



# Streets that fit: Re-spacing Mobility for the 21st Century



Algorithmic governance  
Artificial intelligence  
Automated Driving  
Big Data  
Data science (Blockchain)  
Digital regulation  
Drones  
Innovative mobility services  
Micromobility  
Mobility as a Service  
New mobility and infrastructure

~100 years of street design and mobility choices

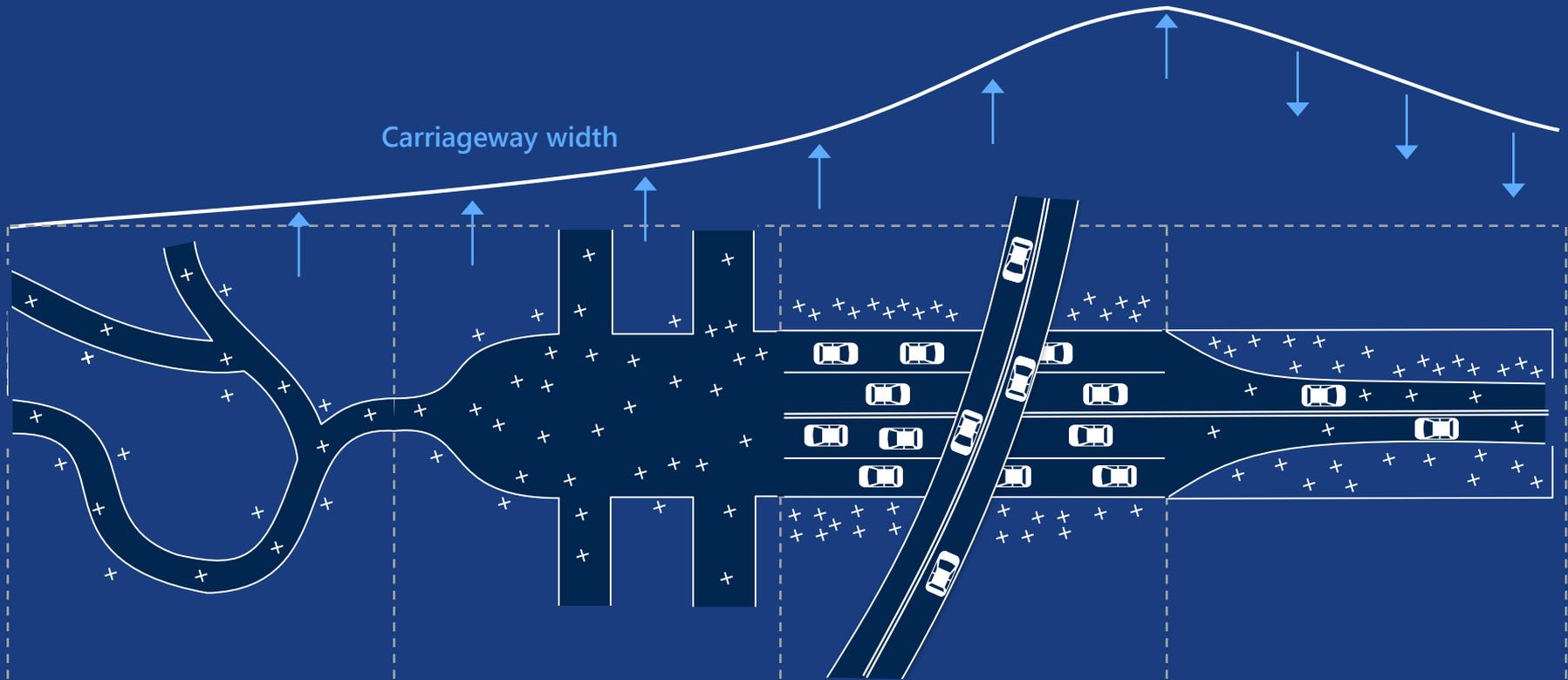


~100 years of street design and mobility choices



~100 years of street design and mobility choices





Carriageway width

## Pre-1880

Pedestrian-dominated, narrow, windy roads, multiple uses of street space

## 1880-1920s

Pedestrian-dominated, roads widened, paved, street grids introduced

## 1920's-Today

Motor vehicle-dominated, motorway infrastructure, pedestrians/cyclists/other users pushed out of the street,

## Future?

Simultaneous accommodation of multiple users, light modes given space, streets become narrower

What is the blueprint for urban mobility design and function for the 22<sup>nd</sup> century?

# Shared mobility and urban space allocation and management

International Transport Forum | CPB



**Urban Mobility System Upgrade**  
How shared self-driving cars could change city traffic



OECD

International Transport Forum | CPB



**Shared Mobility**  
Innovation for Liveable Cities



OECD

International Transport Forum | CPB

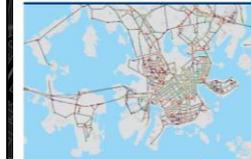


**Transition to Shared Mobility**  
How large cities can deliver inclusive transport services



OECD

International Transport Forum

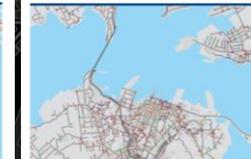


**Shared Mobility Simulations for Helsinki**



OECD

International Transport Forum

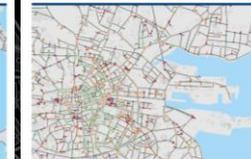


**Shared Mobility Simulations for Auckland**



OECD

International Transport Forum

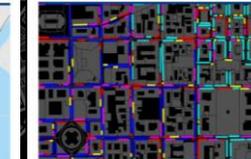


**Shared Mobility Simulations for Dublin**



OECD

International Transport Forum | CPB



**The Shared-Use City: Managing the Curb**



OECD

# What will the next urban mobility blueprint look like?:

1. expanded mobility options
2. re-allocation/re-configuration of space
3. new infrastructure management practices



# 1. expanded mobility options

# Vehicle types



Pedestrians



Bicycles



Light  
motor vehicles



Cars/small  
vans



Minibuses/  
large vans



Buses/  
trucks



Rail



# Vehicle types



Pedestrians

**Bicycles**  
Rideables

Light  
motor vehicles

Cars/small  
vans

Minibuses/  
large vans

Buses/  
trucks

Rail

# Vehicle families (for network allocation)

Mass (kg)

Maximum (dynamic) width (m)

	<35kg	<350kg	<3500kg	>3500kg
<1,00m	<b>A</b> pedestrians			
<1,50m	<b>B</b> rideables			
<2,00 m		<b>C</b> light motor veh	<b>D</b> car-like veh.	
>2,00m				<b>E</b> truck-like veh
Guided				<b>F</b> tram-like veh.

