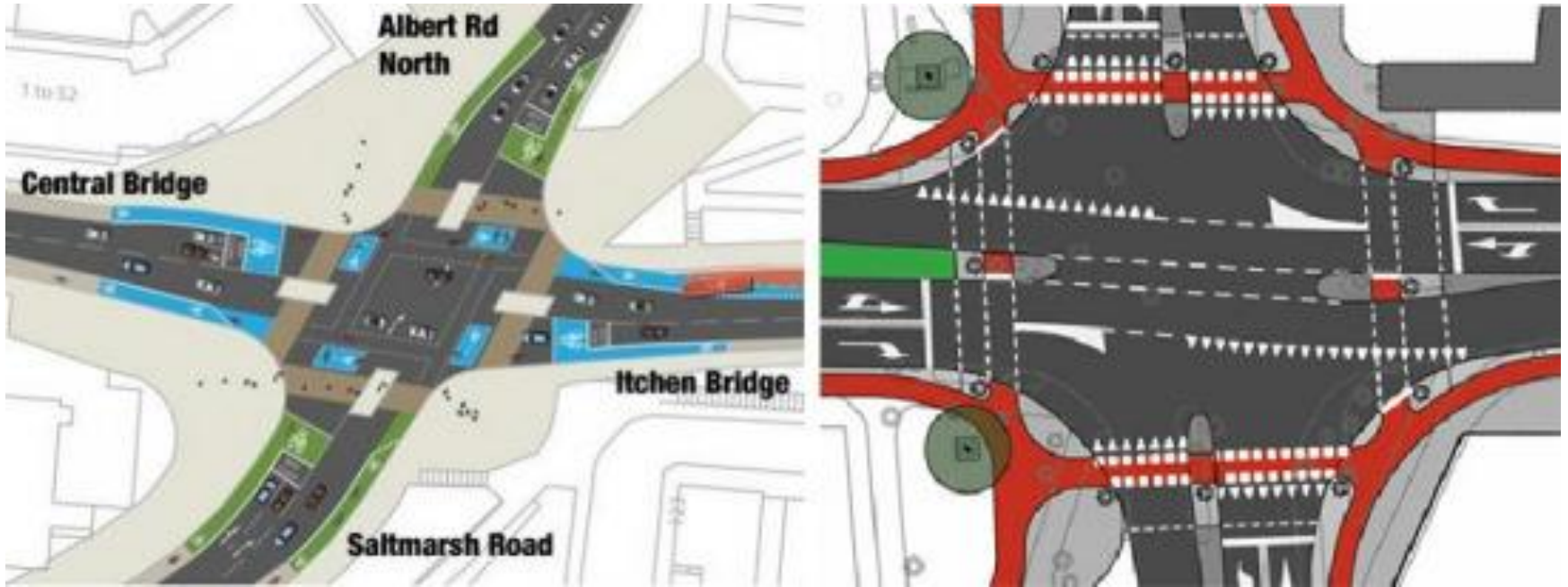
Painted cycle lanes

Restrict driving options

Continuity of NMT infrastructure – through intersections



Continuity of NMT infrastructure – through intersections



Continuity of NMT infrastructure – through intersections



Continuity of NMT infrastructure – through driveways



url Fjellstrom, fareastbrt.com

Amsterdam, The Netherlands



Seoul, Korea

Continuity of NMT infrastructure – past bus stops, across rivers/roads



Crossings for Pedestrians and Cyclists – refuge islands



Rotterdam, The Netherlands

Crossings for Pedestrians and Cyclists – median (left) – speed tables (right)



Separation from motorized traffic – bollards



Berlin, Germany



Budapest, Hungary



Yanji

Separation from motorized traffic – curb / permeable curb



Separation from motorized traffic – fence / landscaping



Amenities - Bicycle Parking – bus stop, on-street, city center



Amenities – Wayfinding, Signage



Amenities – Leisure, Playgrounds, Public Seating, Cafes



Winter: Cycling shares worldwide drop, but remains popular

Amsterdam (average temperature: 0 - 5 degrees Celsius): cycle share drops by 15%

Copenhagen (average temperature: -1 - 3 degrees Celsius): cycle share drops by 15%

