



Miami-Dade

Bike Immersion Program

The Hague – Rotterdam – Houten – Utrecht



Contents

- Dutch Cycling Embassy
- Bike Immersion Program
- Weather
- Information about the bike rides
- Important information

DCE Public-Private Network



Sharing Dutch Cycling Knowledge



Tuesday

Day 1	The Hague
08:45 AM	Meet at Binnenhof Meeting room in Babylon Hotel
09:00	Welcome by Margot Daris, Dutch Cycling Embassy
09:05	Welcome to The Hague by Arjen Kapteijns, Alderman
09:15	Presentation National Cycling Policy by Nanja Piek, Dutch Ministry of Infrastructure and Water Management
09:45	Introduction to Cycling in the Netherlands and Dutch Cycling Story by Chris Bruntlett, Dutch Cycling Embassy
10:30	Short break
11:00	Presentation Cycling Policy in City of The Hague by Rinse Gorter, City of The Hague
11:45 PM	Q&A
12:00	Lunch
01:00	Familiarize with bikes
01:30	Dutch Cycling Tour The Hague (Approx. 15 kilometers/ 9 miles)
04:30	Freshen up at hotel
06:00	Dinner with Ministry of Infrastructure and Water Management

Wednesday



Day 2	Rotterdam
08:45 AM	Walk from hotel to train station
09:00	Train from The Hague to Rotterdam
09:30	Arrival in Rotterdam Walk to Timmerhuis (City Hall)
10:00	Welcome, recap of day 1
10:30	Presentation City of Rotterdam by Bart Christiaens
11:00	Presentation Network Planning by Dick van Veen
11:30	Presentation Multi-Modality by Matt Bearden, Arcadis
12:00 PM	Q&A
12:15	Walk to lunch location
12:30	Lunch
01:30	Familiarize with bikes
02:00	Dutch Cycling Tour Rotterdam (Approx. 15 kilometers / 9 miles)
04:30	End of program, train back to The Hague
05:30 / 07:00	Peer exchange drinks, organized by Miami-Dade TPO



Thursday

Day 3	Utrecht and Houten
07:45 AM	Walk from hotel to train station
08:00	Train from The Hague to Houten
09:00	Arrival in Houten, walk to City Hall
09:15	Welcome to Houten by Mayor Gilbert Isabella
09:30	Presentation on Creating livable, sustainable, and vibrant cities using mobility planning by Richard ter Avest, Goudappel
10:00	Presentation on Urban-rural connections by Christien Rodenburg, New Urban Mobility
10:30	Presentation on the Cycling Story of Houten by Arjen de Boer, City of Houten
11:00	Q&A
11:30	Dutch Cycling Tour Houten to Utrecht (Approx. 20 kilometers/ 12,5 miles)
01:00 PM	Lunch at Theehuis in Rhijnauwen
01:30	Continue Cycling Tour to Utrecht
03:00	Arrival House Modernes
03:30	Recap of Study Visit, Lessons Learned, Applying to Miami Context, Teije Gorris, GO-bility
04:30	Concluding Remarks, Next Steps
05:00	Walk to Train Station, Train back to The Hague



Train schedule

Departure	Arrival	🕒 0:27	📄 1
08:56	→ 09:23	🚫 0× transfers	
08:56	○ Den Haag Centraal ...	Track 1	
	NS Sprinter to Dordrecht 6 intermediate stops	 ✓	
09:23	○ Rotterdam Centraal ...	Track 6	
	Exit side left		

Departure	Arrival	🕒 1:17	📄 6
07:43	→ 09:00	🚫 0× transfers	
07:43	○ Den Haag Centraal ...	Track 6	
	NS Sprinter to Tiel 14 intermediate stops	 ✓	
09:00	○ Houten ...	Track 2	
	Exit side left		



Weather

Dinsdag 21 mei		12°/23°	7 mm		
Woensdag 22 mei		14°/18°	23 mm		
Donderdag 23 mei		13°/18°	0,9 mm		

Bike rides

- We split up in 3 groups during the bike rides.
- There is at least one guide cycling in the front and one in the back.
- Show with your hands which direction you're going to.
- Do not run red lights, the group will wait for you on the other side of the intersection.
- Do not use your phone while on the bike (fine is €160).
- Please let us know if you feel uncomfortable, we will find a solution together.

Important information

- Is everyone okay with taking photos and videos?
- All presentations will be shared with the delegation afterwards.
- The public transportation cards are already topped up for our train travel.
- It is recommended to bring a bottle of water, sunscreen, a cap, and sunglasses.

Cycling for everyone.



info@dutchcycling.nl



dutchcycling.nl





Cycling for Everyone.

CHRIS BRUNTLETT
INT. RELATIONS MANAGER
BIKE IMMERSION PROGRAM
TUESDAY, MAY 21, 2024



Dutch Cycling: For a Cycle-Friendly World



The Dutch Cycling Embassy is a vast network of public and private organizations from the Netherlands who wish to share their knowledge and expertise to help cities experience the many advantages of cycling.



Experience the Dutch cycling culture first-hand



Think about best possible solutions and achievable results



Act by applying these solutions to your local context



Learn more about effective policies and best practices

upwzy

RADARXENSE

Gemeente Haarlem

3PM

Goudappel MOBILITY MOVES US

IMOTO solutions for automotive & tech

BYCS

PROVINCIE UTRECHT

STREET STUFF!

ARUP

ABUS Security Tech Germany

ColorFalt Solutions

R.A. Planning

STUDIO BEREIKBAAR

ProRail

Gemeente Utrecht

Roelofs

wobs WARM ON BIKES

BICYCLE DUTCH

SPORT UTRECHT

City of Amsterdam

Bike minded

MultiSensors

new urban mobility

nieuw & verbeterd

ARTGINEERING

Geert Kloppenburg

Panteia Research to Progress

Cyclomotions

ABEL sensors

HOD

WHEELYLIFT

hogeschool Windesheim Dichter bij jou

TRACEFY KEEP YOUR BIKE CLOSE

Provincie Noord-Brabant

DONKEY REPUBLIC

Breda University OF APPLIED SCIENCES

triple Joy

Den Haag

huka

dickvanveen STREET DESIGN PUBLIC SPACE

Fietsersbond

TILER

GoDutchCycling

ARMADA mobility

ARCADIS

Fulpra

Provincie Noord-Holland

TNL

fietsplatform

MOBYCON

MOBILITY LABEL

DOLLY-BAKFIETS

Movares consultants & engineers

Een nieuwe kijk

FOLKERSMA ROUTING EN SICHT

LUMIGUIDE SMART MOBILITY SOLUTIONS FOR SMART CITIES

FALCO

VelopA LET'S GO OUTSIDE

Gemeente Rotterdam

CARGO CYCLING

SUSTAINABLE SOLUTIONS

MOBY

vconsyst

Horizons

FIETSVLONDERS.NL

Tour de Force

DECISIO ECONOMIC RESEARCH

POSSEHL SPECIAL BANK

SIEMENS

GROENE METROPOOL ARNHEM NIJMEGEN

Royal HaskoningDHV Enhancing Society Together

SUSTAINABLE SOLUTIONS

MOBY

vconsyst

Gazelle

ABELLEISURE Meer dan routes!

Loendersloot international

POSSEHL SPECIAL BANK

TU Delft

humankind

bike box

Fiets Meister

Swapfiets

ColVidro

ARGALEO

4wieler

Fletsdiensten.nl

Cargoroo e-cargo bike sharing

humankind

COLOURED ASPHALT

vanraam Let's all cycle

Rijkswaterstaat Ministry of Infrastructure and Water Management

kennisplatform CROW

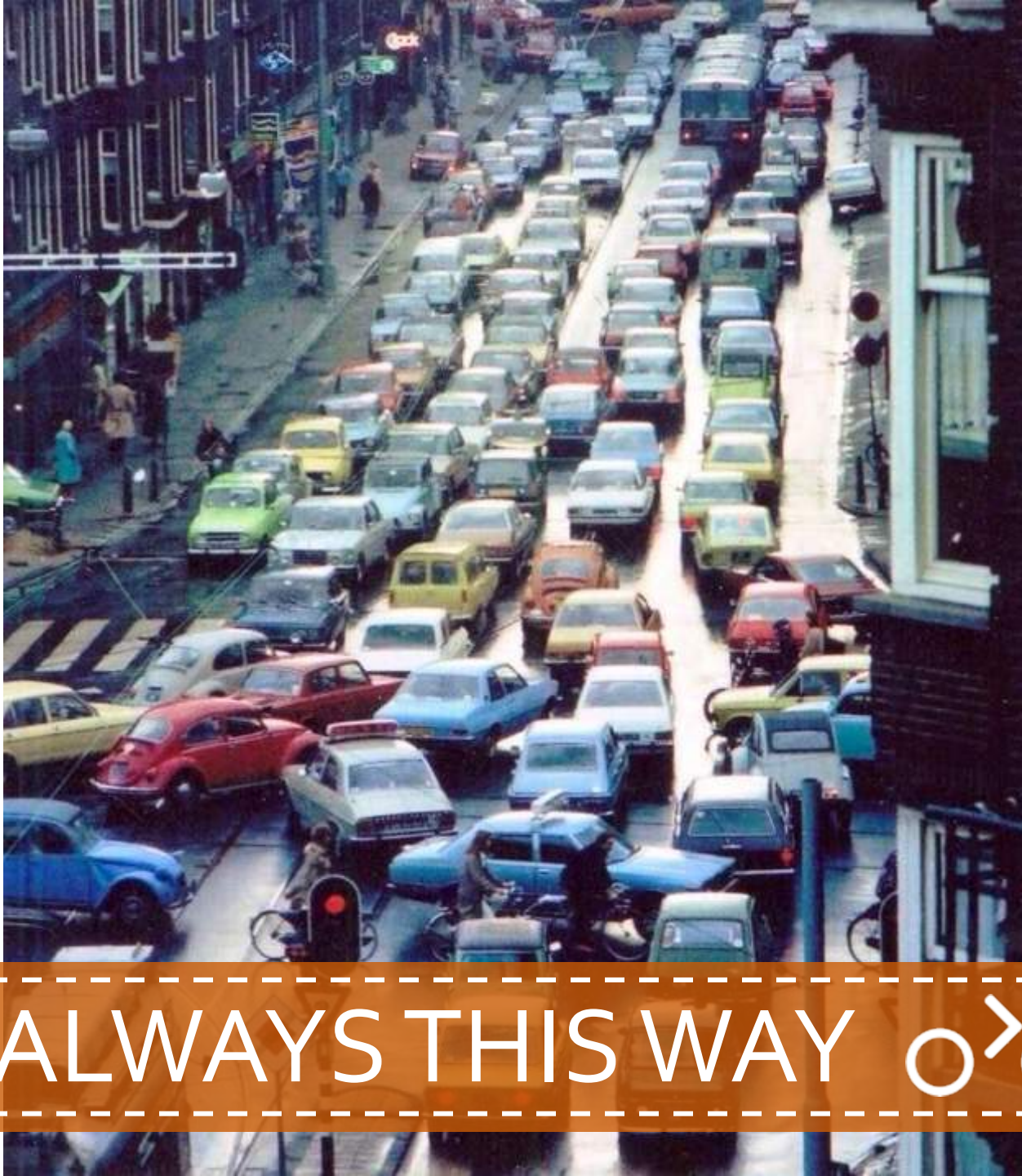
Zwolle

FIETSHANGAR COLLECTIVE URBAN BIKE STATIONS





THE VIEW FROM 'FIETSPARADIJS' 



DUTCH
CYCLING
EMBASSY

IT WASN'T ALWAYS THIS WAY 

Crisis as a Turning Point



- o>o In the Netherlands, a pair of converging crises in the 1970s created a systematic approach to safer, more sustainable, equitable, and efficient street design
- o>o In 1972, Stop de Kindermoord ("Stop Child Murder") formed in reaction to a road safety crisis that was killing 3,000 people per year, including 450 children
- o>o For six weeks in 1973, the OPEC oil embargo resulted in an abrupt gasoline shortage and 'Car Free Sundays' policy, doubling the sales of bicycles

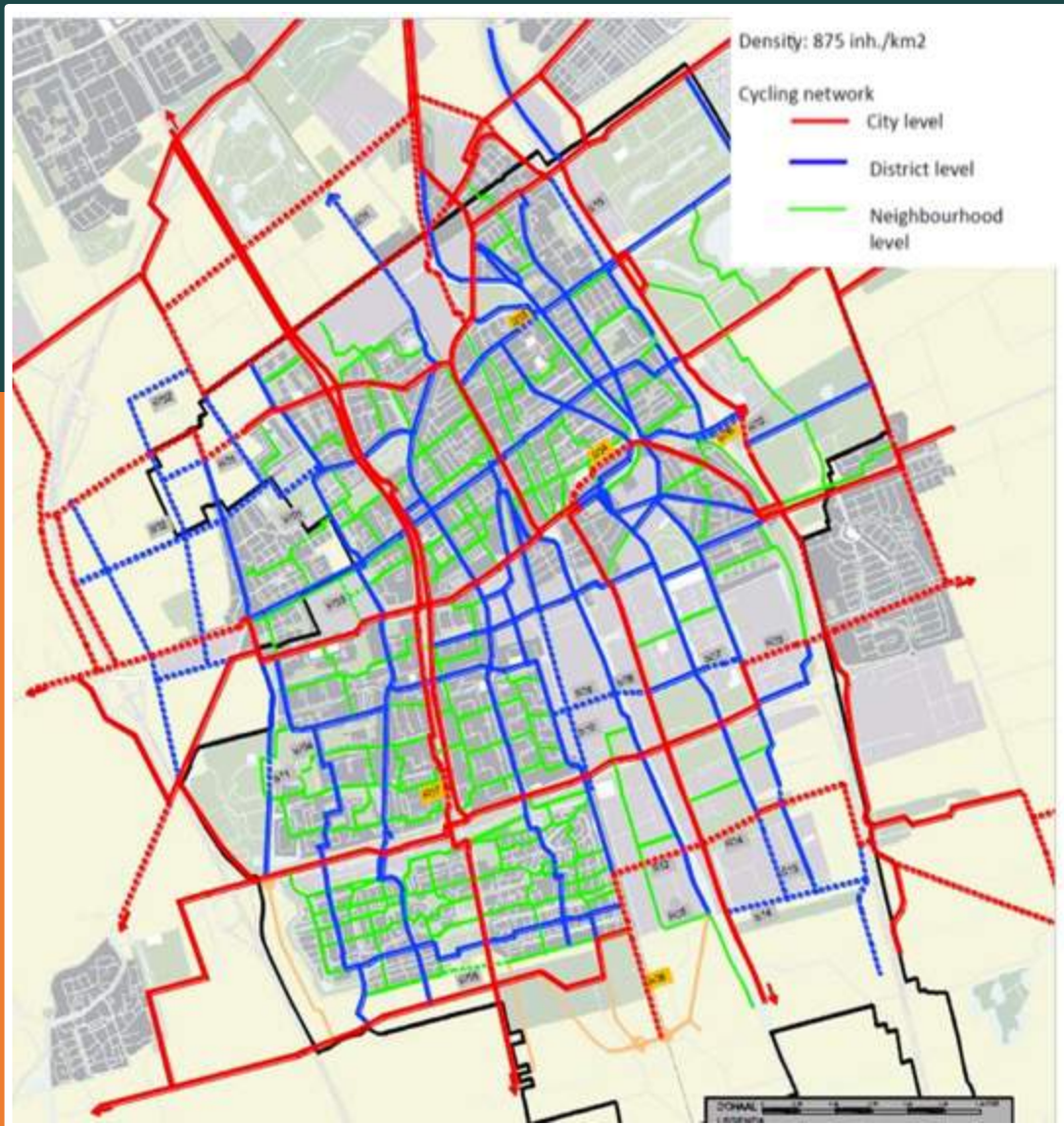
Learning From Their Mistakes



- o>o High-profile failure of demonstration route in Tilburg in 1977: inconsistent design; inconvenient route selection which relegated cyclists to back streets
- o>o Second demonstration route failure in The Hague in 1978: lack of connectivity and consultation led to low usage; huge backlash with local business owners
- o>o The lessons learned from these two failed experiments were applied to the highly successful 1979 Delft Cycle Plan