# Vehicle categories

**A**

pedestrians



**B**

rideables



**C**

light motor veh



**D**

car-like veh.



**E**

truck-like veh



**F**

tram-like veh.



# Mobility service business models

**A**  
pedestrians



**B**  
rideables



**C**  
light motor veh



**D**  
car-like veh.



**E**  
truck-like veh



**F**  
tram-like veh.





city user-X



Stasiun  
Pasar Manggarai

parking city ⇨ pick-up/drop-off city

Pick-Up &  
Drop-Off Point

A photograph of a busy city street, likely in a European city, showing a high density of cyclists. In the foreground, a woman and a man are riding bicycles. The background features historic buildings, a large parking area filled with many bicycles, and various street signs, including a blue 'BUS' sign and a red 'no parking' sign. The scene is bright and sunny, with shadows cast on the pavement.

heavy mobility city ⇨ light(er) mobility city

## 2. (radical) re-allocation of space



## 2. (radical) re-allocation of space





## 2. (radical) re-allocation of space





E  
STRAAT

AMSTEL  
BIER

AMSTEL  
BIER

AMSTEL  
BIER

CINZANO

Coca Cola

Café

Coca Cola

AMSTEL BEER

AMSTEL BEER

79-HR-25

STE  
KSTRAAT  
2,4D

16



CAFE DE PUNT

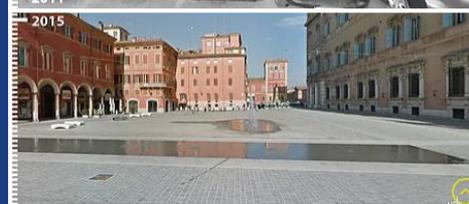
CAFE DE PUNT

CAFE DE PUNT

CAFE DE PUNT



YAMAHA



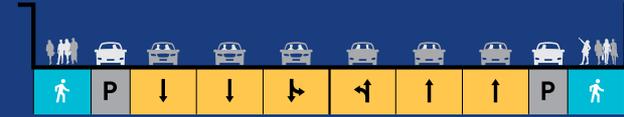
# Re-allocation of street space: now and future

Local

Collector

Minor arterial

Major arterial

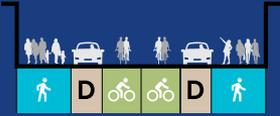


Laneway

Accessway

Transitway

Boulevard



Tailored to  
pedestrians  
10 km/h

Tailored for  
rideables  
25 km/h

Tailored for  
public transport  
40 km/h

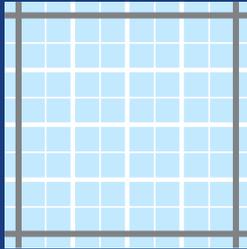
Tailored for all  
modes  
>40 km/h



# Re-calibration of network access and permeability principles: Tailor street environments to different modes



Traditional vehicles

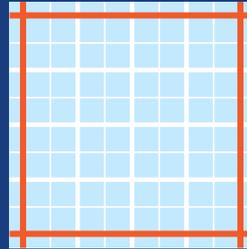


## Boulevards

Boulevards are the only street type designed to accommodate traditional vehicles. Boulevards are designed to safely accommodate transit vehicles, cyclists, and pedestrians as well.



Public transport

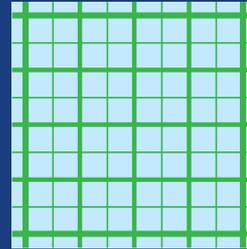


## Transitways and Boulevards

Priority is given to transit vehicles to travel at their desired speed. Bike-share and scooter share stations are co-located with transit stops to enable convenient transfers to other modes. Transit can also travel on Boulevards, but may not be given the highest priority.



Rideables

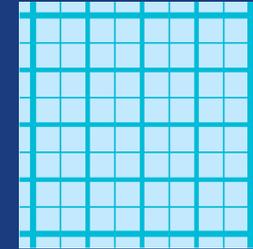


## All streets priority on Accessways

On Accessways, center-running rideable lanes with green waves will allow comfortable use. Some streets may be designated only for rideables and light motor vehicles.



Pedestrians



## All streets priority on Laneways

On Laneways, street furniture and greenery will create safe yet lively paths for pedestrians whether they are trying to get somewhere quickly or just want to stroll through the city.

Kaptenegatan

Torup  
Tygelsjö  
Oxie  
← Rosengård  
Möllevången  
Rådmanvägen

BÅGEN  
RÅBY

LEGNETS  
LÅV

LEGNETS

FÄRSK BRYGG KAFFE

Färdig bryggd kaffe  
Cappuccino  
Latte macchiato  
Cappuccino  
Latte macchiato