Poor cycle infrastructure and road safety are much larger detriments to cycling than weather conditions



Copenhagen, Denmark



Oulu, Finland

Snow Removal on Bicycle Lanes



Winter: Cycling shares worldwide drop, but remains popular

- Ice is dangerous; snow not so much (Dec-Feb). When snow melts and refreezes, plowing is more important
- Sweeping works better than sodium chloride deposits (which remains on bicycle lanes, as opposed to traffic lanes)
- Implement standards for plowing, when snow reaches 3-5cm
- Road design that accommodates spaces for dumping snow
- Feedback platform for users to notify government
- Creative measures: underground heat pipes, projections

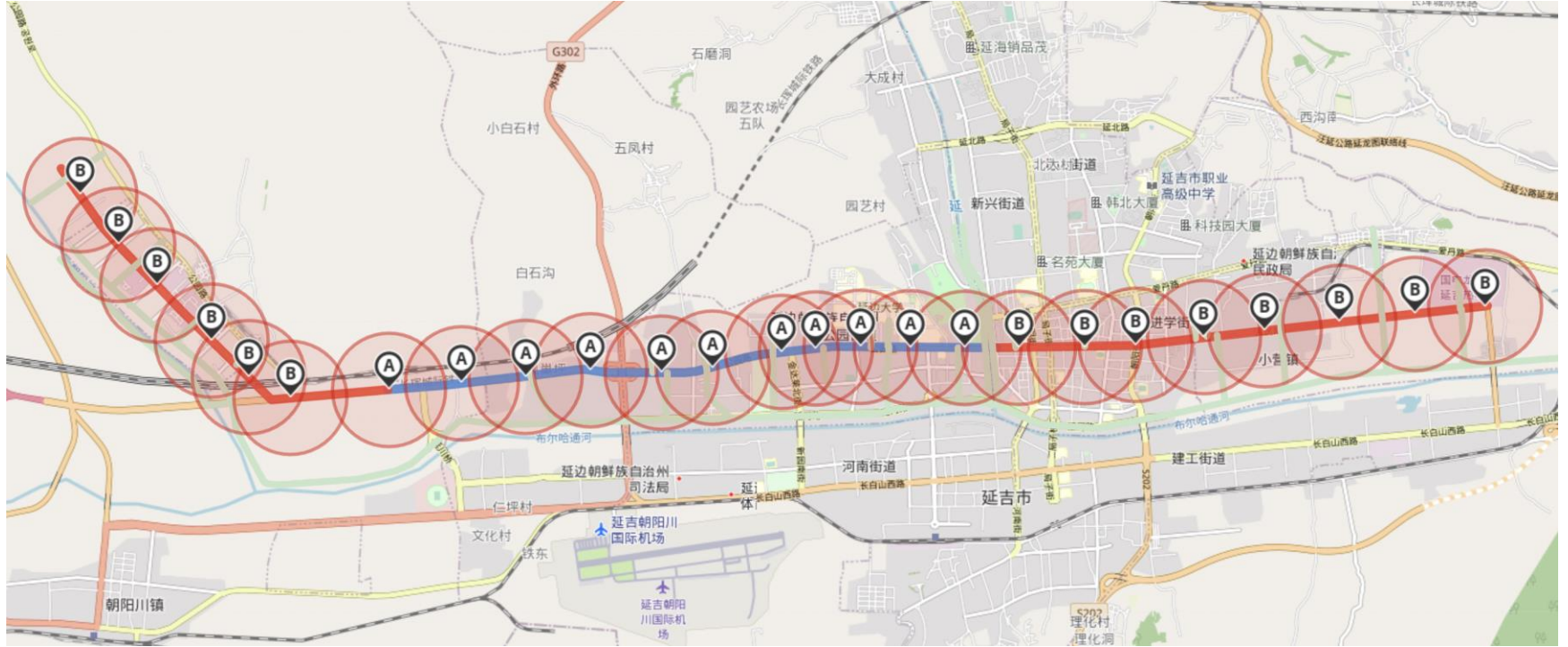


Copenhagen, Denmark



Oulu, Finland

Parking along BRT corridor, TOD stations, city-wide



Parking problems in Yanji – poor walking & shopping environment



Setback parking is detrimental to pavement



Parking problems in Yanji – long-term parking, no enforcement



Parking along BRT corridor

Priority to BRT lanes, mixed traffic lanes, pedestrians and cyclists

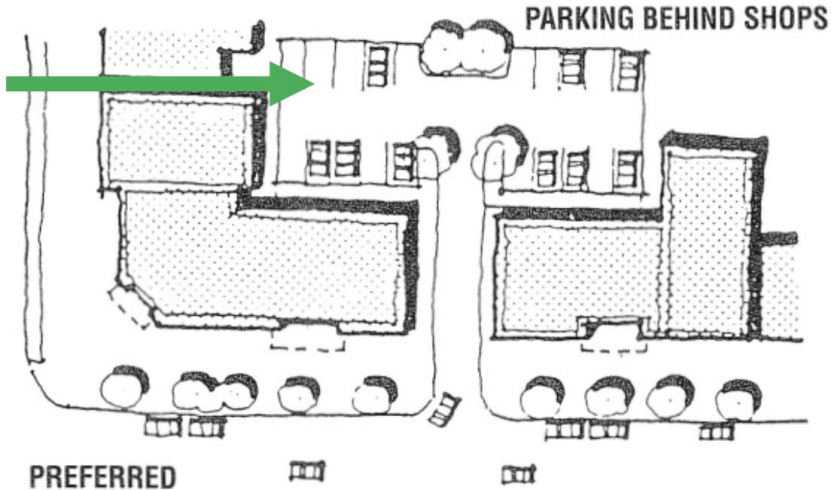
Ban on-street parking, enforcement of illegal parking

Limit setback parking along the corridor as much as possible:

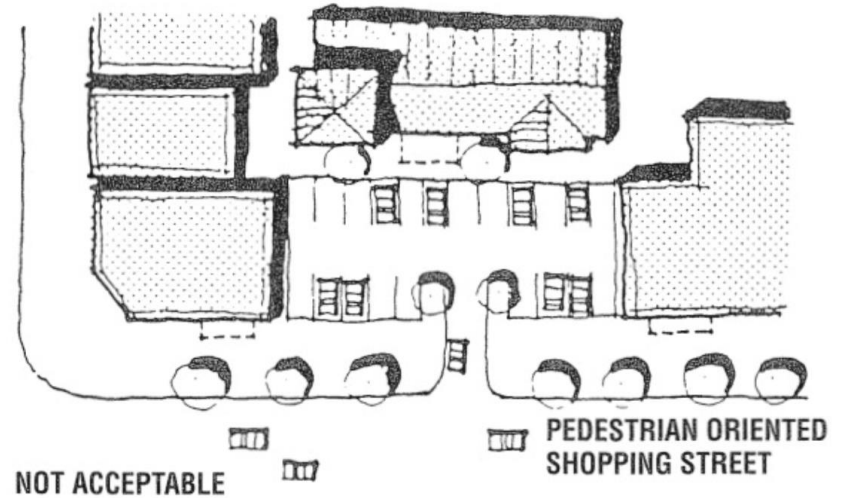
- Alternative parking locations nearby
- Setback ownership issues