Think at the Network Level



- >○ Rather than focusing on a single route, in 1979, Delft officials decided to implement a city-wide cycle network
- >○ After consulting with 4,700 households, three networks (of varying grid sizes) were planned; each with a specific journey type, length, and user in mind
- >○ Completed in 1987; lessons learned inform the CROW Manual network design principles of directness, safety, comfort, cohesion, and attractiveness

Don't Ignore the Weakest Link



- o>o A network is only as good as its weakest link: often at the intersection where the majority of collisions occur and the cycling infrastructure can “disappear”
- o>o Signalized and unsignalized junctions are physically protected and designed to reduce speeds and raise awareness, increasing safety for all road users
- o>o Raised and continuous cycle path at side streets keeps vulnerable users in a raised, seamless and prioritized space



Road categorization



1. National /
Regional through routes
Speed limits 130/120/100/80km/h
(80/75/62/50mph)

No cycling

2. Local distributing –
collector roads
Speed limits 50km/h (31mph)
Physical or Visible separation

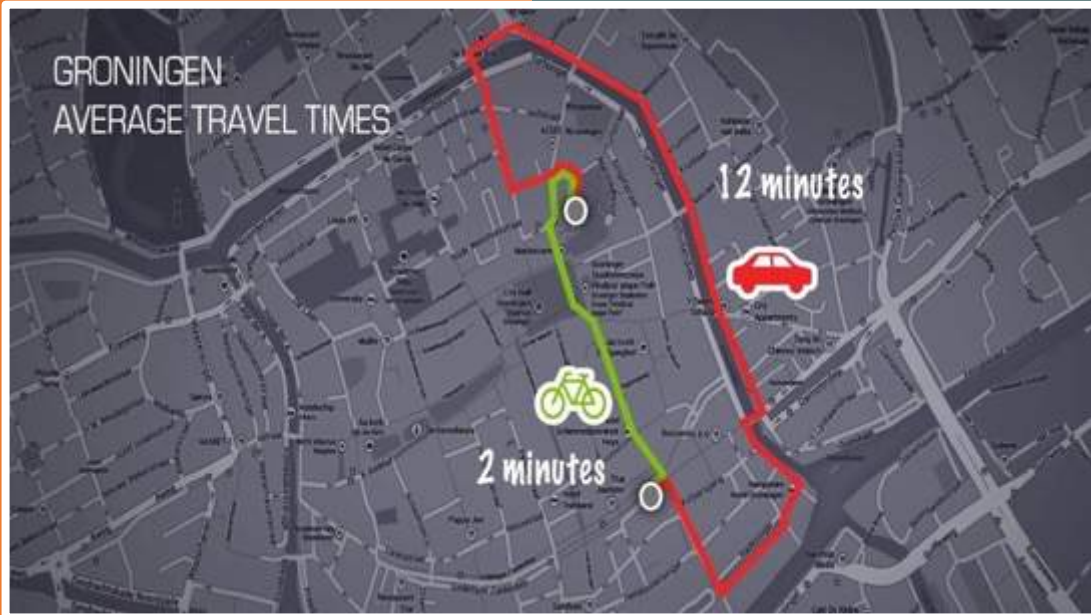
3. Access streets / Places
Speed limit 30km/h (18mph)
No separation needed



Every Mobility Plan Needs a Car Plan



- >○ Effective traffic circulation—ie. reducing the volume and access of motor vehicles—can form an easy and effective part of a city’s cycling network
- >○ Dutch cities create a “hierarchy of roads”—differentiating between local and through traffic—diverting cars from economic and residential areas
- >○ Physical methods are used to slow motorists down such as road narrowing, chicanes, texture, and speed tables



Use Bikes to Feed Transit



- >○ Creating secure bike infrastructure and parking in and around public transport hubs can capture the synergy between these two sustainable transport modes
- >○ Cycling enlarges the catchment area of a stop or station, feeding more passengers into the transit system
- >○ Half of all train trips in the Netherlands start with a bike ride; one quarter of all kilometers cycled are to/from a station

Extend the Cycling Range

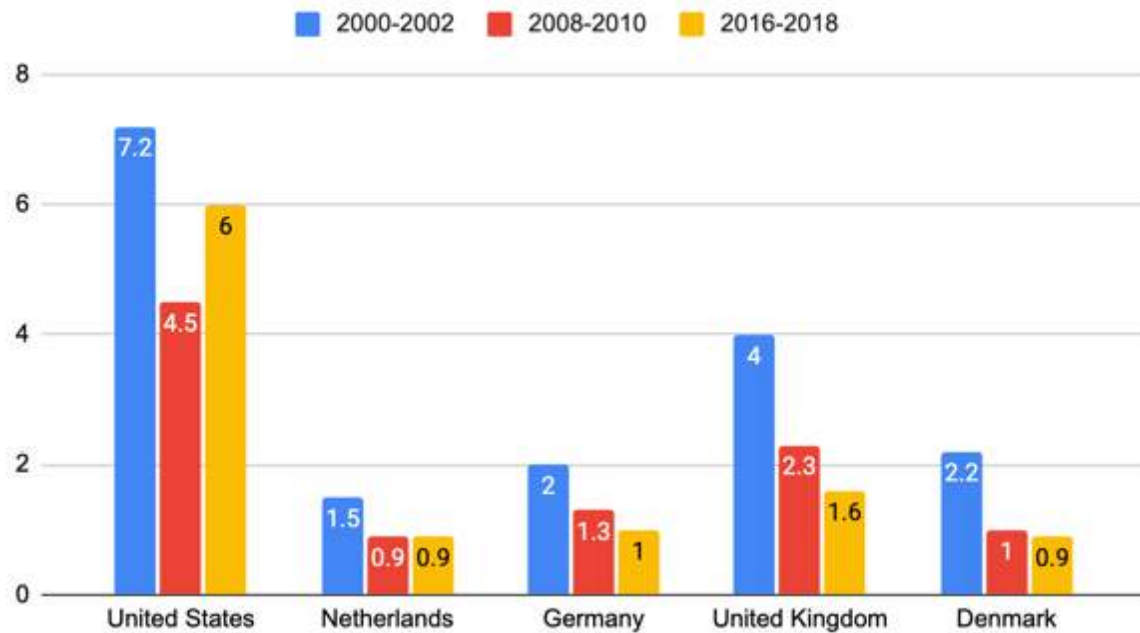


- o>o Direct and comfortable cycling routes—in combination with the e-bike—can encourage people to cycle longer distances and reduce car congestion
- o>o Provinces and regions across the Netherlands are connecting residential, commercial, and educational hubs with wide, smooth “fast cycling routes”
- o>o E-bike users travel 64% further than ‘normal’ bike users; average e-bike trip journey length 5.9 km (versus 3.6 km)

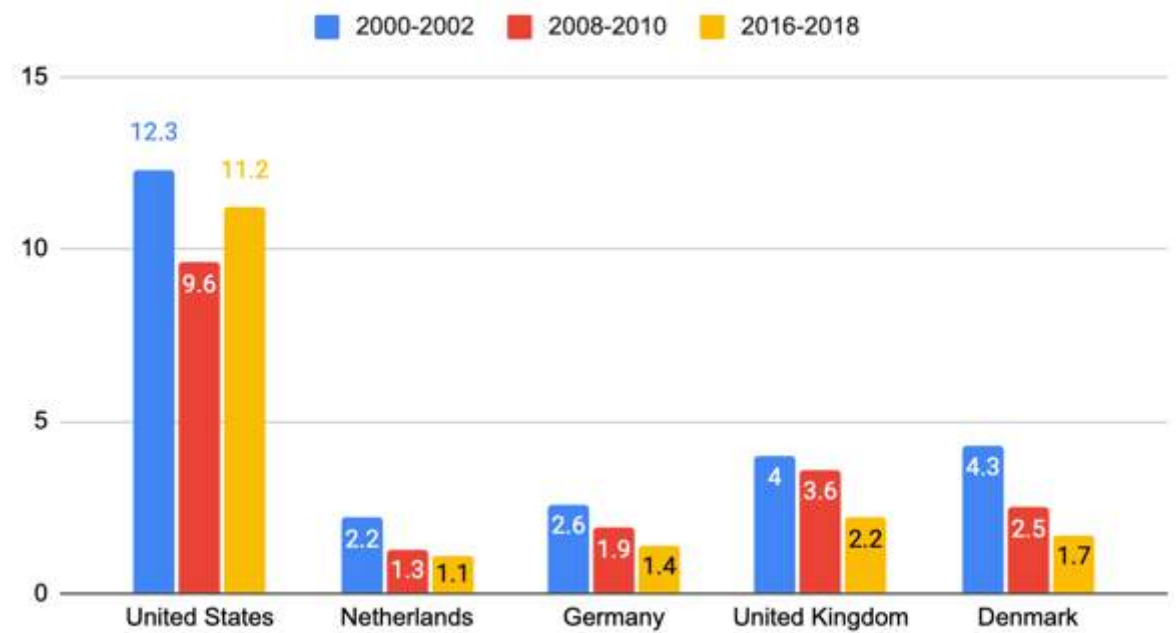
The Safest Streets in the World

“If the U.S had achieved the same improvements in traffic safety as the Netherlands [since 1970], 22,000 fewer Americans would have died on our roads in 2015.” – Vox

Cyclist fatality rate per 100 million kilometres biked



Pedestrian fatality rate per 100 million kilometres walked



Obese? Not us! Why the Netherlands is becoming the skinniest EU country

Every EU country will be more obese by 2030 - except one. DW's Conor Dillon went to the Netherlands to find out how the Dutch keep eating french fries, mayo and frikandels without getting fat.



“A 2022 IPSOS STUDY FOUND PEOPLE FROM THE NETHERLANDS ARE THE MOST PHYSICALLY ACTIVE ON EARTH; GETTING AN AVERAGE OF 12.8 HOURS OF EXERCISE PER WEEK.”

“CYCLING LEVELS IN THE NETHERLANDS ARE ESTIMATED BY TO PREVENT 6,500 PREMATURE DEATHS PER YEAR, SAVING THEIR ECONOMY €19 BILLION; EQUAL TO 3% OF THEIR GDP.”





Surprise: Bike-friendly Netherlands named best place in the world to be a driver



“IF YOU DESIGN A CITY FOR CARS, IT FAILS FOR EVERYONE, INCLUDING DRIVERS. IF YOU DESIGN A MULTI-MODAL CITY THAT PRIORITIZES WALKING, BIKING, AND PUBLIC TRANSPORT, IT WORKS FOR EVERYONE, INCLUDING DRIVERS.” - BRENT TODERIAN



The Kid-Friendly City



- > Two-thirds of all Dutch children walk or cycle to school; for secondary school students, that number is closer to 75%
- > The 12-17 age group cycles more than any other age group (60% of ALL trips)
- > UNICEF regularly ranks Dutch children among the happiest in the world; specifically citing their unrivalled levels of physical activity, freedom, autonomy
- > Also boast lowest levels of childhood obesity and depression in the EU

The Caregiving City



- o>o Reverse gender gap: mode share for women is 28% (versus 26% for men)
- o>o Women are more likely to make shorter, multi-purpose, non-car trips
- o>o Planners often fail to consider care trips (ie. dropping kids at school) and trip-chaining (ie. proceeding to the office); because they don't have the data
- o>o Childhood independence also relieves burden of supervised transport, which mostly falls on female shoulders

The Accessible City



- o>o Inclusive infrastructure means 16% of all trips made by physically impaired people in the Netherlands are pedal powered; often on adapted vehicles (electric tricycles or hand cycles)
- o>o For those who can't cycle, wide (at least 225 cm) space welcomes other modes; ie. (motorized or manual) wheelchairs
- o>o Details matter: angled (forgiving) curbs, plentiful curb cuts, smooth asphalt, visual cues/edges, gentle gradients

The Prosperous City



- o>o Half of all train journeys in the country begin with a bicycle ride to the station
- o>o 81% of the population lives within 7.5 km—comfortable cycling distance—of a train station; providing more equitable access to housing, employment, education, healthcare opportunities
- o>o Liberates many households from the economic burden of car ownership and maintenance, which disproportionately affects those in lower income bracket



The Aging City



- >○ Reverse age gap: 65-75 age group has a higher share than all adult categories
- >○ From 2010 to 2017, Dutch seniors (75 and over) cycled 33% more kilometers
- >○ Roughly 80% of e-bikes sold in the Netherlands are to people aged 50+
- >○ “An elderly person who cycles covers an area of 14 km in their daily life. The non-cyclist doesn't travel further than 10 km.” – Utrecht University study