BYGG

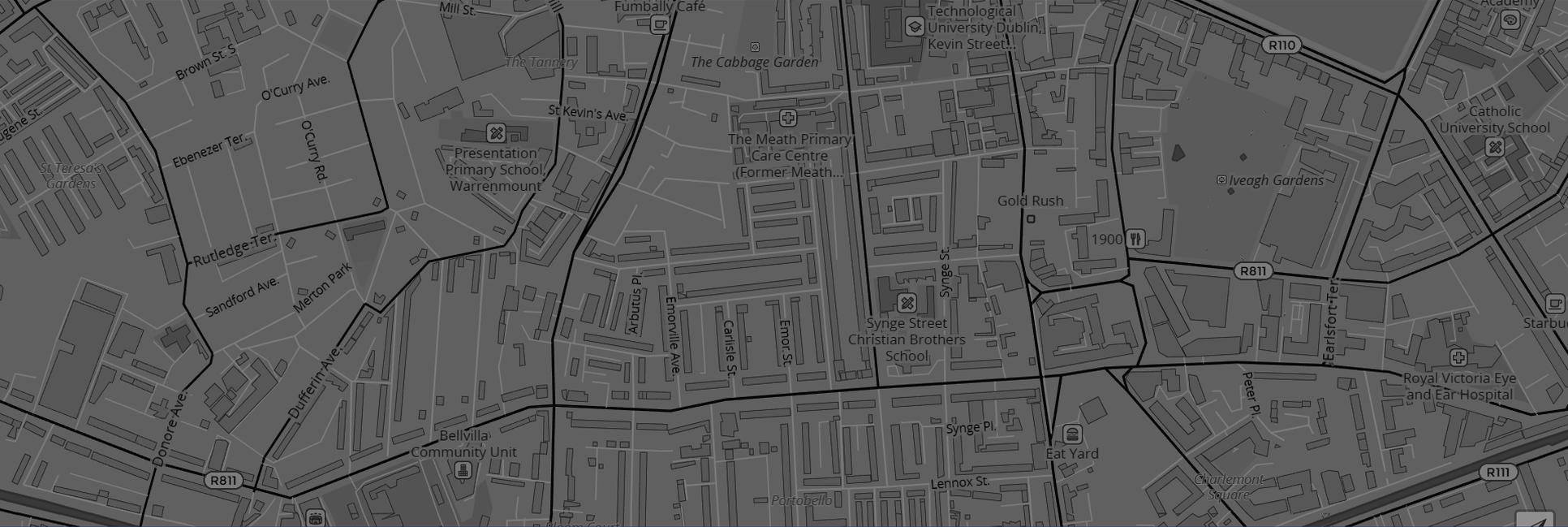
MALMÖ

CYKEL  
REPARATION  
& TILLÄGG

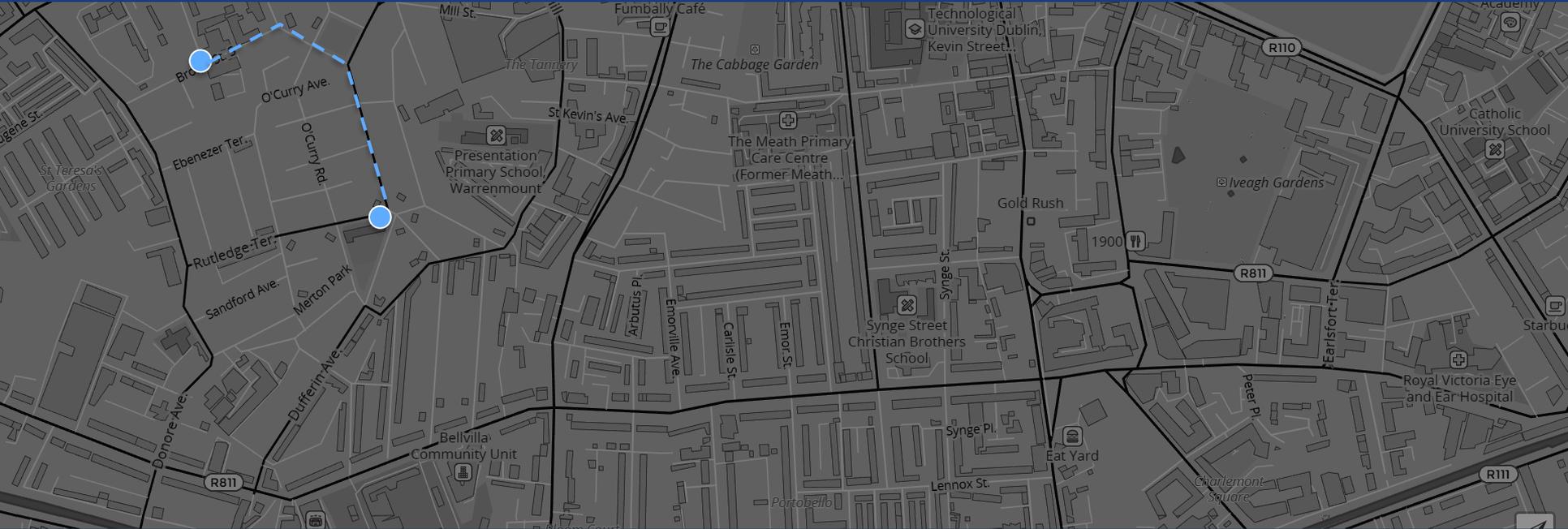
Arlöv  
Värnhemstor  
Rörsjöstaden



# Mobility service principles (var. by location and time)



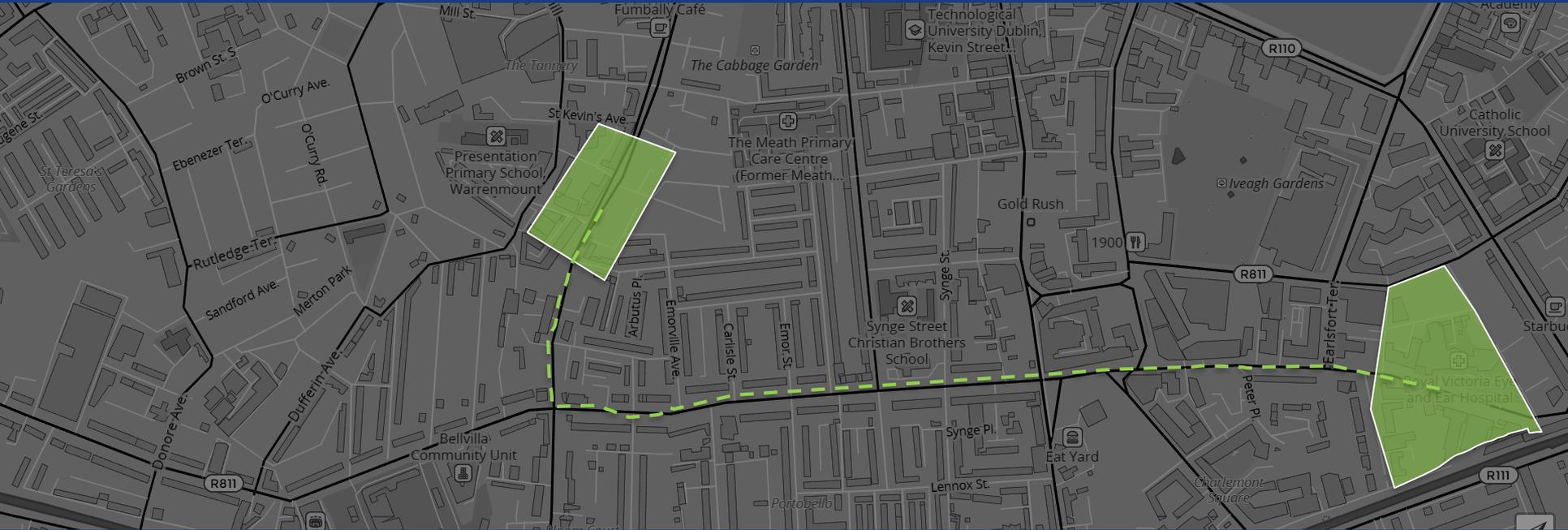
# Mobility service principles (var. by location and time)



door-to-door

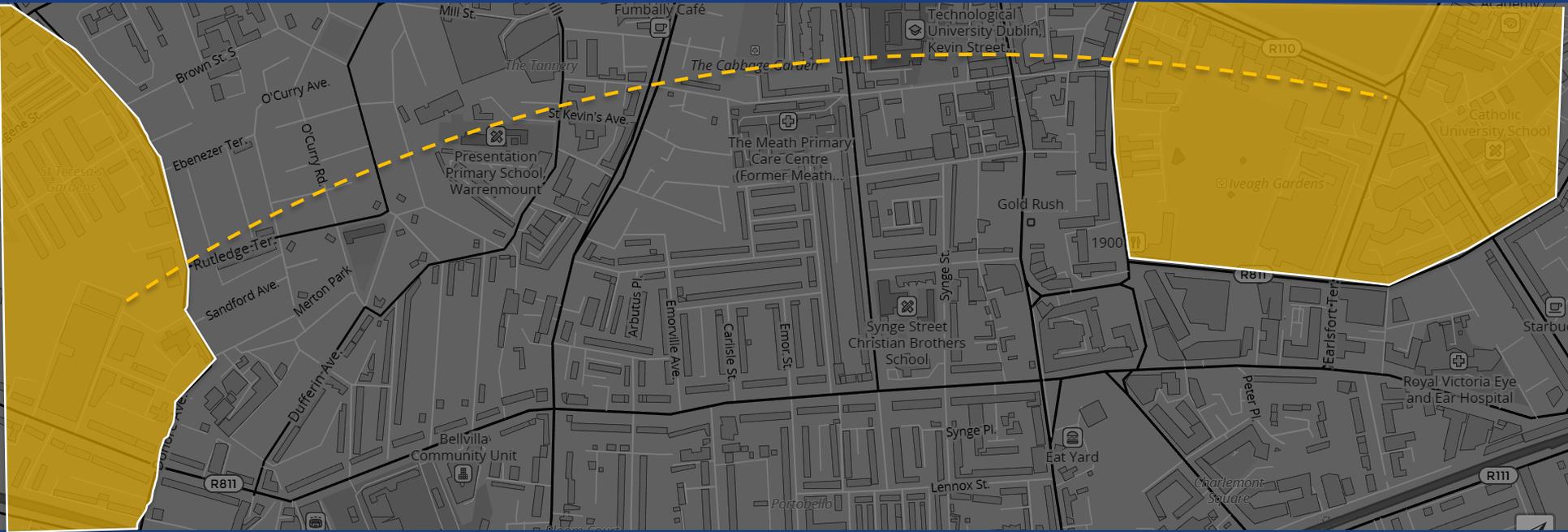


# Mobility service principles (var. by location and time)



door-to-door    block-to-block    area-to-area  
(grid?)

# Mobility service principles (var. by location and time)



door-to-door

block-to-block

area-to-area  
(grid?)

neighbourhood to  
neighbourhood





### Type 1

dense urban cores  
contested space  
priced/regulated parking



### Type 2

mid-density urban  
localised pressure  
incentivised parking



### Type 3

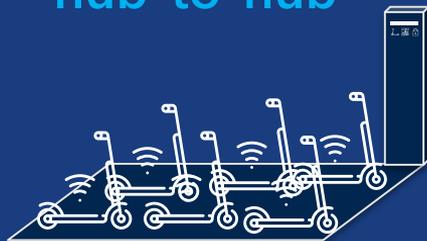
low density areas  
no pressure  
free pick-up, drop-off