Parking management: station by station analysis of parking supply and demand

Setback parking along BRT corridor

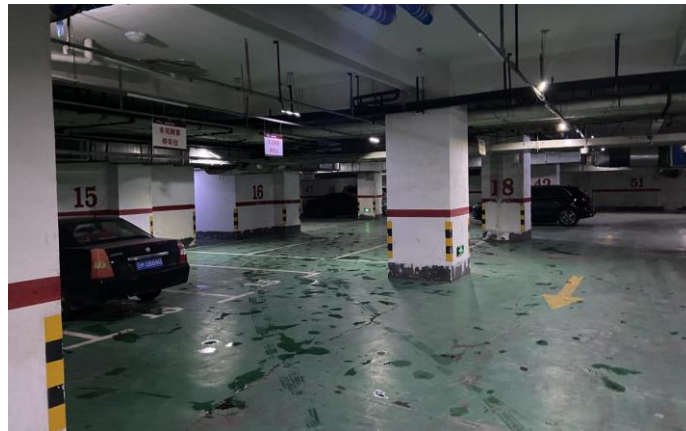


Acceptable

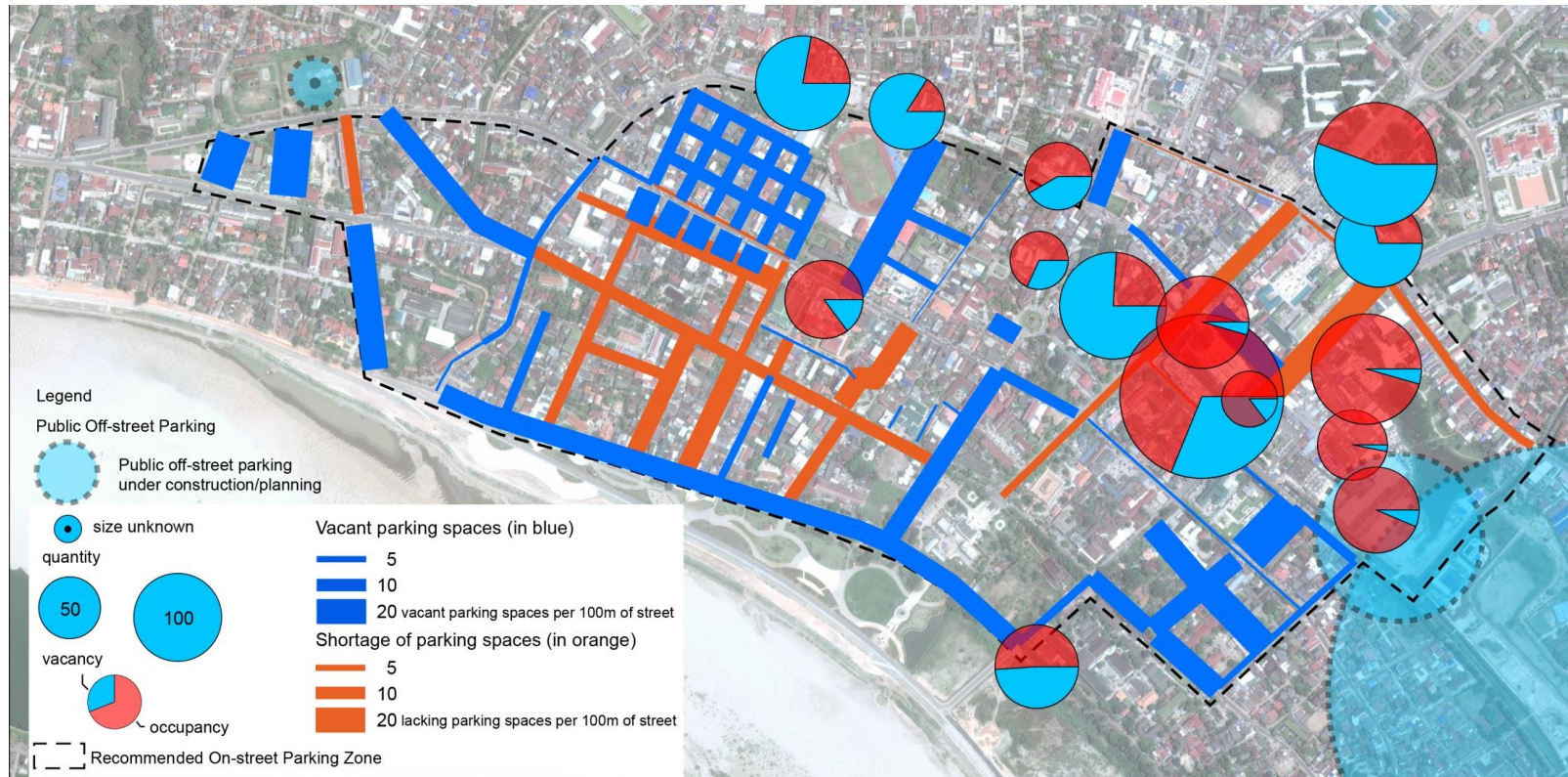


Undesirable

Balance demand for on-street & off-street parking