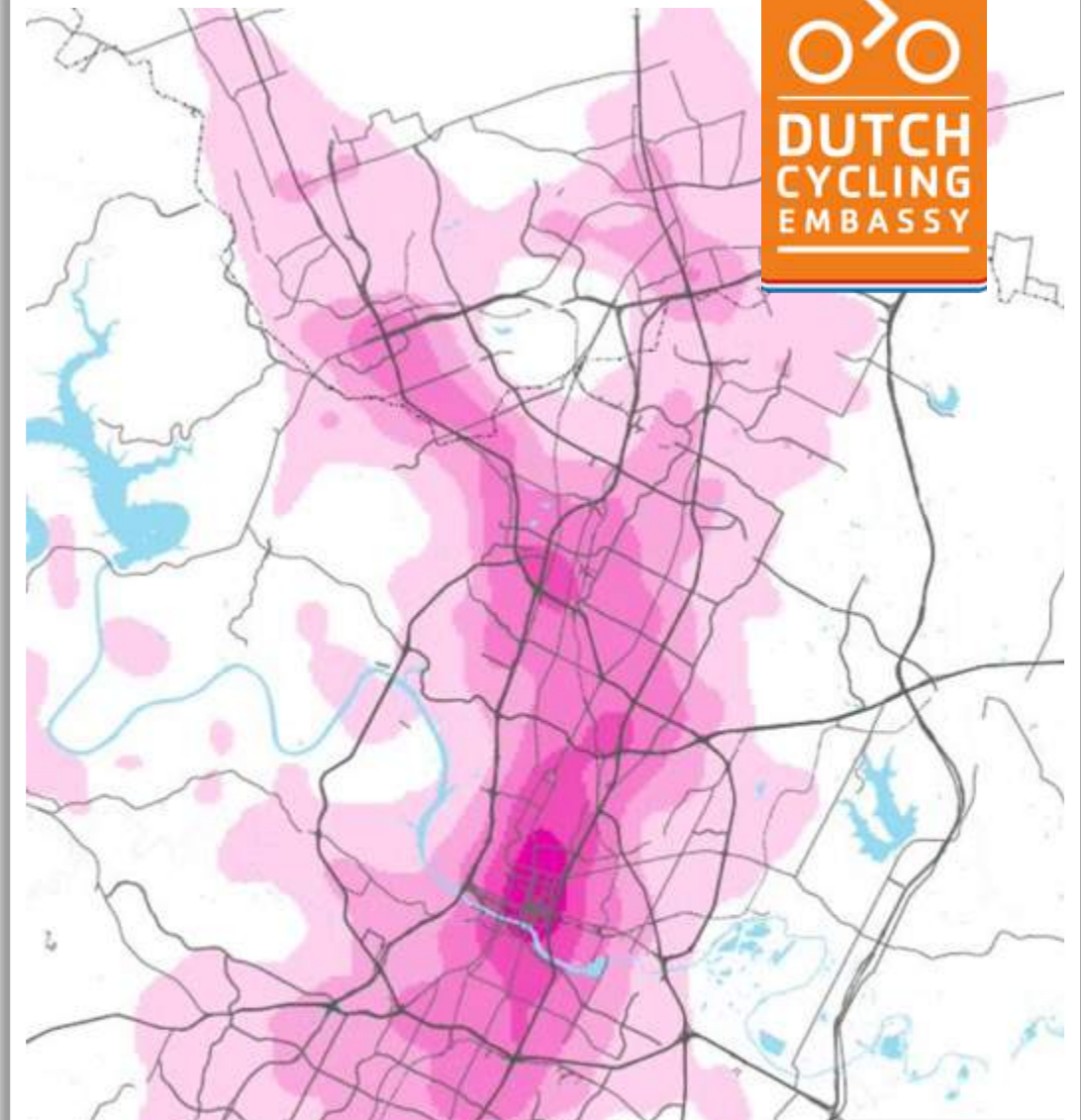
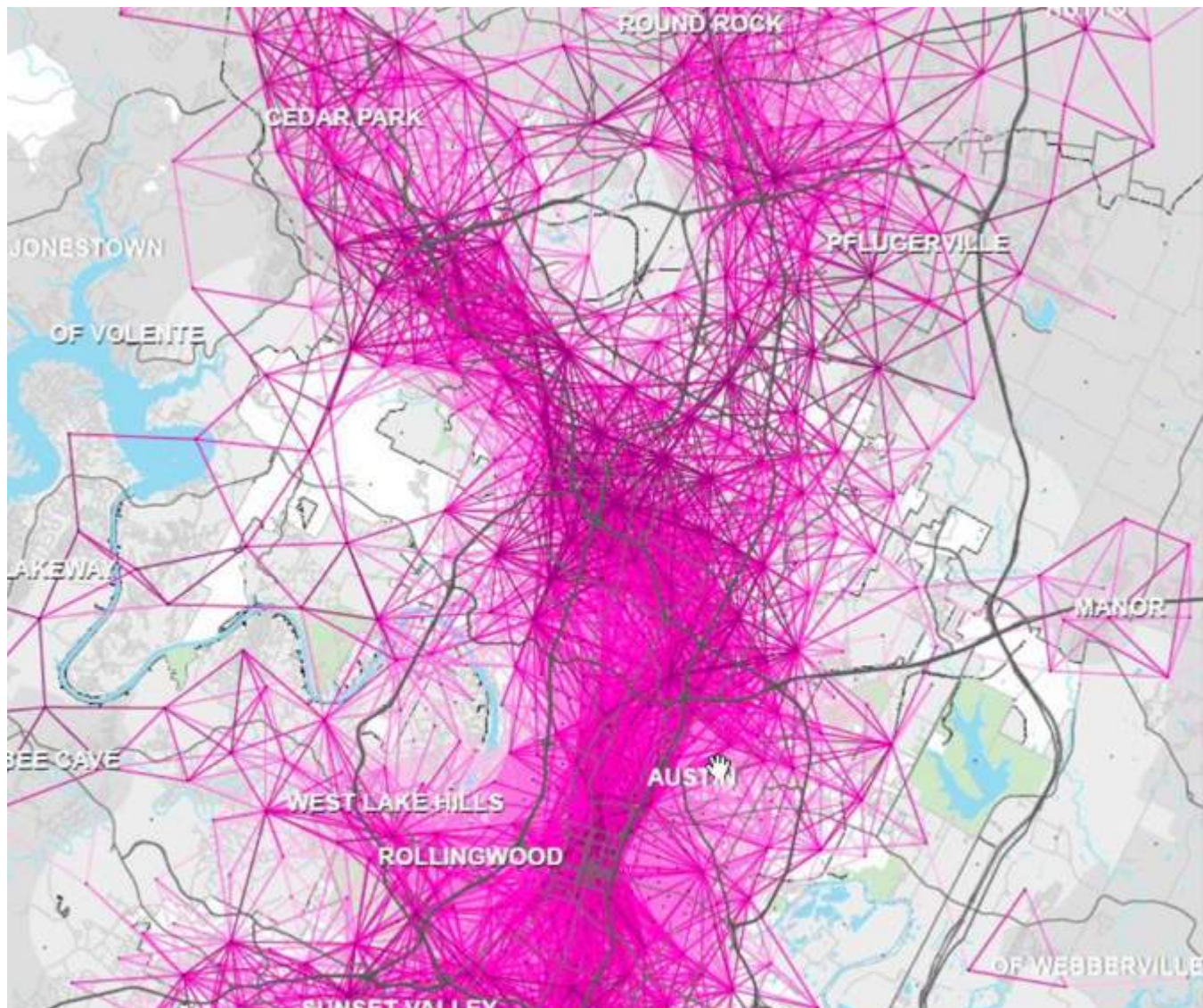




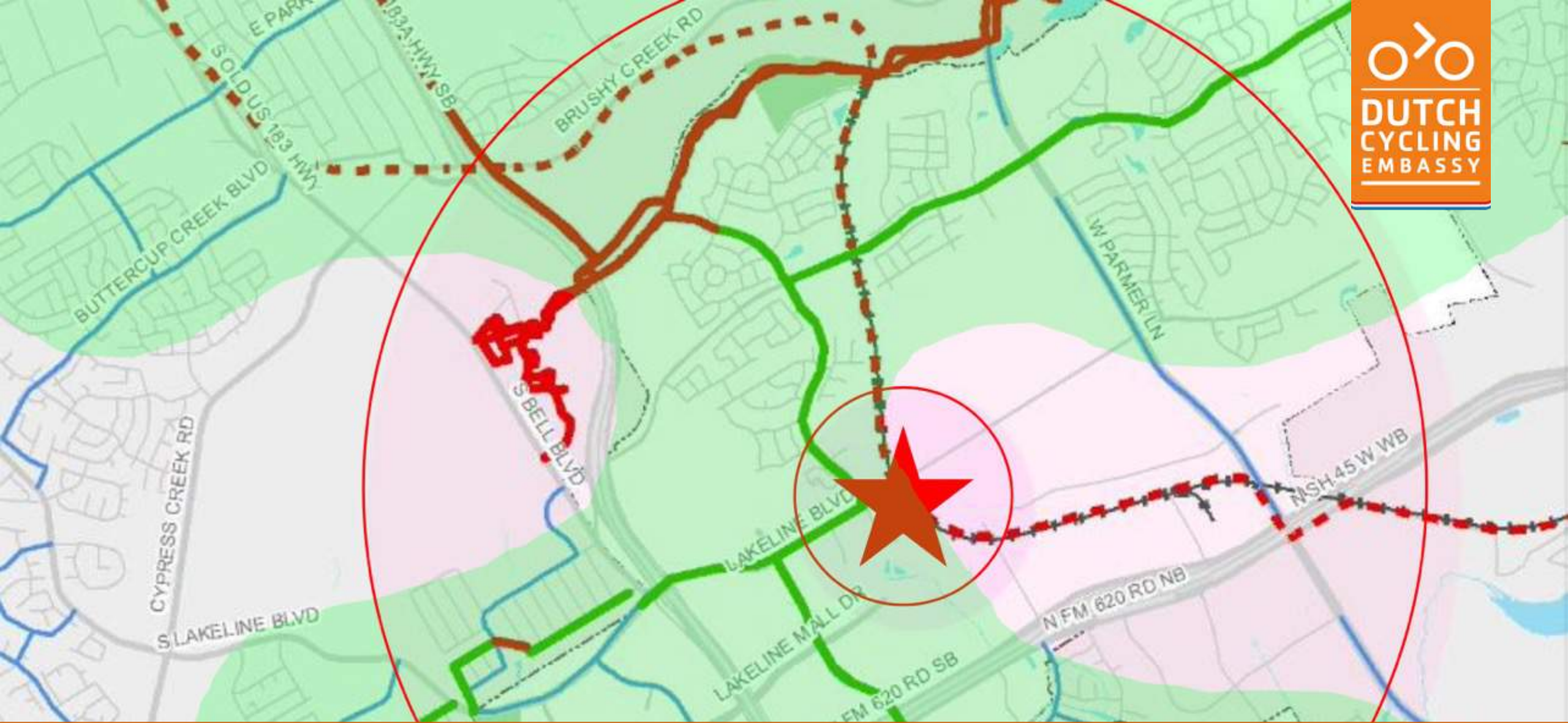


	Greater AMS	Greater Austin
Size	4,152 sq. km.	11,085 sq. km.
Population	2.4 million	2.4 million
Density	578/sq. km.	217/sq. km.
Car Mode	20%	85%
Active Mode	61%	4%
PT Mode	19%	11%





#1: INVEST WHERE THE SHORT TRIPS ARE 



#2: USE CYCLING TO FEED TRANSIT 

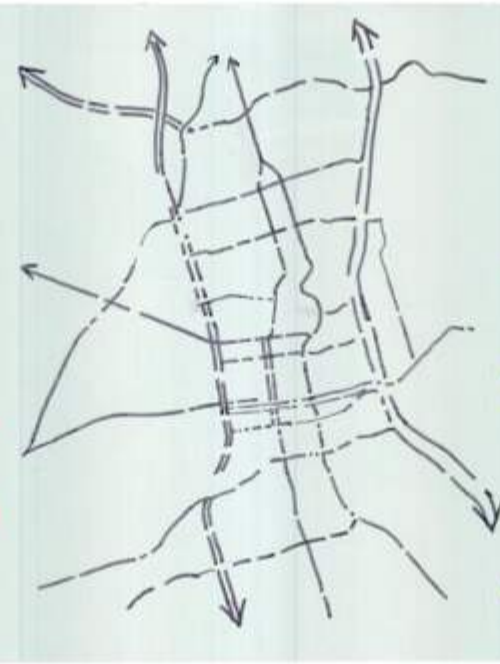


2012 Think Bike

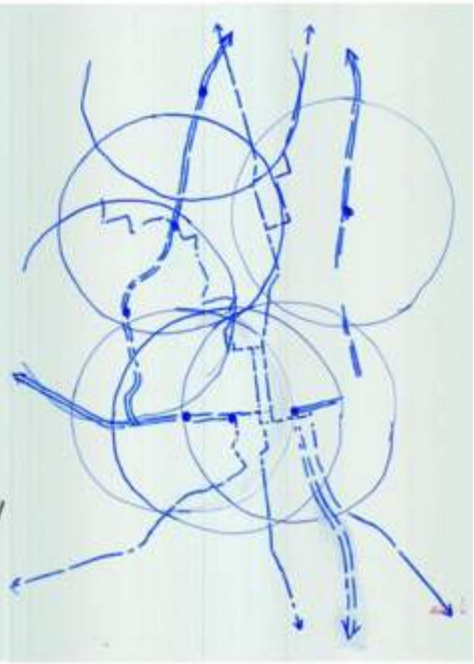
"You can't plan for bikes without planning for all modes"



Bike Network



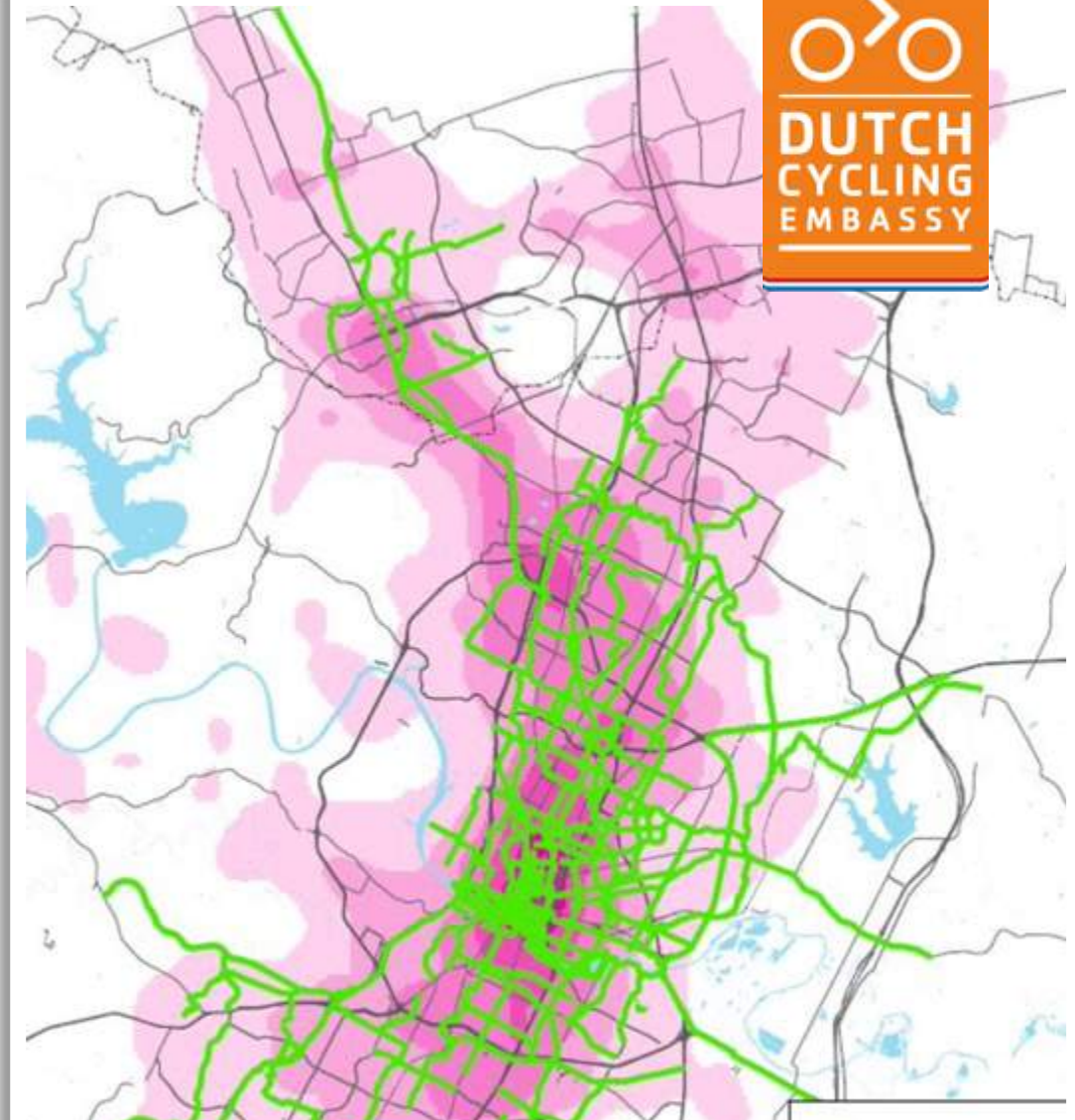
Car Network



Transit Network

#3: YOU MUST PLAN FOR ALL MODES 

2014 AUSTIN BICYCLE PLAN



2014 BICYCLE MASTER PLAN





A Dutch-Inspired Success Story



- o>o Since 2011, Austin has built 380 km of AAA (“all ages and abilities”) bikeways and 16 protected intersections across the city
- o>o Their goal is 650 km of red-tinted, Dutch-inspired infrastructure by 2025, converting 15% of short car trips (less than 5 km)—now half of all journeys—to bicycle
- o>o Funded by active travel bonds \$137 million approved by 59% of voters in 2016, and \$460 million approved by 67% in 2020



Cycling for Everyone.