## Type 1

dense urban cores  
contested space  
priced/regulated parking

**block-to-block**  
**hub-to-hub**



## Type 2

mid-density urban  
localised pressure  
incentivised parking

**hotspots**  
**free-floating**



## Type 3

low density areas  
no pressure  
free pick-up, drop-off

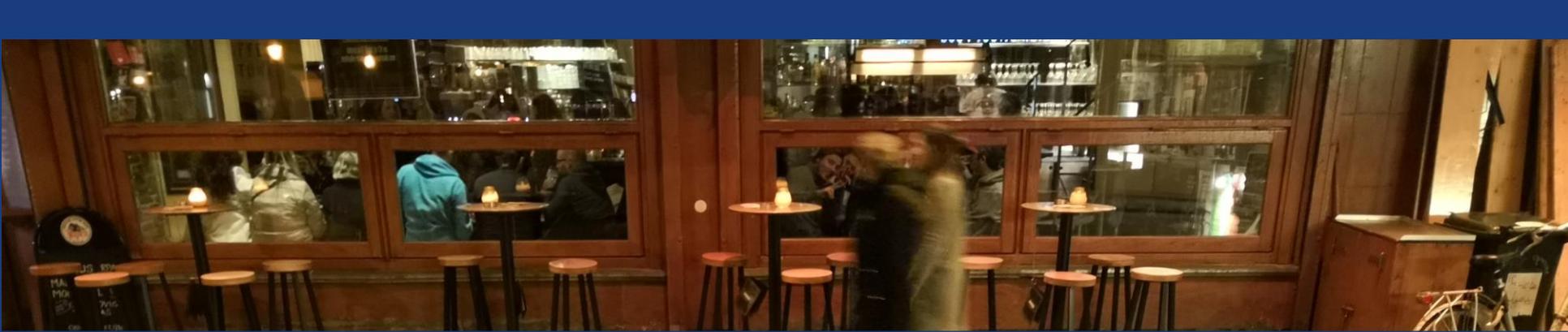
**full free-floating**





DZP576

GQT116



# 3. new infrastructure management practices



CURB

FACE



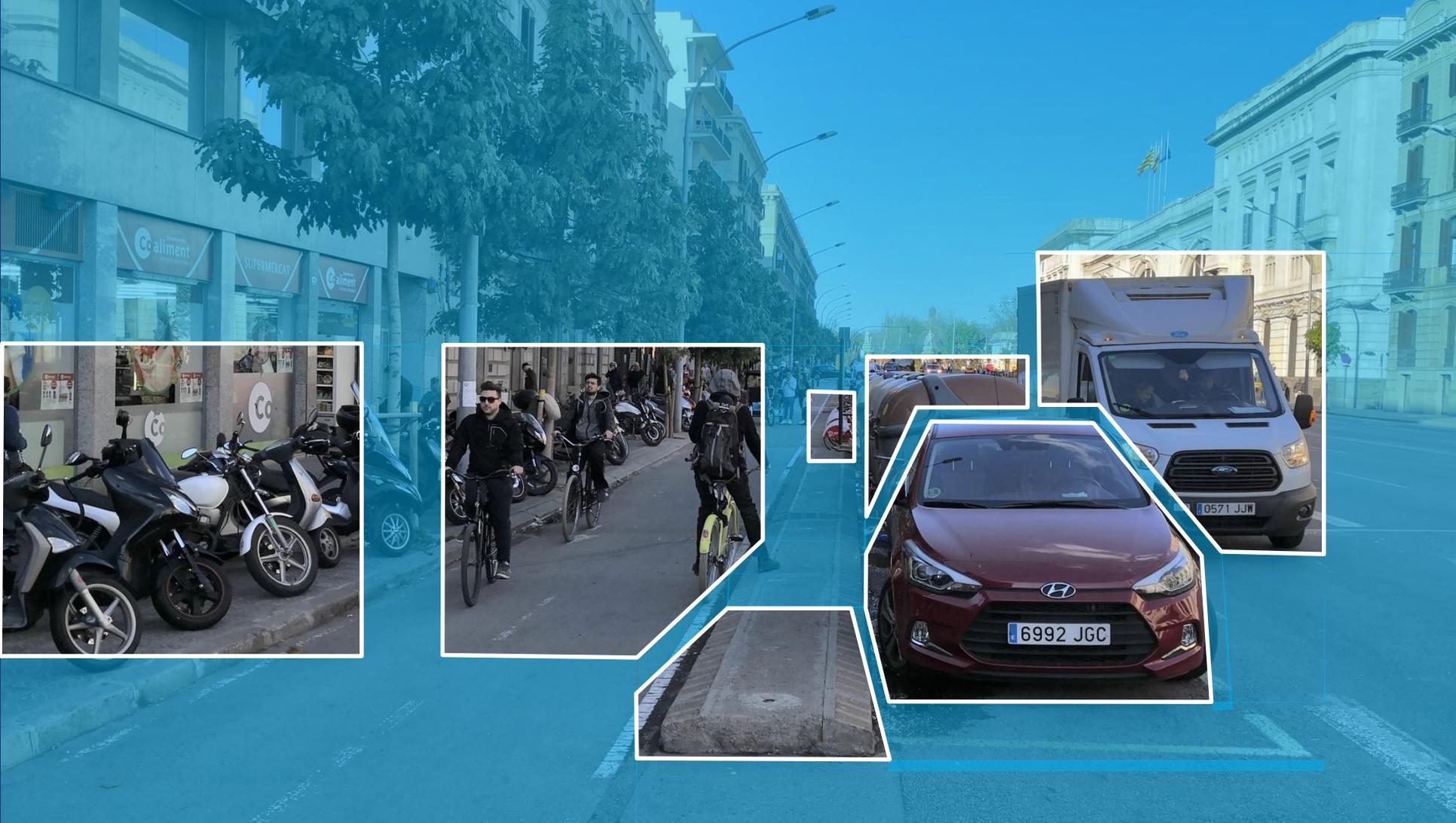
Coalimint  
SUPERMERCAT

SUPERMERCAT

Coalimint

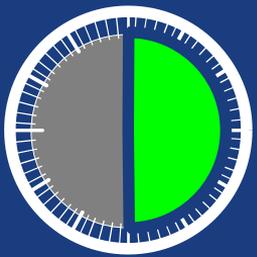
6992 JGC

0571 JJW



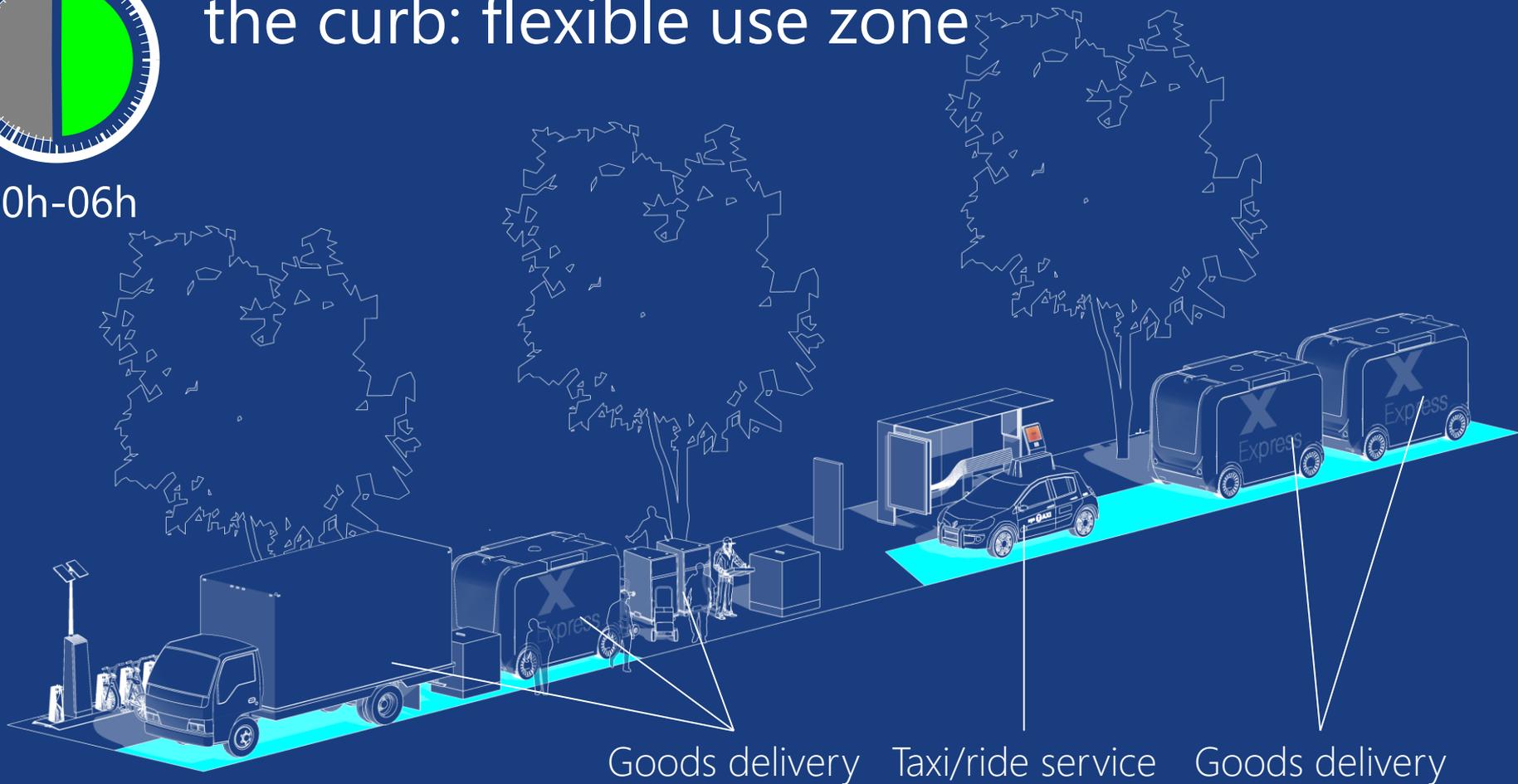
# the curb: vehicle storage





# the curb: flexible use zone

00h-06h