Balance demand for on-street & off-street parking (example Vientiane, Laos)



Reclaiming streets from parking – lessons learned

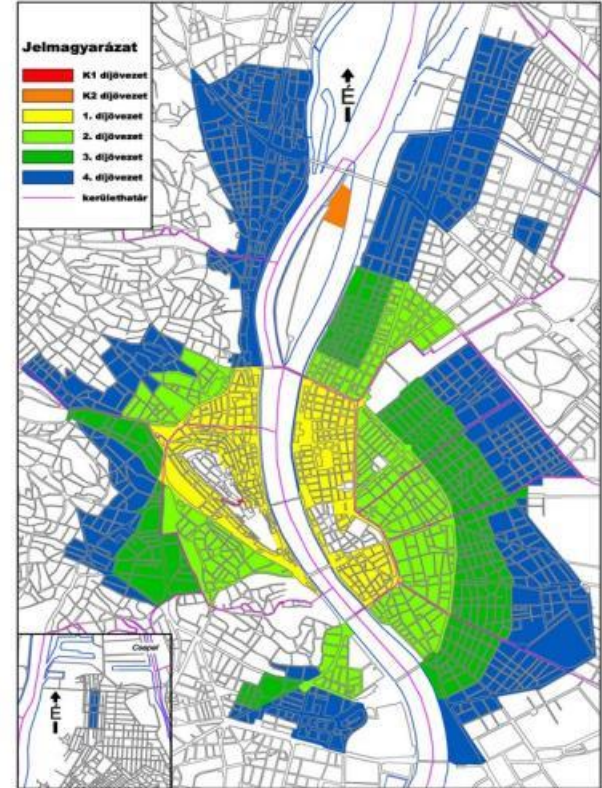
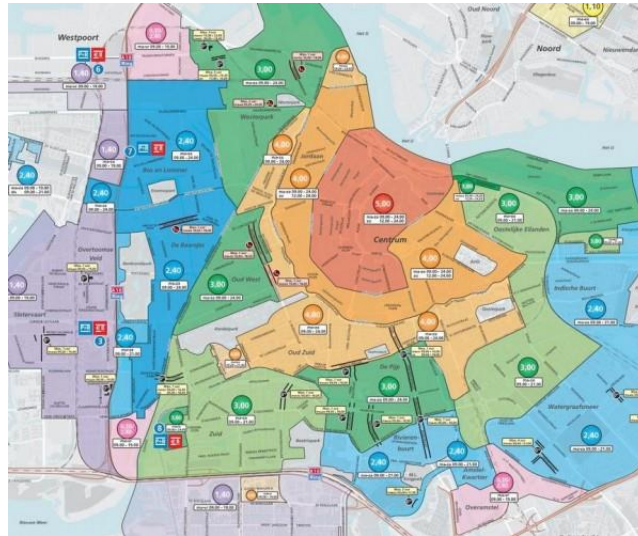
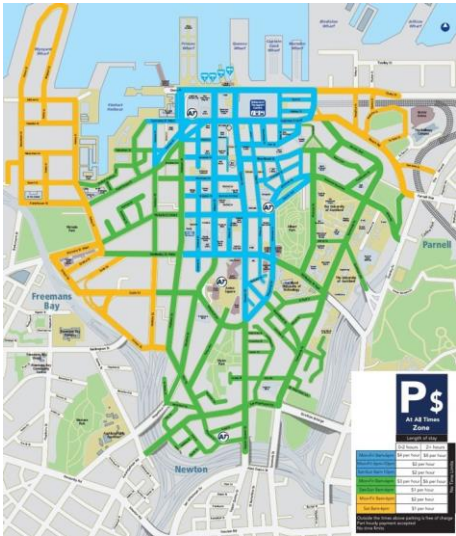