EMAIL INFO@DUTCHCYCLING.NL
WEBSITE WWW.DUTCHCYCLING.NL



City of The Hague



Den Haag

Rinse Gorter

Senior policy advisor on cycling and shared mobility



Miami-Dade, may 2024



Today

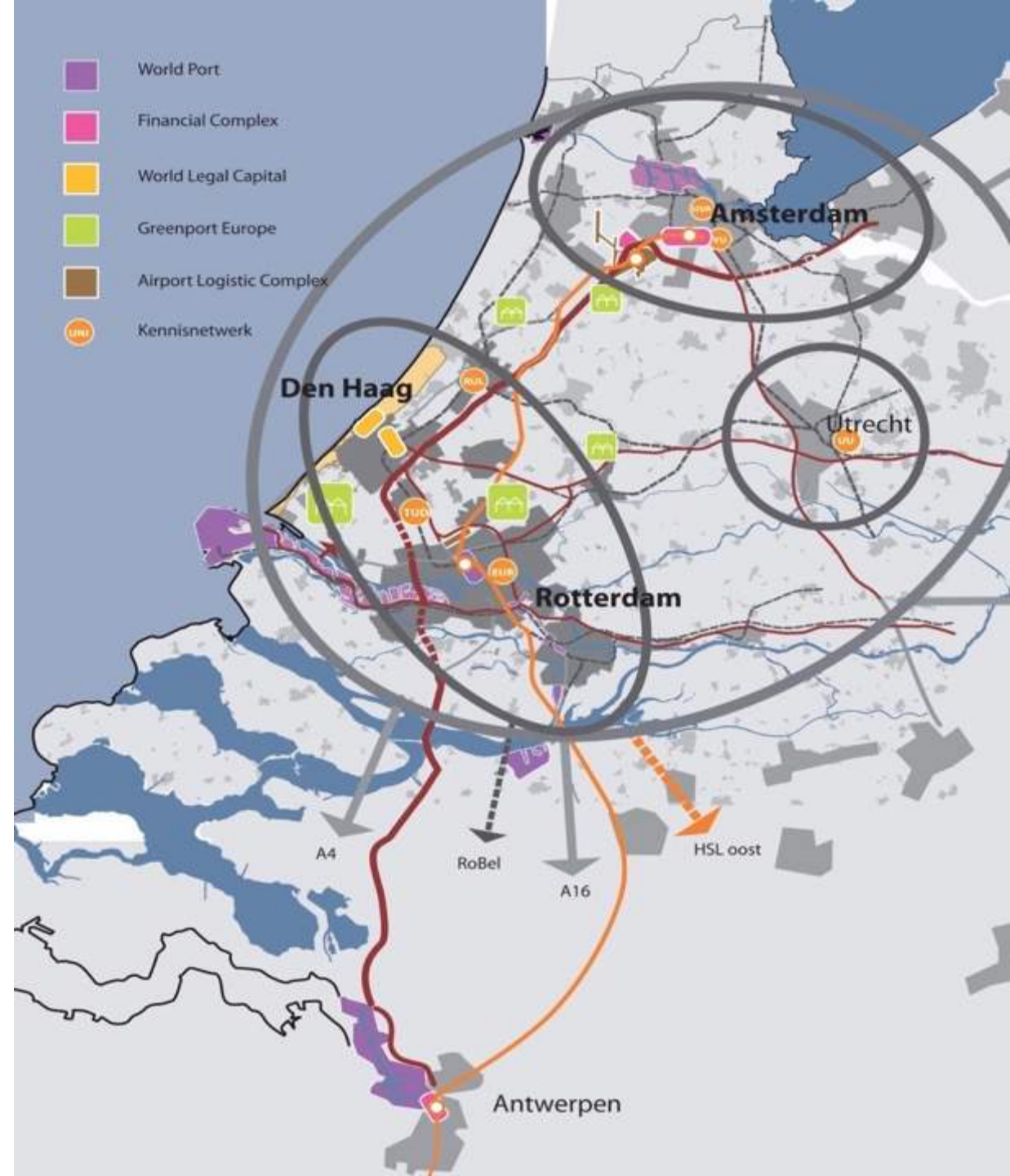
- The Hague
- Cycling Strategy
- Examples



Randstad

Region with

- The Hague
- Rotterdam
- Amsterdam
- Utrecht





2nd UN-city:
ICC, ICJ, OPCW

International City of Peace and Justice

Seat of National Government

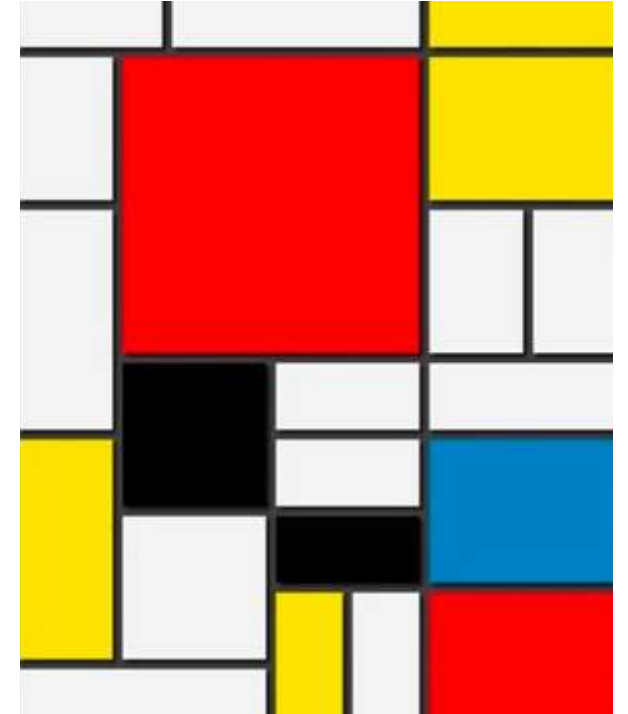




11 km
Sandbeach

Scheveningen and
Kijkduin

Vermeer, Escher & Mondriaan



Royal Family



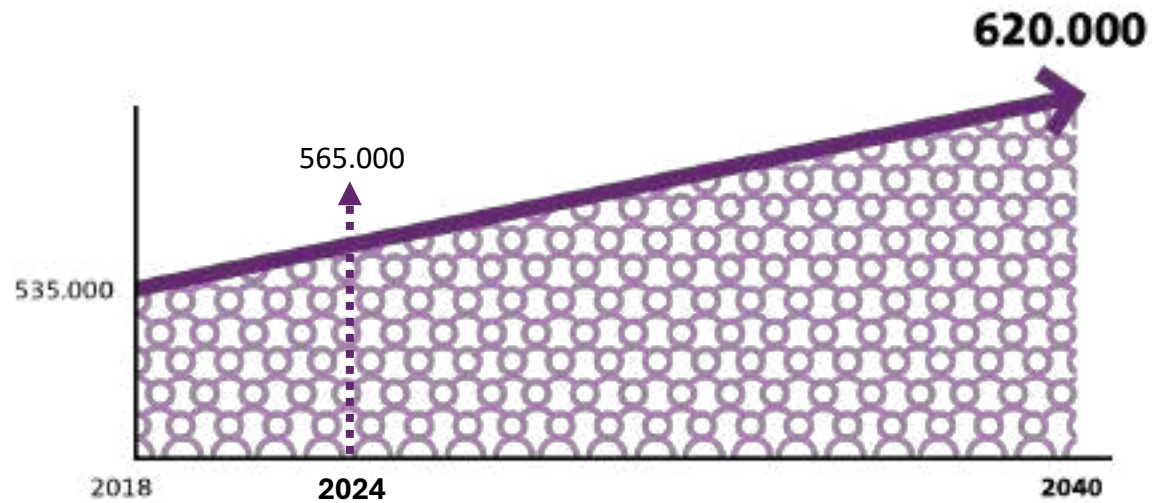




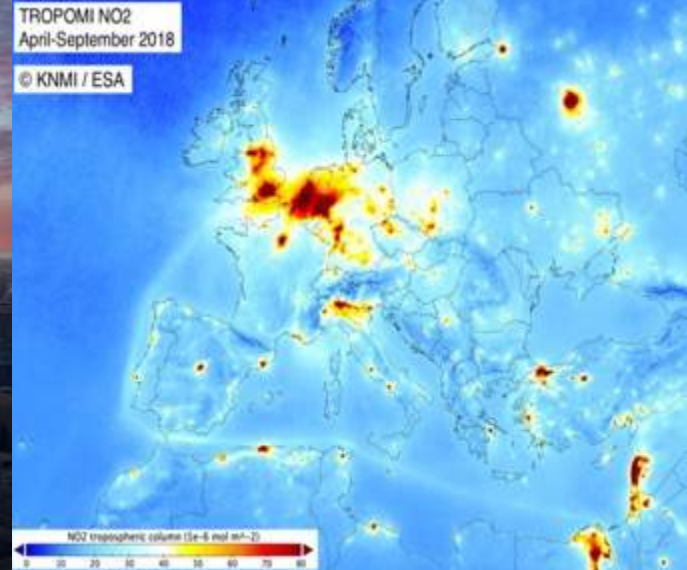
Densely
populated

Expected growth population The Hague

565.000 (2024) – 620.000 inhabitants (2040)

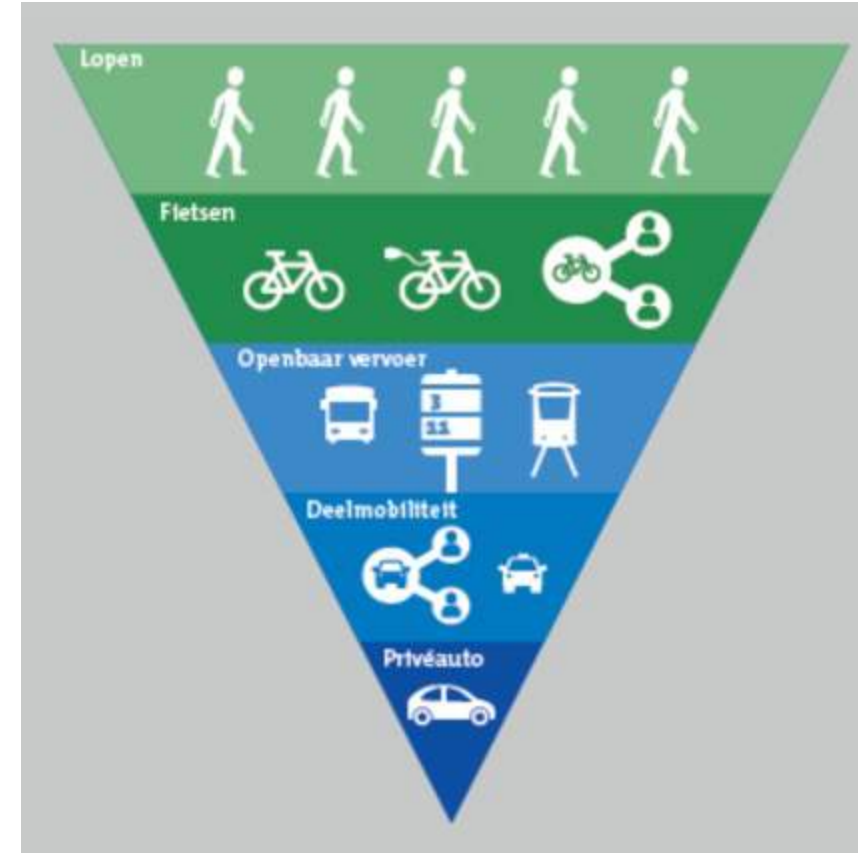


Mobility transition = urgent



Mobility transition: main priorities

- Decreasing short car trips; today approx. 66% of car trips < 10 km;
- Priority for clean and space – efficiënt modes;
- Increasing the modal share of walking, cycling, public transport





Den Haag

Make Way for Bikes!

Cycling Strategy The Hague 2040





The Hague Cycles! Ambitions for 2040

- Making cycling the first choice for distances from 1 till 7,5 km;
- Making the (electric) bicycle a serious alternative for distances in the range of 7,5 – 15 km;
- Increasing bicycle use by 50% in 2040, increasing the modal share of bicycle trips from 20% (2018) to 25% (2040)



1. Why stimulate bicycle use?



- Maintaining good accessibility;
- Decreasing CO2 emissions;
- Improving health and social inclusion;
- An attractive city to live and visit.



Den Haag

The Hague Cycles!

Make Way for Bikes has 4 central topics

1. Attractive and safe bicycle routes;
2. Easy bicycle parking
3. Safe for cyclist
4. More new cyclists

Political support for investing in cycling.



1. Attractive and safe bicycle routes.



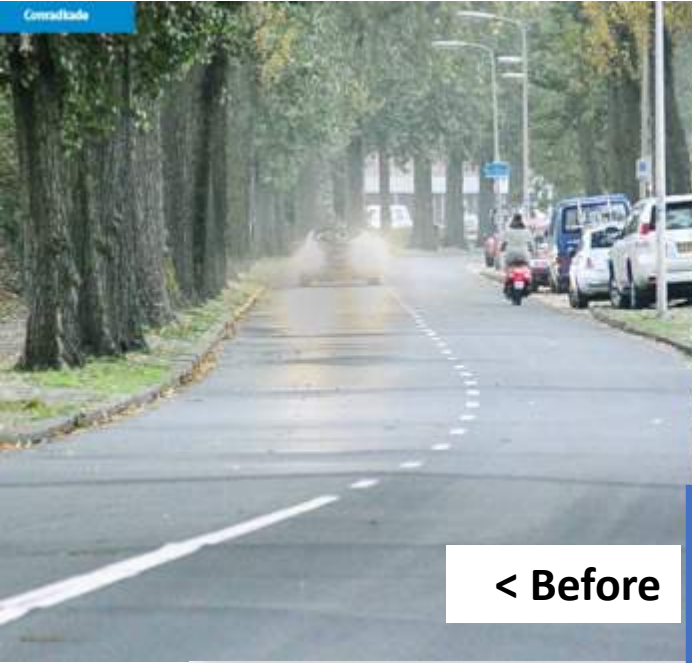


Bicycle network
The Hague

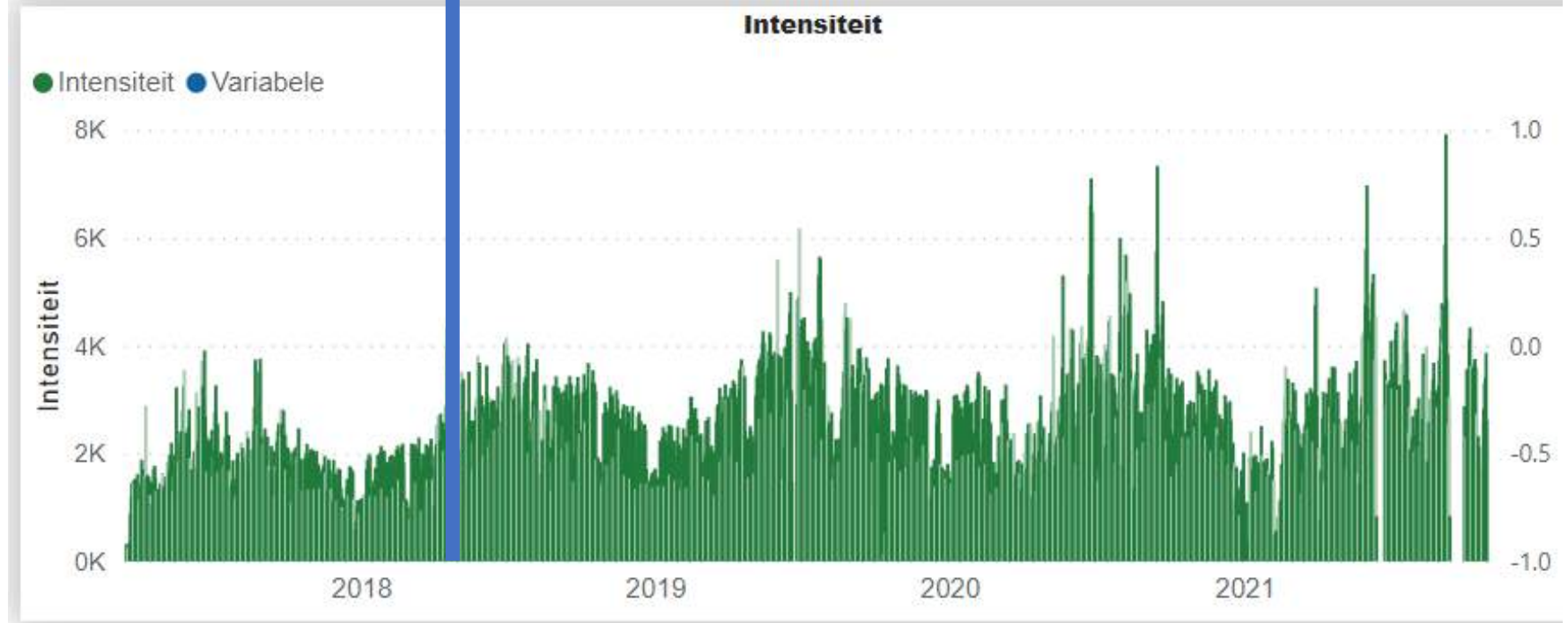


Regional bicycle
network





Monitoring effects



2. Attractive bicycle parking





Bicycle-parking in a multi modal mobility network

- Bicycle parking as an integral part in the development of new lightrail corridors;
- Further expansion of bicycle parking capacity at railway stations in the mid term;
- POP-UP-bicycle parking at the coast during the summer season;
- Bicycle parking facilities in shopping streets and neighbourhoods.