Goods delivery

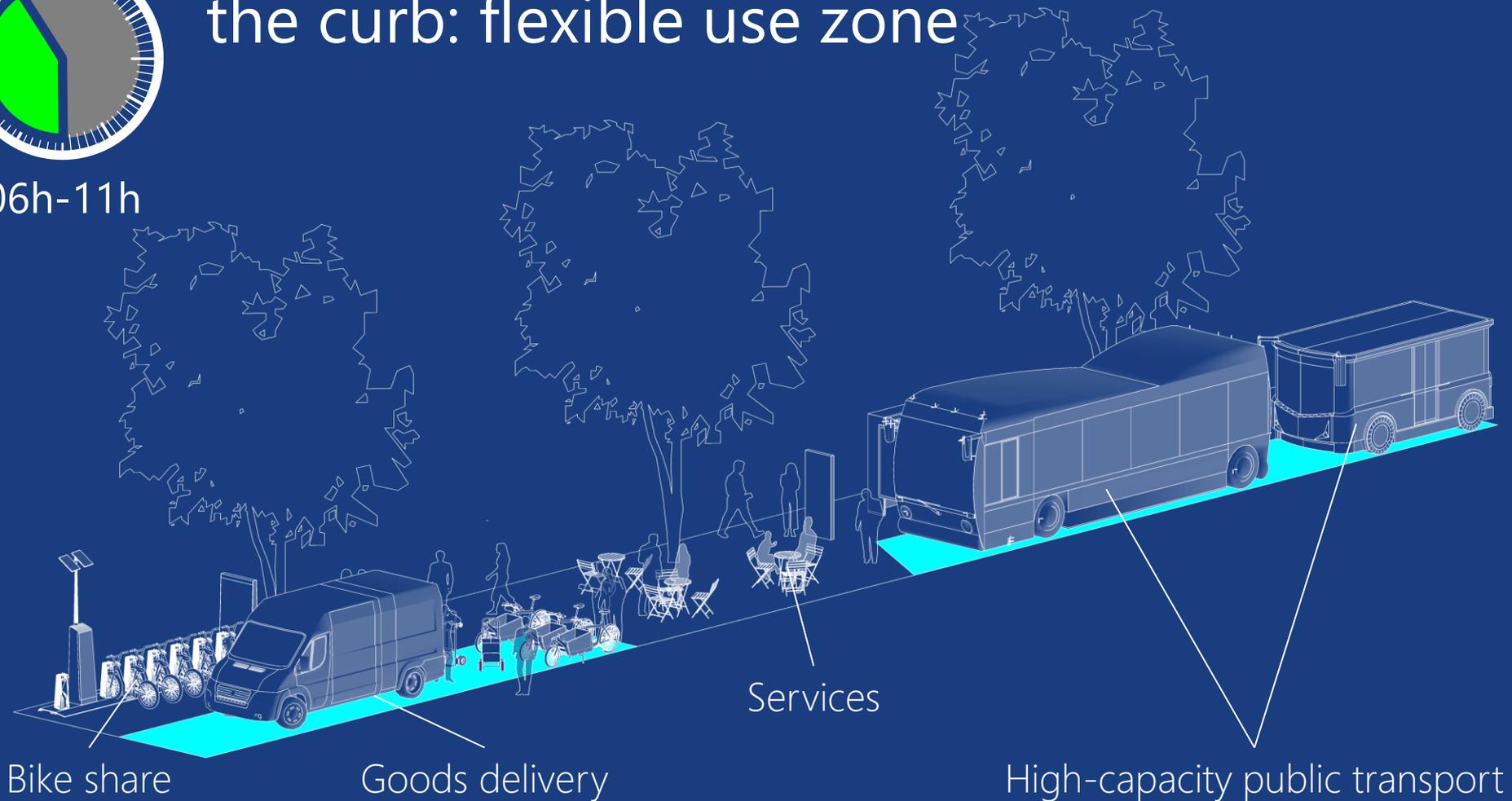
Taxi/ride service

Goods delivery



# the curb: flexible use zone

06h-11h



Bike share

Goods delivery

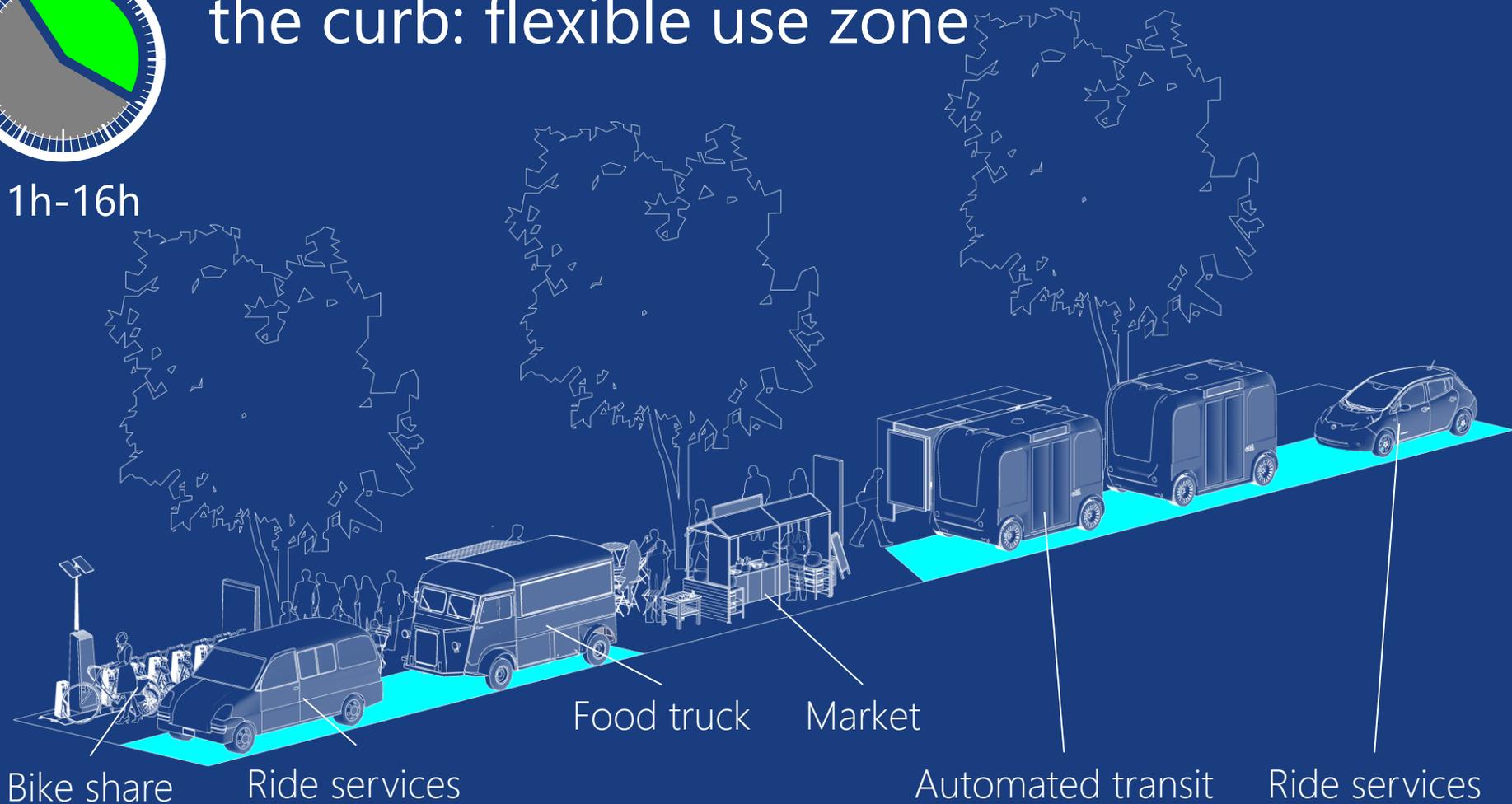
Services

High-capacity public transport



# the curb: flexible use zone

11h-16h



Bike share

Ride services

Food truck

Market

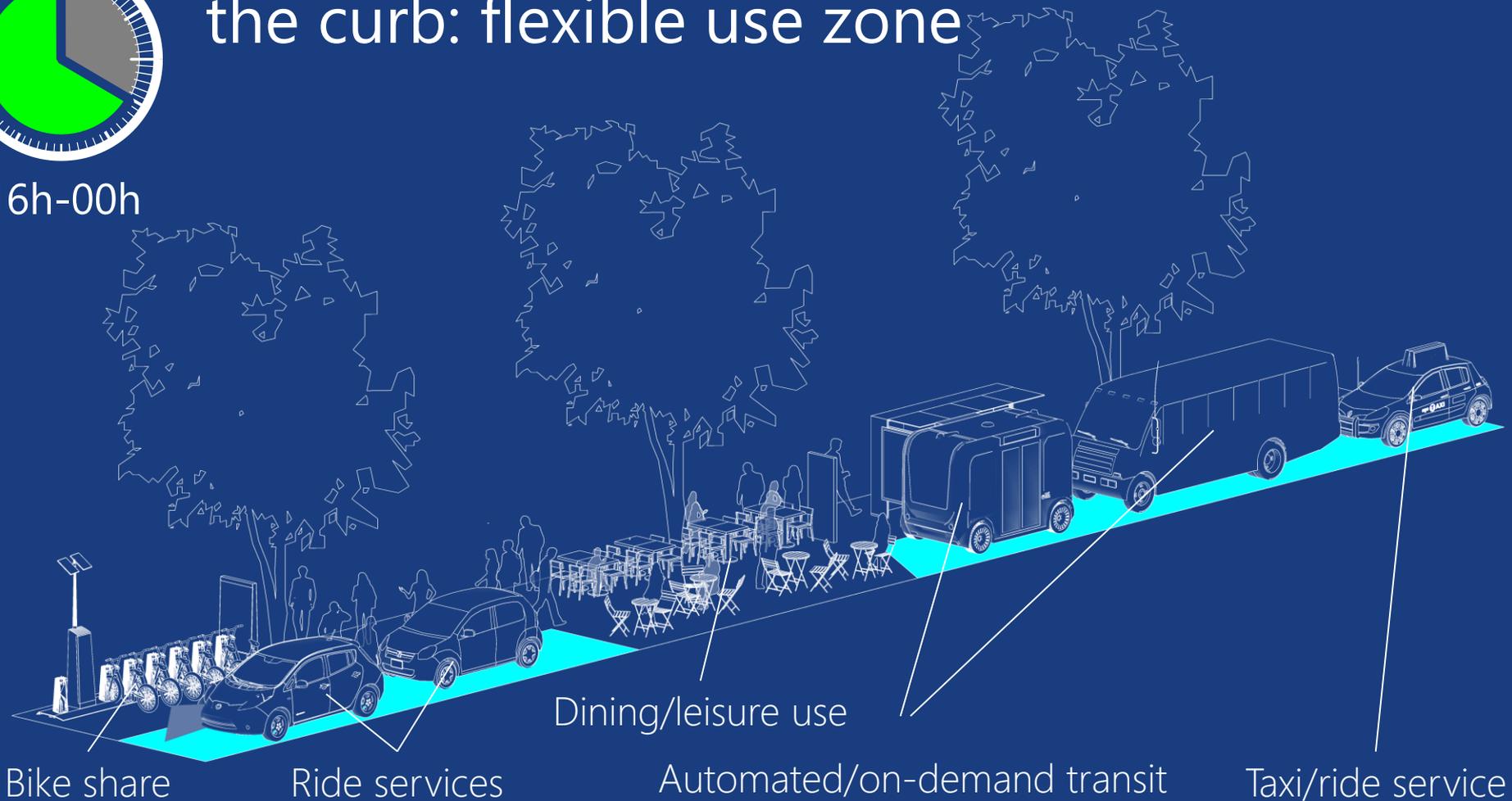
Automated transit

Ride services



# the curb: flexible use zone

16h-00h



# curb productivity index

number of pick-ups and drop-offs (PUDO)s  
*per*  
unit of linear curb distance  
*per*  
hour

[Why GitHub?](#) ▾[Business](#)[Explore](#) ▾[Marketplace](#)[Pricing](#) ▾