Copenhagen,
Denmark



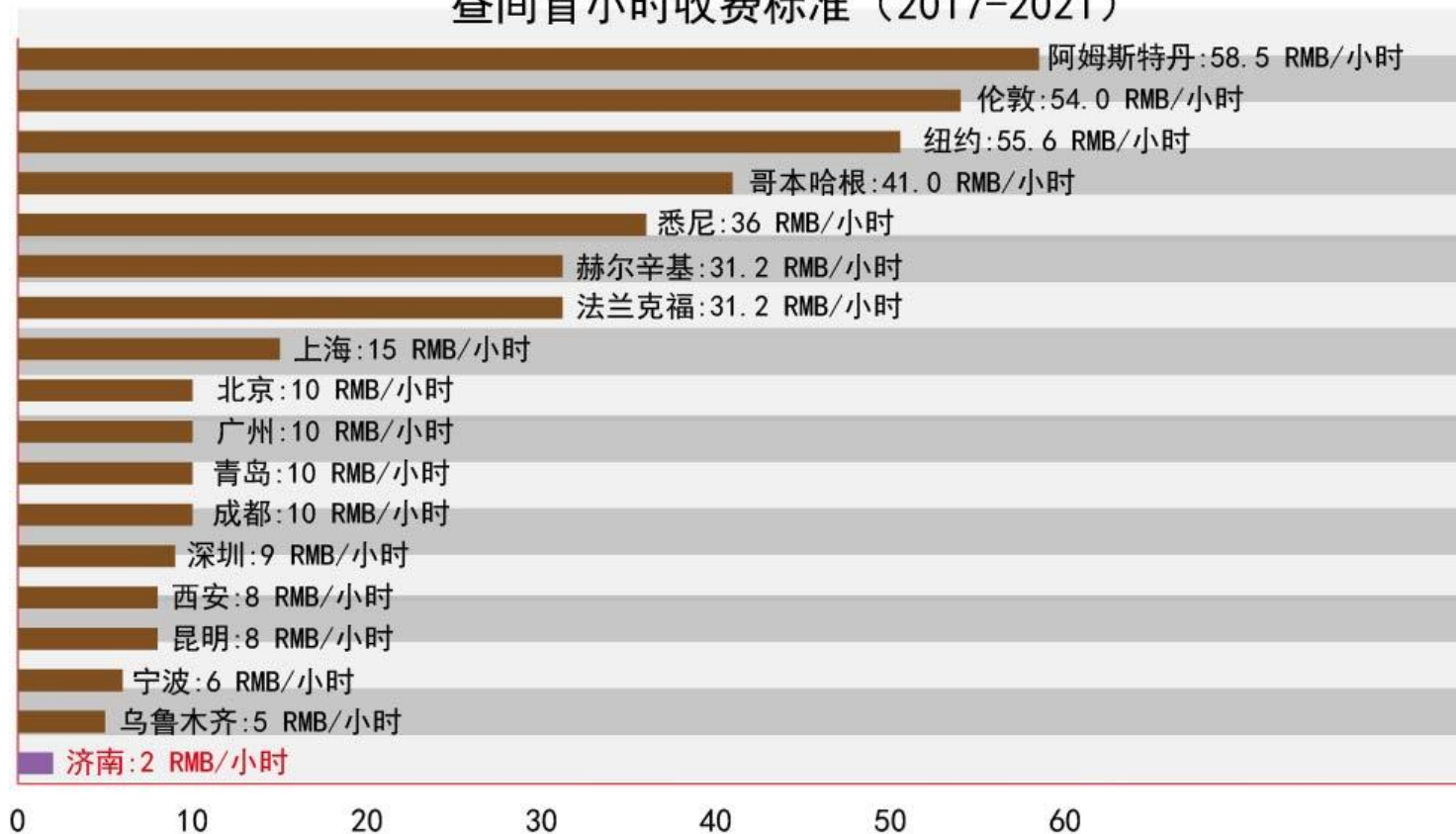
Budapest,
Hungary

Comprehensive parking pricing & zoning