Neighborhoods build before 1940

- Densely build areas;
- In combination with maintenance works; realising a better balance between space for car and bicycle parking;
- Experiment with bicycle decks;
- Innovative solutions; bicycle fietscarousels.



3. Safe for cyclist



Measures:

- **Proactive approach to decrease accidents;**
- School-streets;
- Expanding programmes for traffic education and bicycle skills at schools;
- Exploring the possibilities of nudging and enforcing;



Black spots

Before



After



Measures:

- Proactive approach to decrease accidents;
- **School-streets;**
- Expanding programmes for traffic education and bicycle skills at schools;
- Exploring the possibilities of nudging and enforcing;



School environment



Measures:

- Proactive approach to decrease accidents;
- School-streets;
- **Expanding programmes for traffic education and bicycle skills at schools;**
- Exploring the possibilities of nudging and enforcing;



Education young and not so young



Measures:

- Proactive approach to decrease accidents;
- School-streets;
- Expanding programmes for traffic education and bicycle skills at schools;
- **Exploring the possibilities of nudging and enforcing;**



4. More New Cyclists



Bicycle lights parade



Before



After



Before

Schalk Burgerstraat

After



Before



After



Reconstruction Zeestraat

Thank you

Any questions?

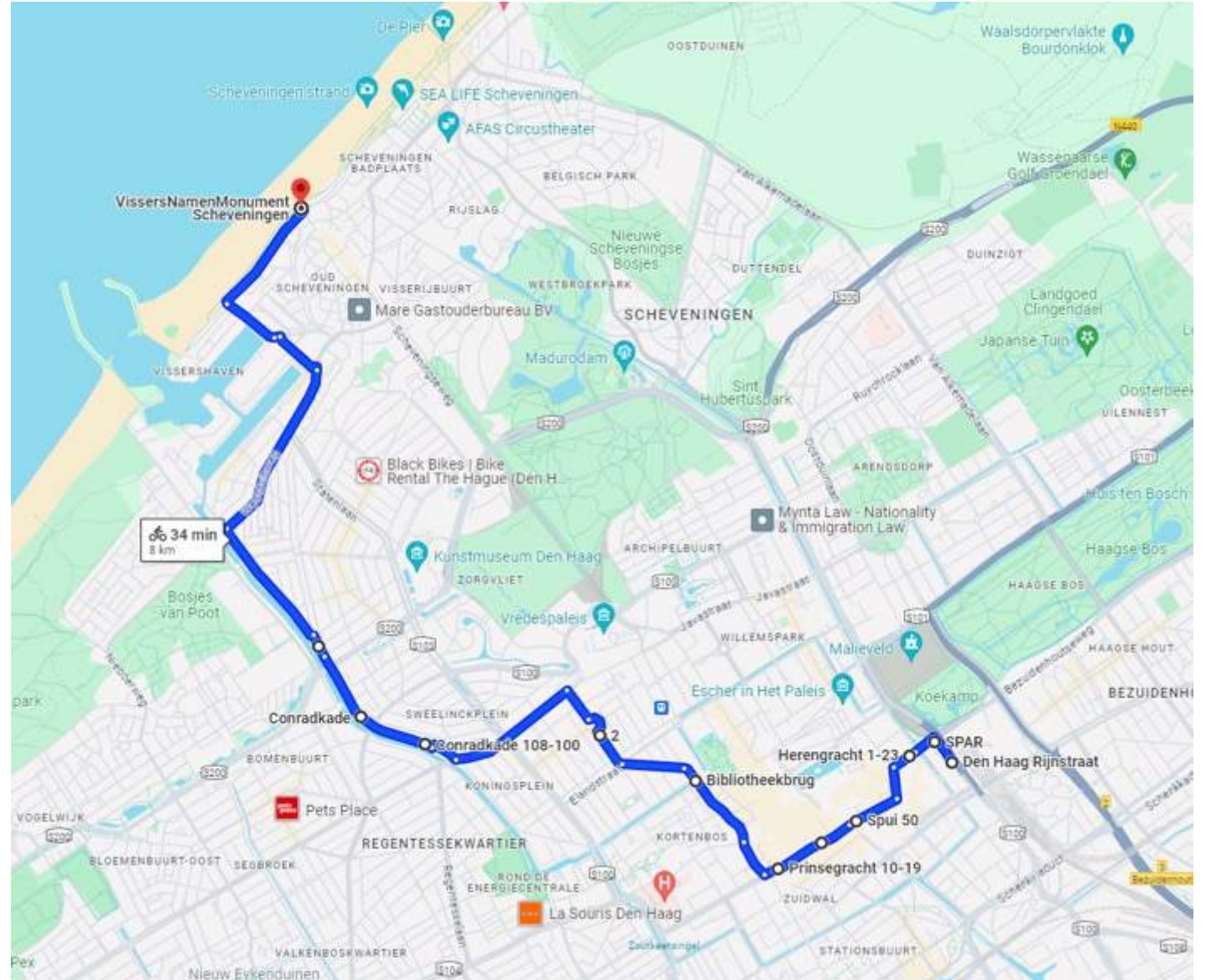


It's time to have a look outside!



Stops:

- City Hall
- Grote Markt Square
- VAB Veenkade
- Zoutmanstraat
- Vissersvrouwkje





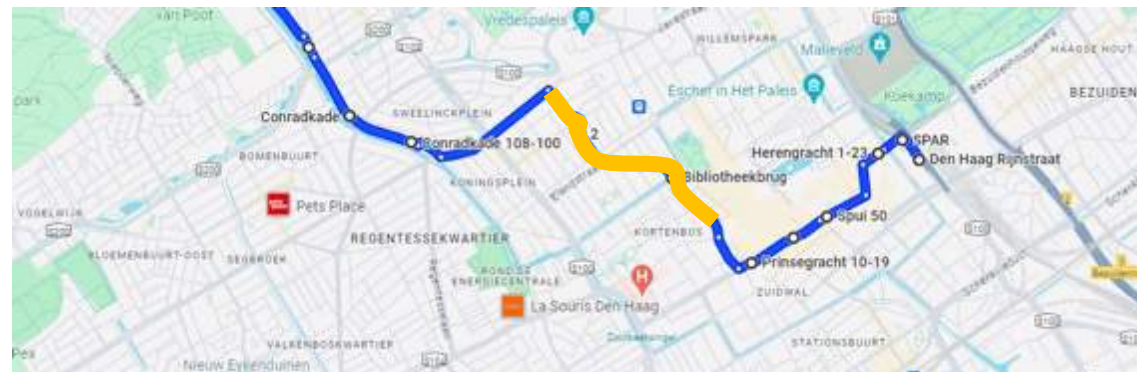
Veenkade



Transformation is not ready



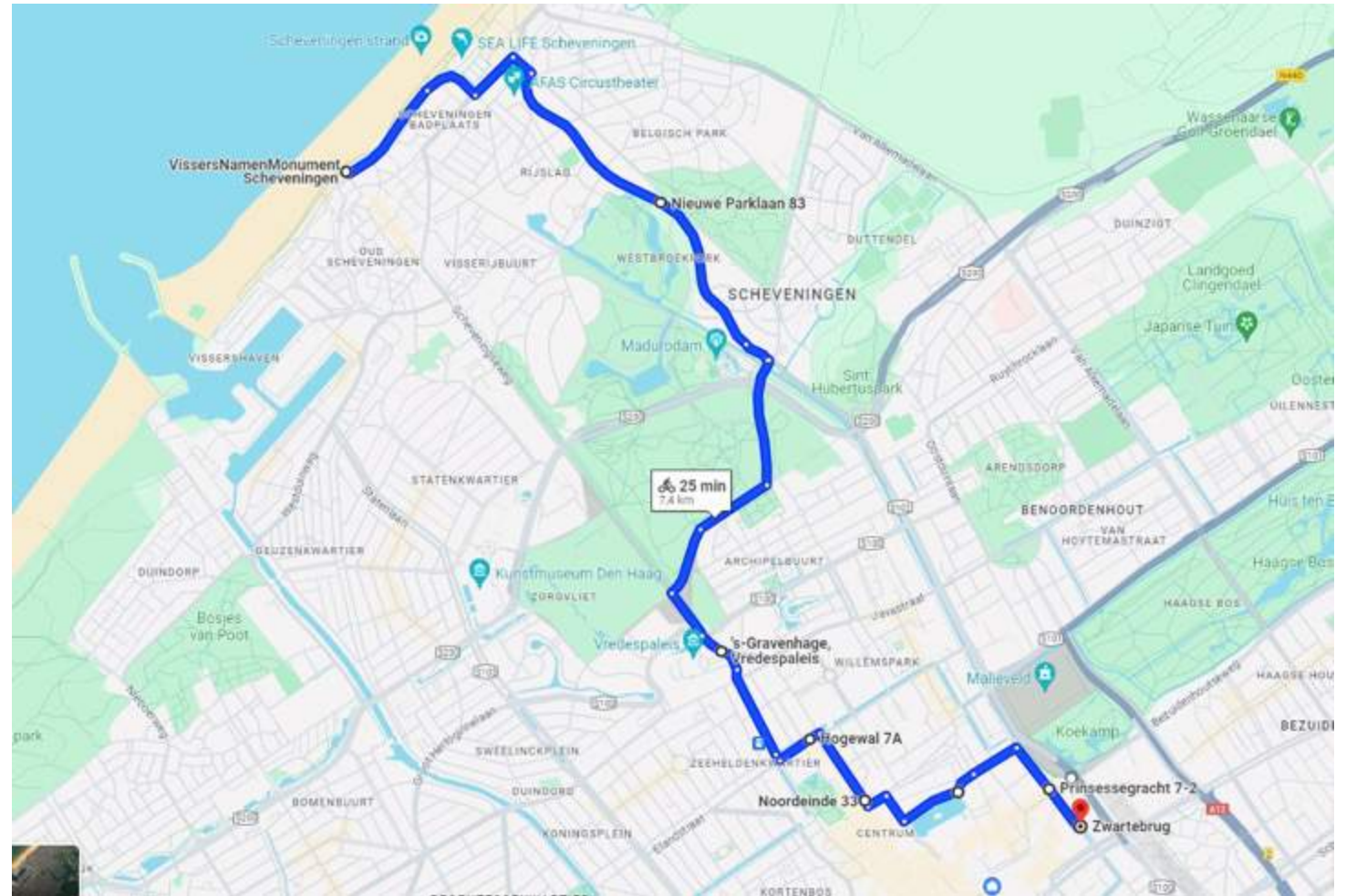
How streets we will cycle through looked in 2022



And back

Stops:

- 7. Peace Palace
- 8. Plaats



Rotterdam

City in transition



Study visit – Miami-Dade delegation (USA) 22-05-2024

Bart Christiaens
Bicycle coordinator

Rotterdam was a typical Dutch cycling city



... but isn't anymore



Gemeente
Rotterdam

After the Second World War, Rotterdam was rebuilt as an American-style modern urban city



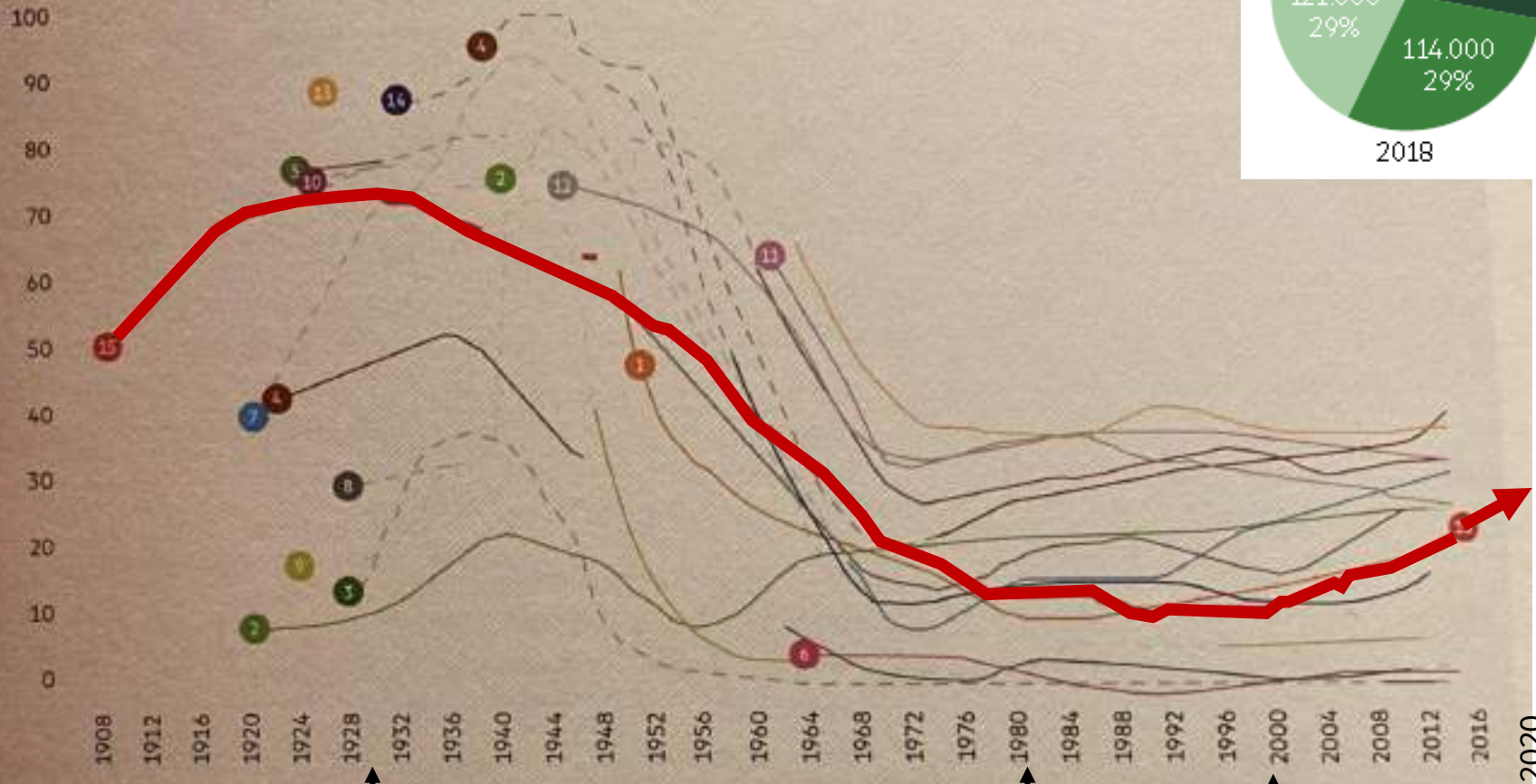
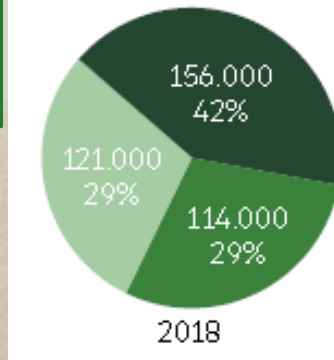
Gemeente
Rotterdam