# CityOfLosAngeles / mobility-data-specification

[↔ Code](#)[🔔 Issues 28](#)[🔗 Pull requests 10](#)[📁 Projects 0](#)[📊 Insights](#)

```
1  {
2    "$id": "https://raw.githubusercontent.com/CityofLosAngeles/mobility-data-specification/master/provider/common.json",
3    "$schema": "http://json-schema.org/draft-06/schema#",
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13       ],
14       "pattern": "^0\\.2\\.\\.[0-9]+$"
15     },
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18       "type": "string",
19       "title": "A UUID 4 used to uniquely identify an object",
20       "default": "",
21       "examples": [
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# What will the next urban mobility blueprint look like?:

1. expanded mobility options
2. re-allocation/re-configuration of space
3. new infrastructure management practices

# Piazza Maggiore, Bologna, 1966



# Piazza Maggiore, Bologna, 2016





# Urban traffic environments (ANWB)

urban traffic env.	maximum permissible speed	normative veh. family for design	lighter vehicles (always permitted)	Heavier vehicles (excluded or guest)
<b>1</b> 	10 km/h	<b>A</b> pedestrians		<b>(B, C, D, E, F)</b>
<b>2</b> 	20 km/h	<b>B</b> rideables	<b>A</b>	<b>(C, D, E, F)</b>
<b>3</b> 	30 km/h	<b>C</b> light motor veh	<b>A, B</b>	<b>(D, E, F)</b>
<b>4</b> 	50 km/h	<b>D</b> car-like veh.	<b>A, B, C</b>	<b>(E, F)</b>