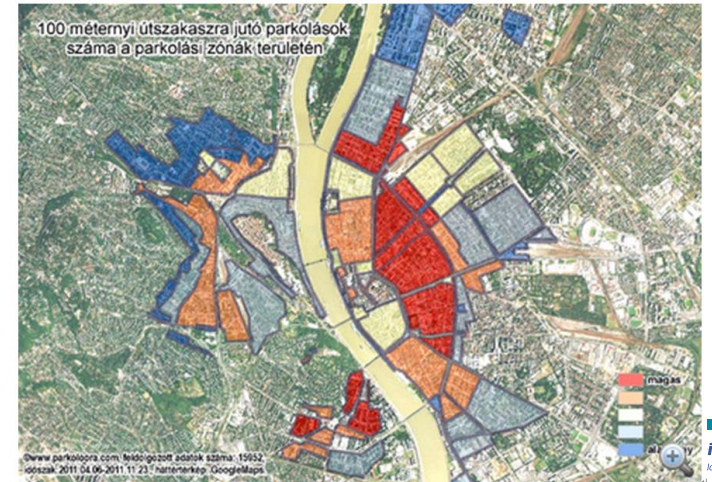
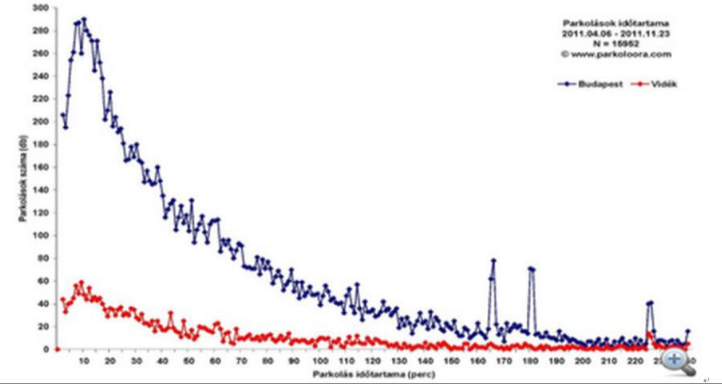
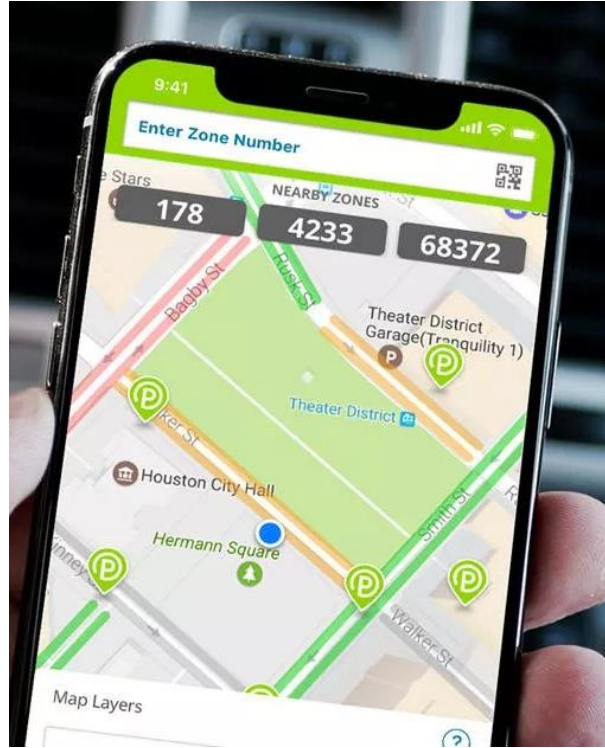