With wide boulevards, car-oriented design, and subway system but little room for people



Cycling's Share of Traffic in Rotterdam

2010 → 2020
45% growth cycling



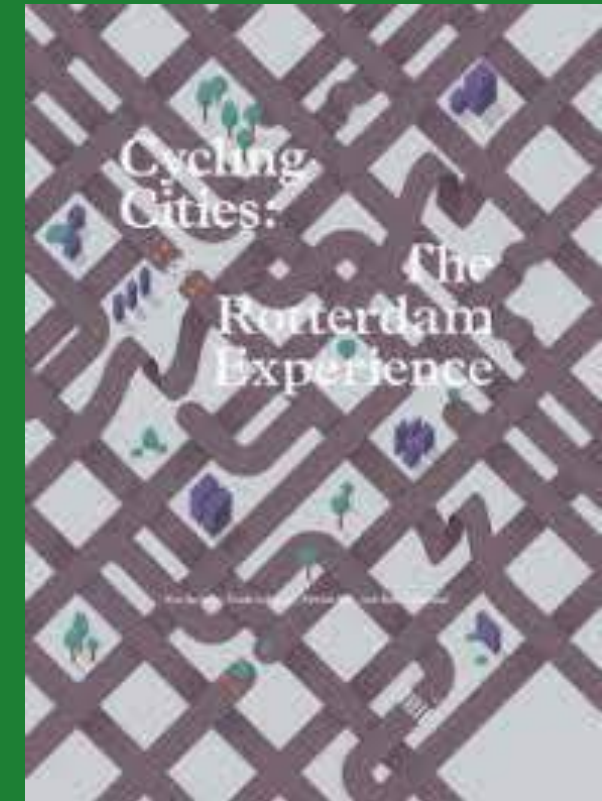
1930

1981

2000

Index

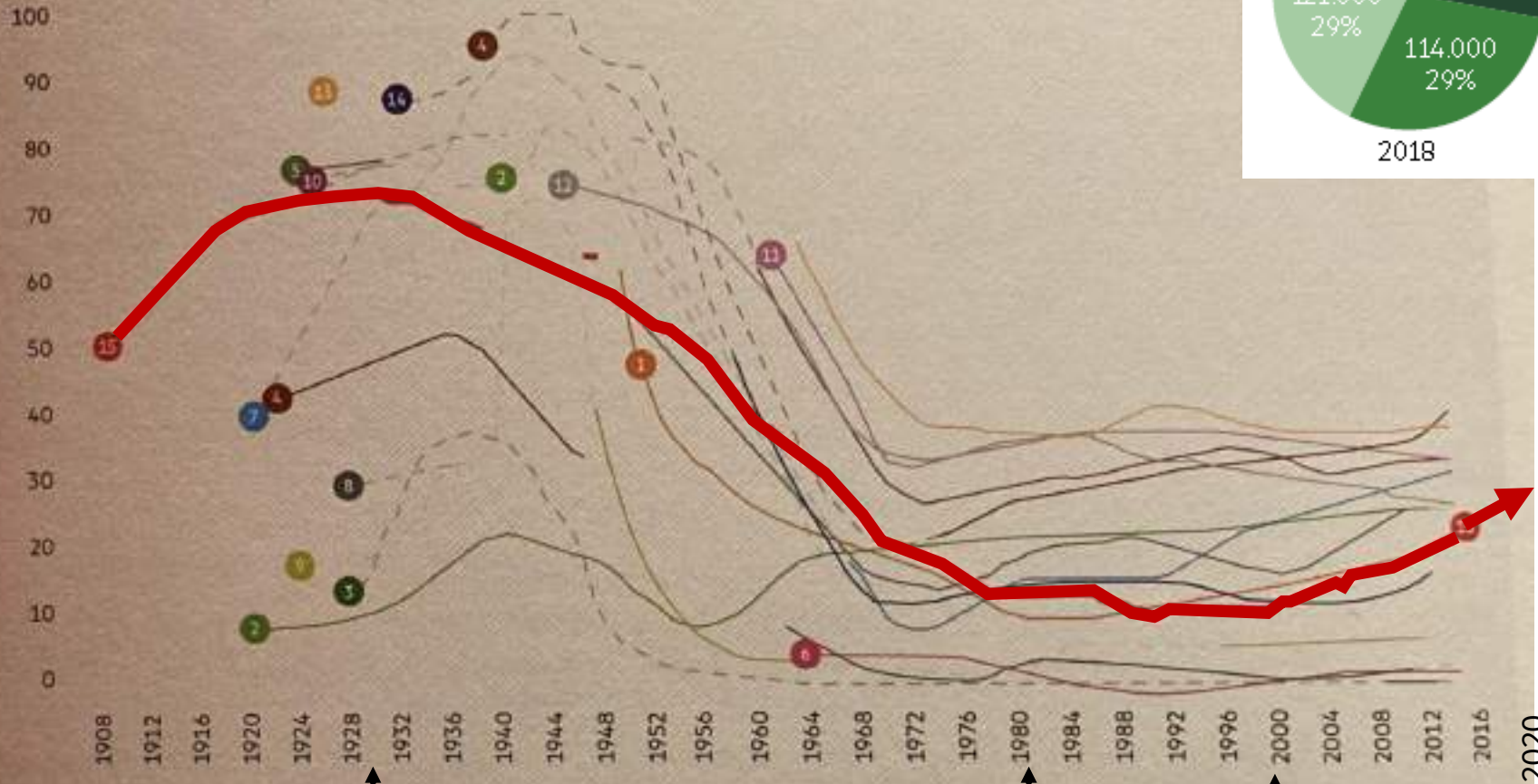
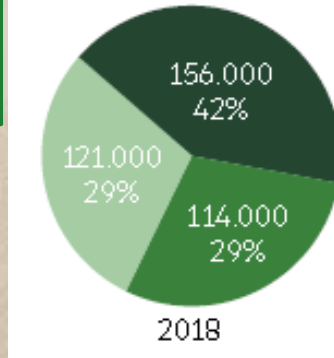
- 1 Antwerp
- 3 Budapest
- 5 Hannover
- 7 Malmö
- 9 Stockholm
- 11 Utrecht
- 13 Enschede
- 15 Rotterdam
- 2 Basel
- 4 Copenhagen
- 6 Lyon
- 8 Manchester
- 10 Amsterdam
- 12 Eindhoven
- 14 SE-Limburg



(source)

Cycling's Share of Traffic in Rotterdam

2010 → 2020
45% growth cycling



1930

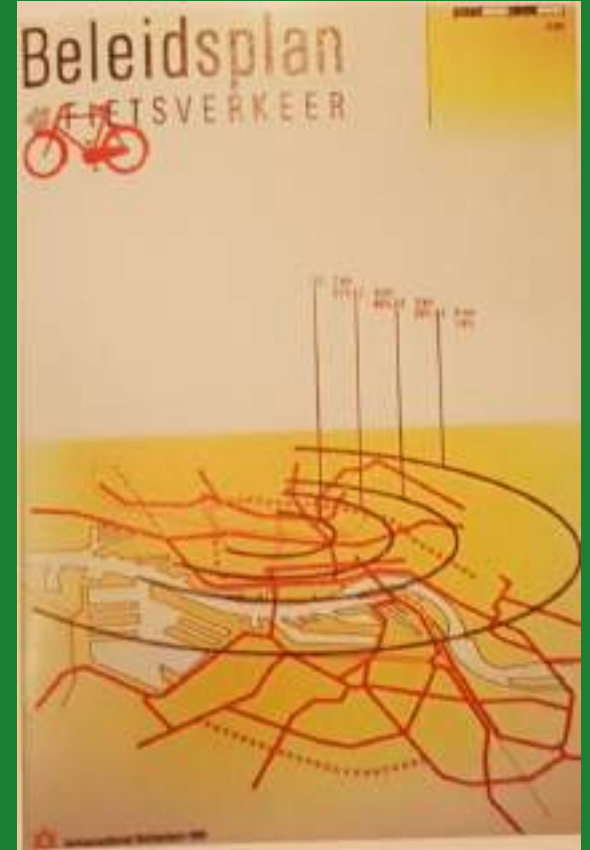
1981

2000

2020

Index

- 1 Antwerp
- 3 Budapest
- 5 Hannover
- 7 Malmö
- 9 Stockholm
- 11 Utrecht
- 13 Enschede
- 15 Rotterdam
- 2 Basel
- 4 Copenhagen
- 6 Lyon
- 8 Manchester
- 10 Amsterdam
- 12 Eindhoven
- 14 SE-Limburg



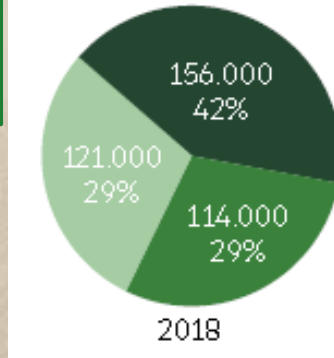
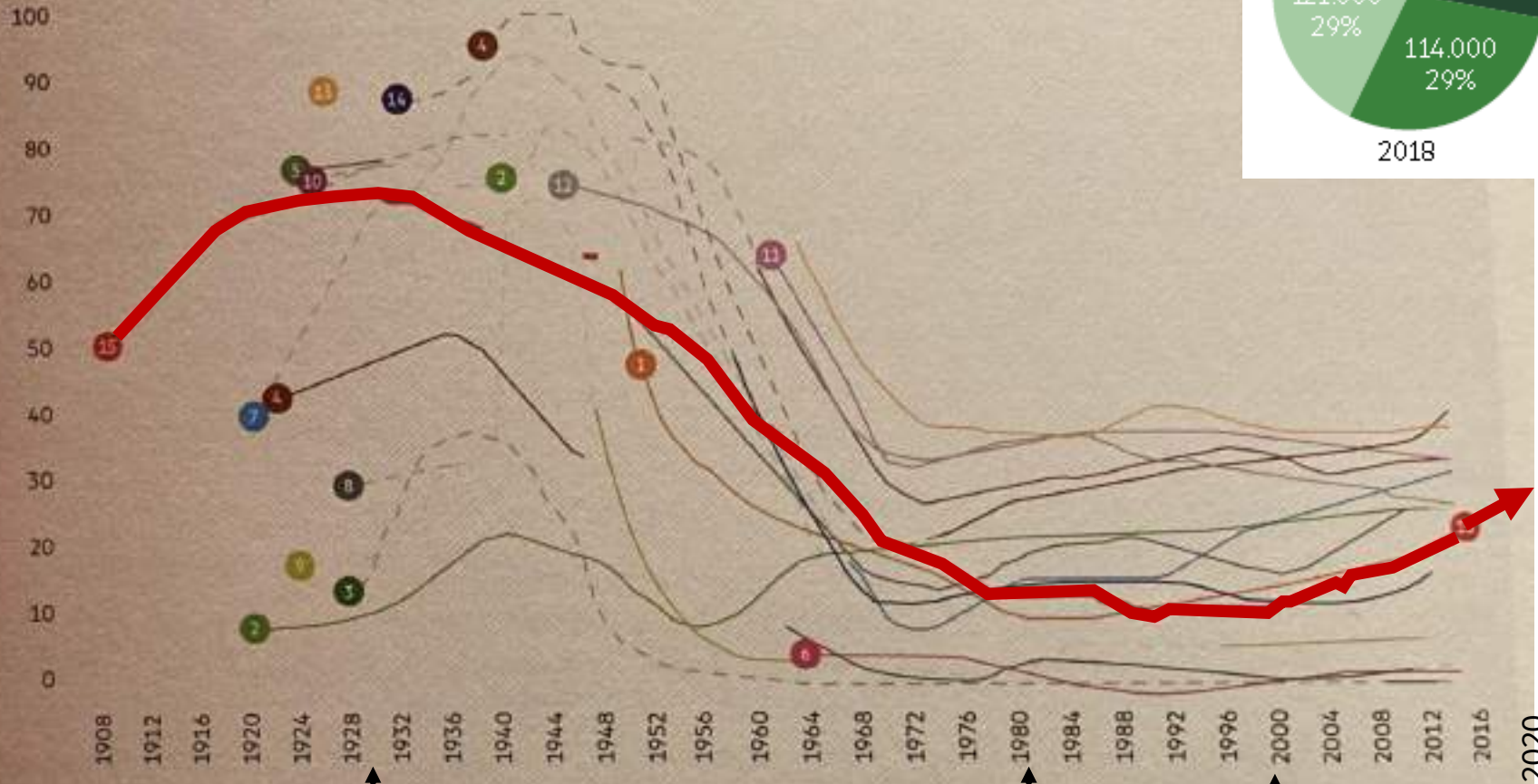
1981: first bike policy city of Rotterdam



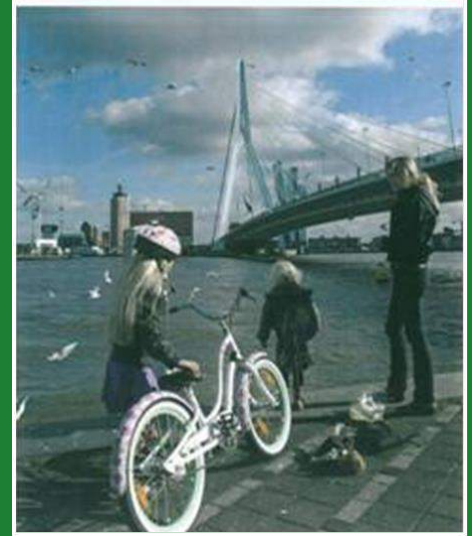
Gemeente Rotterdam

Cycling's Share of Traffic in Rotterdam

2010 → 2020
45% growth cycling



20 kilometre extra cyclepath
Resultaat van collegedoelestelling 16



2007-2011



2010

1930

1981

2000

Index

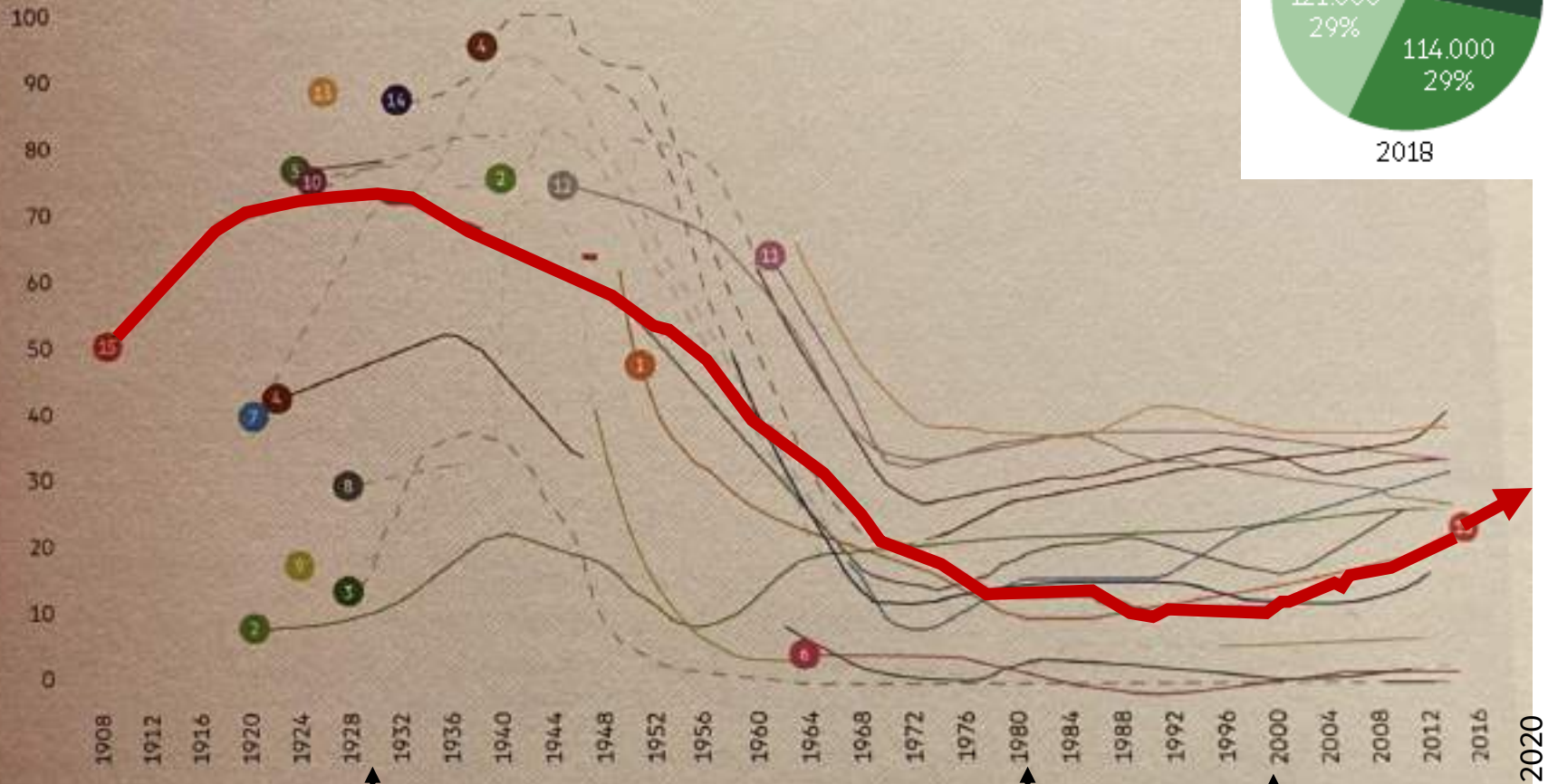
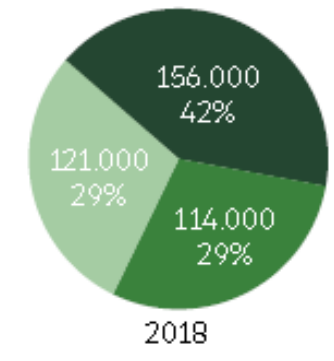
- 1 Antwerp
- 3 Budapest
- 5 Hannover
- 7 Malmö
- 9 Stockholm
- 11 Utrecht
- 13 Enschede
- 15 Rotterdam
- 2 Basel
- 4 Copenhagen
- 6 Lyon
- 8 Manchester
- 10 Amsterdam
- 12 Eindhoven
- 14 SE-Limburg



Gemeente Rotterdam

Cycling's Share of Traffic in Rotterdam

2010 → 2020
45% growth cycling



1930

1981

2000

2020

Index

- 1 Antwerp
- 3 Budapest
- 5 Hannover
- 7 Malmö
- 9 Stockholm
- 11 Utrecht
- 13 Enschede
- 15 Rotterdam
- 2 Basel
- 4 Copenhagen
- 6 Lyon
- 8 Manchester
- 10 Amsterdam
- 12 Eindhoven
- 14 SE-Limburg



Wethouder (v.l.) Langerhans nam samen met de wethouder van het Districtsbestuur in Rotterdam in januari 2017

'Rotterdam moet fietsstad bij uitstek worden'

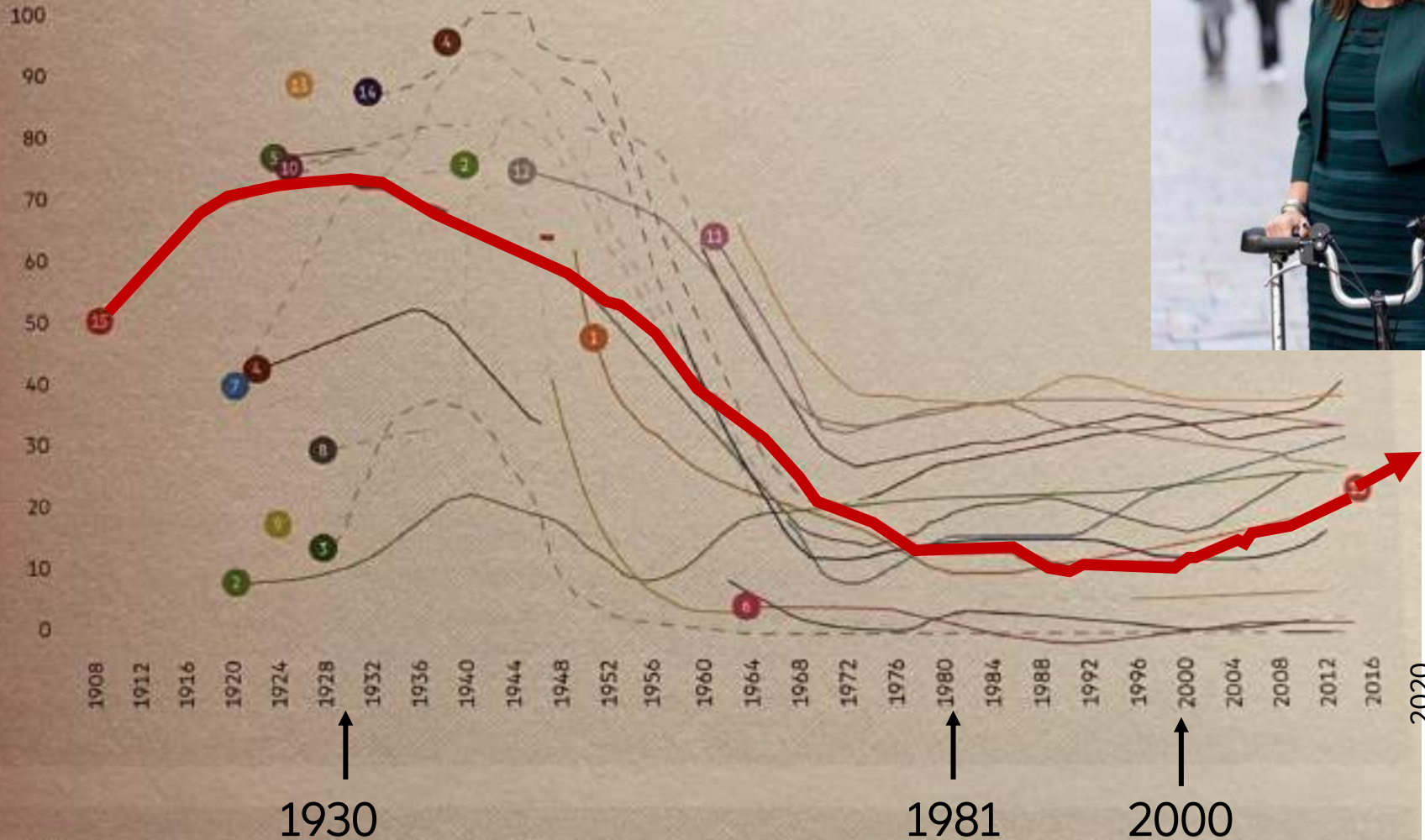
2014-2018: Goal to become an **exceptional bicycle city**.
"People should know we're more than a city for cars"



Stientje van Veldhoven, Staatssecretaris van Infrastructuur en Waterstaat

Cycling's Share of Traffic in Rotterdam

2010 → 2020
45% growth cycling



"We need to redesign cities to make them more resilient"

Judith Bokhove
Deputy Mayor, City of Rotterdam

#MoreCycling for a Green Recovery

#MoreCycling ECF
EUROPEAN CYCLISTS' FEDERATION

Rotterdam omarmt mobiliteitstransitie

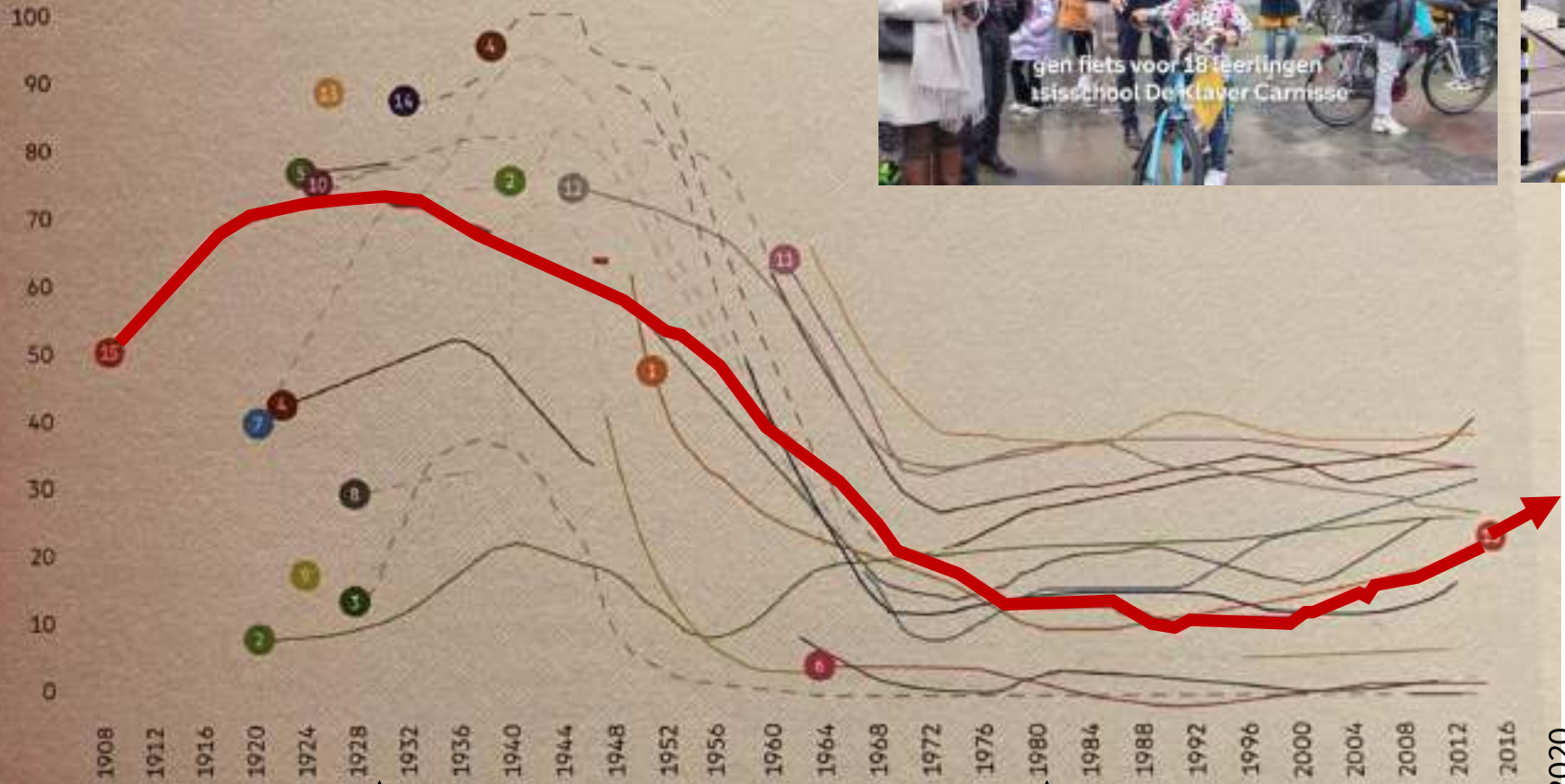


2018-2022: Rotterdam embraces the mobility transition



Gemeente Rotterdam

Cycling's Share of Traffic in Rotterdam



2022-2026:

- Road safety
- Solving problems
- Improving bike parking + main city and regional cycling routes



Index

- | | | | | | | | |
|-----------|--------------|------------|--------------|--------------|--------------|---------------|--------------|
| 1 Antwerp | 3 Budapest | 5 Hannover | 7 Malmö | 9 Stockholm | 11 Utrecht | 13 Enschede | 15 Rotterdam |
| 2 Basel | 4 Copenhagen | 6 Lyon | 8 Manchester | 10 Amsterdam | 12 Eindhoven | 14 SE-Limburg | |



Gemeente Rotterdam

"Story-telling": cycling contributes to...



Good growth of the city

Coherent policy



Overarching

Thematical

Mode of transport



Policy to create a healthy and attractive city



Gemeente Rotterdam

Becoming a bicycle city

IS NOT the goal



Gemeente
Rotterdam



It's about...

Building a
great city
&
great
public
places



Gemeente
Rotterdam

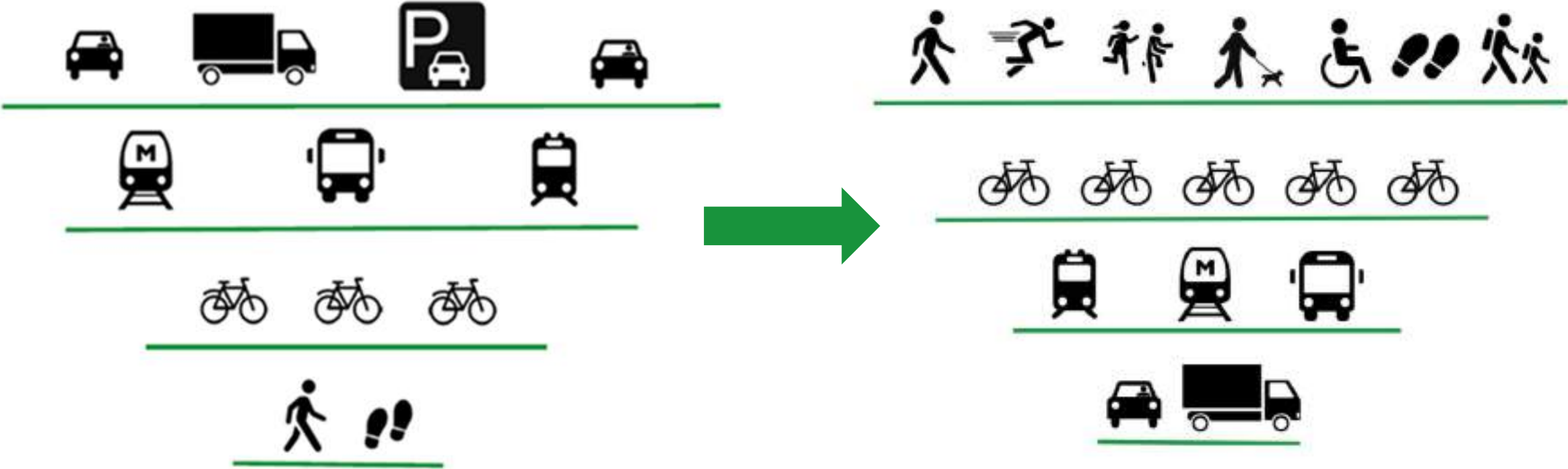


Where
walking
& cycling
“is only
logical”