Parking Fee

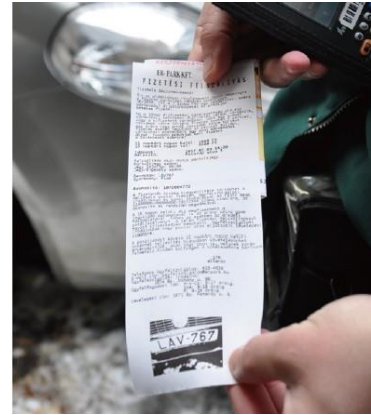
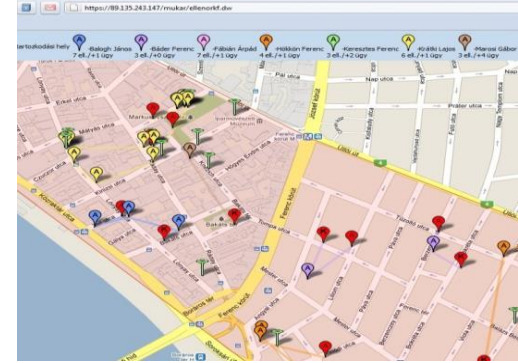
昼间首小时收费标准（2017-2021）



Parking technology: cell phone payment, convenient, real-time parking data



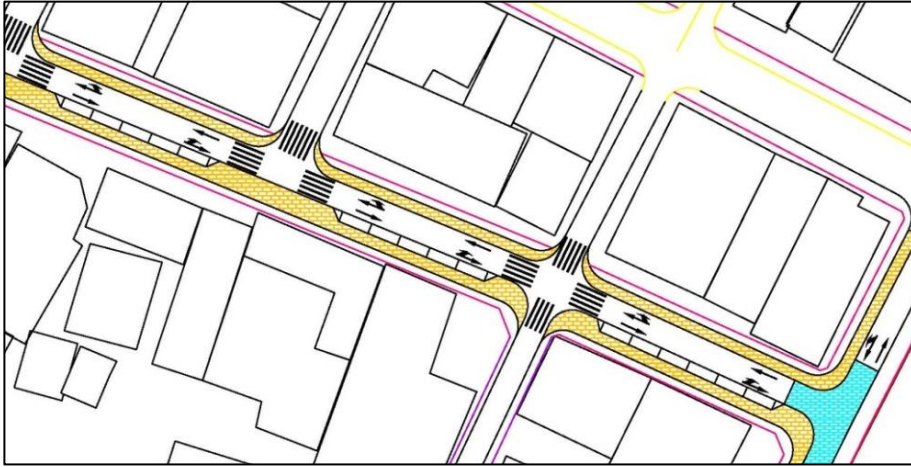
Parking operation: PDAs, control center, real-time data, fine printing



Enforcement of illegal parking



On-street Parking Design



Divert parking demand to off-street facilities



TOD around BRT Stations – parking standards, public space, etc.



TOD around BRT Stations – parking standards, public space, etc.