Gemeente
Rotterdam

Prioritize “the other way around”



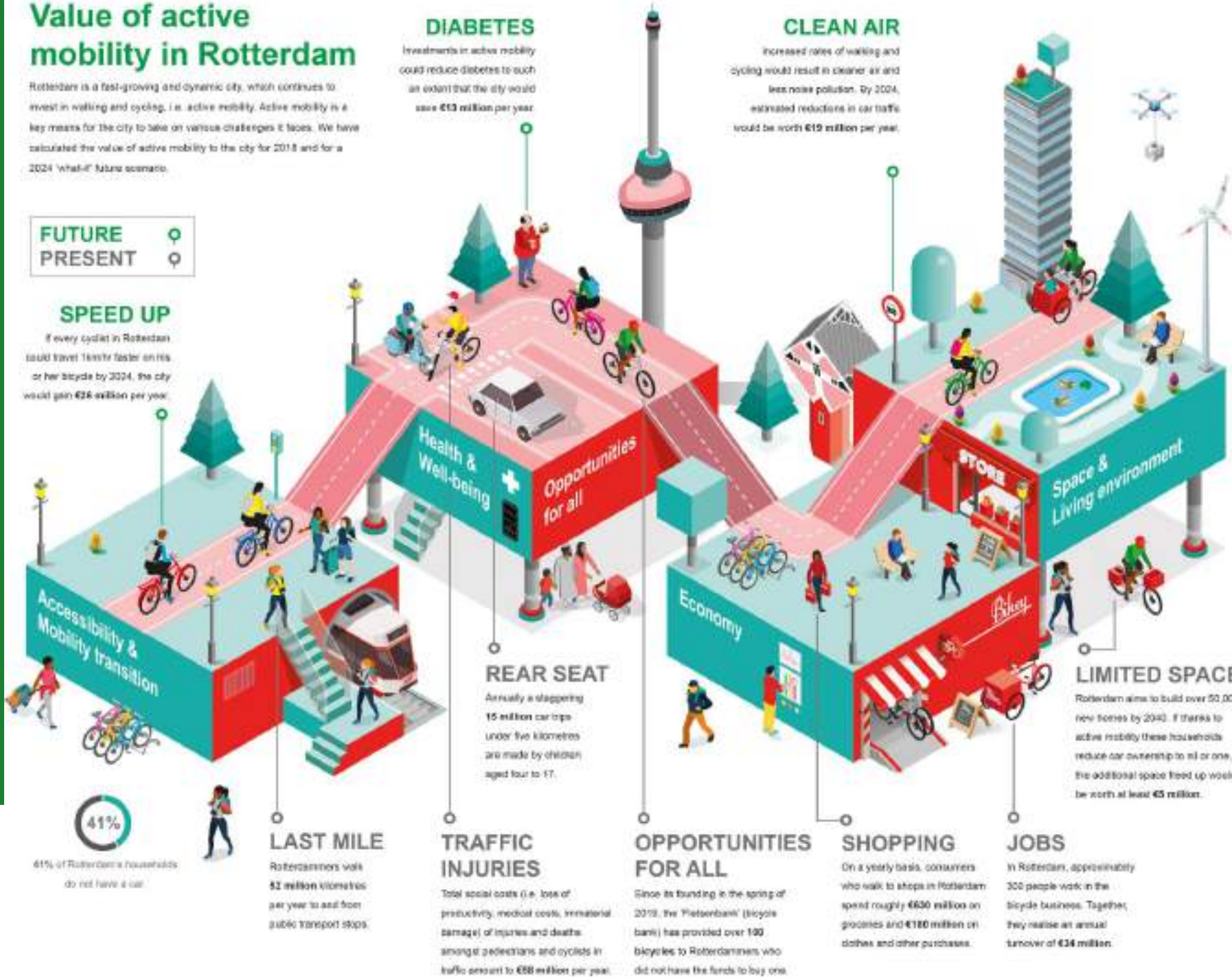
Value of active mobility in Rotterdam

Rotterdam is a fast-growing and dynamic city, which continues to invest in walking and cycling, i.e. active mobility. Active mobility is a key means for the city to take on various challenges it faces. We have calculated the value of active mobility to the city for 2018 and for a 2024 'what-if' future scenario.

FUTURE ♀
PRESENT ♀

SPEED UP

If every cyclist in Rotterdam could travel 1km/hr faster on his or her bicycle by 2024, the city would gain €26 million per year.



DIABETES

Investments in active mobility could reduce diabetes to such an extent that the city would save €13 million per year.

CLEAN AIR

Increased rates of walking and cycling would result in cleaner air and less noise pollution. By 2024, estimated reductions in car traffic would be worth €19 million per year.

Health & Well-being

Opportunities for all

Economy

Space & Living environment

Accessibility & Mobility transition

REAR SEAT

Annually a staggering 15 million car trips under five kilometres are made by children aged four to 17.

LIMITED SPACE

Rotterdam aims to build over 50,000 new homes by 2040. If thanks to active mobility these households reduce car ownership to nil or one, the additional space freed up would be worth at least €45 million.



41% of Rotterdam's households do not have a car.

LAST MILE

Rotterdamers walk €2 million kilometres per year to and from public transport stops.

TRAFFIC INJURIES

Total social costs (i.e. loss of productivity, medical costs, immaterial damage) of injuries and deaths among pedestrians and cyclists in traffic amount to €88 million per year.

OPPORTUNITIES FOR ALL

Since its founding in the spring of 2019, the 'Pietsebank' (bicycle bank) has provided over 100 bicycles to Rotterdamers who did not have the funds to buy one.

SHOPPING

On a yearly basis, consumers who walk to shops in Rotterdam spend roughly €650 million on groceries and €180 million on clothes and other purchases.

JOBS

In Rotterdam, approximately 300 people work in the bicycle business. Together, they realise an annual turnover of €34 million.

Welfare gain

WHAT-IF SCENARIO 2024

We have drawn up a hypothetical scenario to match an ambitious policy. This scenario supposes an extra 570 million active kilometres will be walked/cycled by Rotterdamers in 2024.

- Shift of the modal share by 2024:
- Bicycle: 12% of total kilometres instead of 7%
 - Walking: 0% instead of the current 3%

STATUS QUO 2018

Current facts and figures on active mobility in Rotterdam.

233 million investment in green and attractive city projects: transformation streets, boulevard en squares



Rotterdam krijgt een groene metamorfose

Met twee honderden miljoen in 2019 gaat de Rotterdamse stadsbestuur aan de slag met een ambitieuze groenplan. De 233 miljoen euro wordt gebruikt voor het aanpakken van verschillende stedelijke projecten.

Beleidsplan

De eigen plannen van de wijk De Wijk aan Zee (Wijk aan Zee) worden nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen. Het plan is nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen. Het plan is nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen.

We willen een stad maken waar het prettig verpozen is

...ontwikkelen de plannen van de wijk. Het plan is nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen. Het plan is nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen.

...ontwikkelen de plannen van de wijk. Het plan is nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen. Het plan is nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen.

...ontwikkelen de plannen van de wijk. Het plan is nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen. Het plan is nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen.

Maashaven

...ontwikkelen de plannen van de wijk. Het plan is nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen. Het plan is nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen.

...ontwikkelen de plannen van de wijk. Het plan is nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen. Het plan is nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen.

...ontwikkelen de plannen van de wijk. Het plan is nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen. Het plan is nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen.

Maashaven

...ontwikkelen de plannen van de wijk. Het plan is nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen. Het plan is nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen.

...ontwikkelen de plannen van de wijk. Het plan is nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen. Het plan is nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen.

...ontwikkelen de plannen van de wijk. Het plan is nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen. Het plan is nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen.

Maashaven

...ontwikkelen de plannen van de wijk. Het plan is nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen. Het plan is nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen.

...ontwikkelen de plannen van de wijk. Het plan is nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen. Het plan is nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen.

...ontwikkelen de plannen van de wijk. Het plan is nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen. Het plan is nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen.

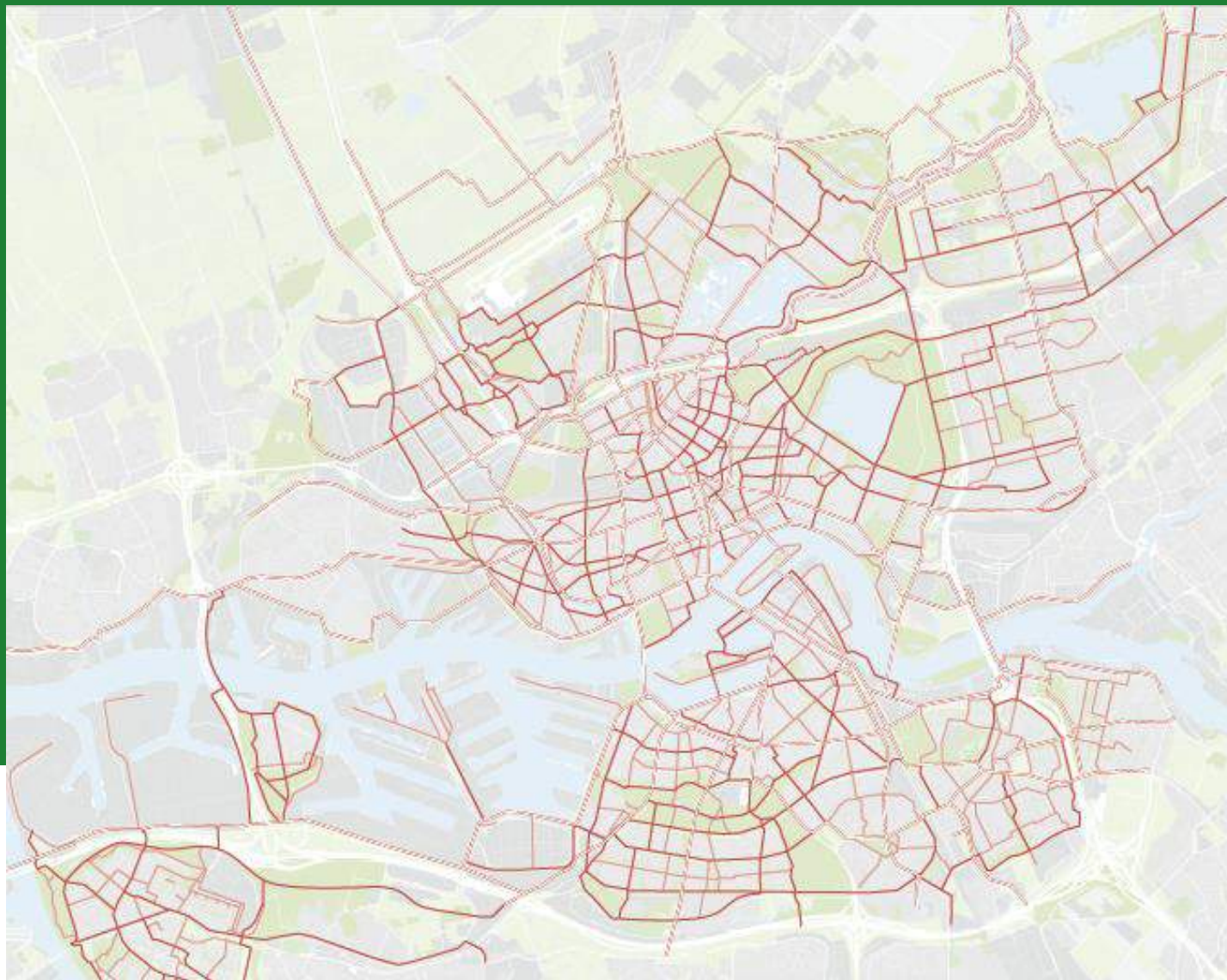
Maashaven

...ontwikkelen de plannen van de wijk. Het plan is nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen. Het plan is nu ook in de Wijk aan Zee (Wijk aan Zee) opgenomen.



Gemeente Rotterdam

Building a coherent cycle network

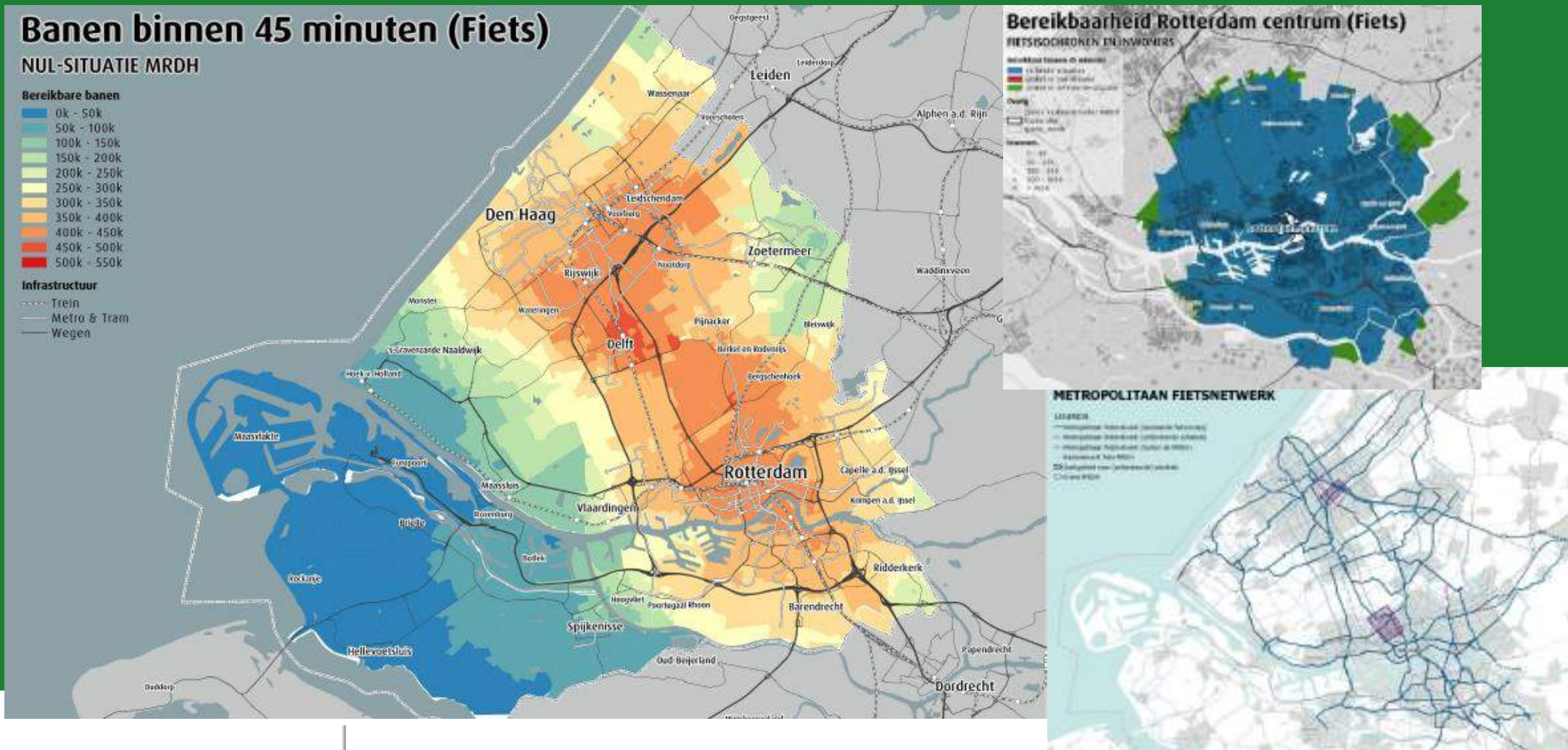


Cycle network with 4 levels:

- Regional cycle network
- Main urban cycle network (city)
- Fine grained neighbourhood cycle network
- Recreational cycle network



Reachability jobs (travel time bike work & living areas)



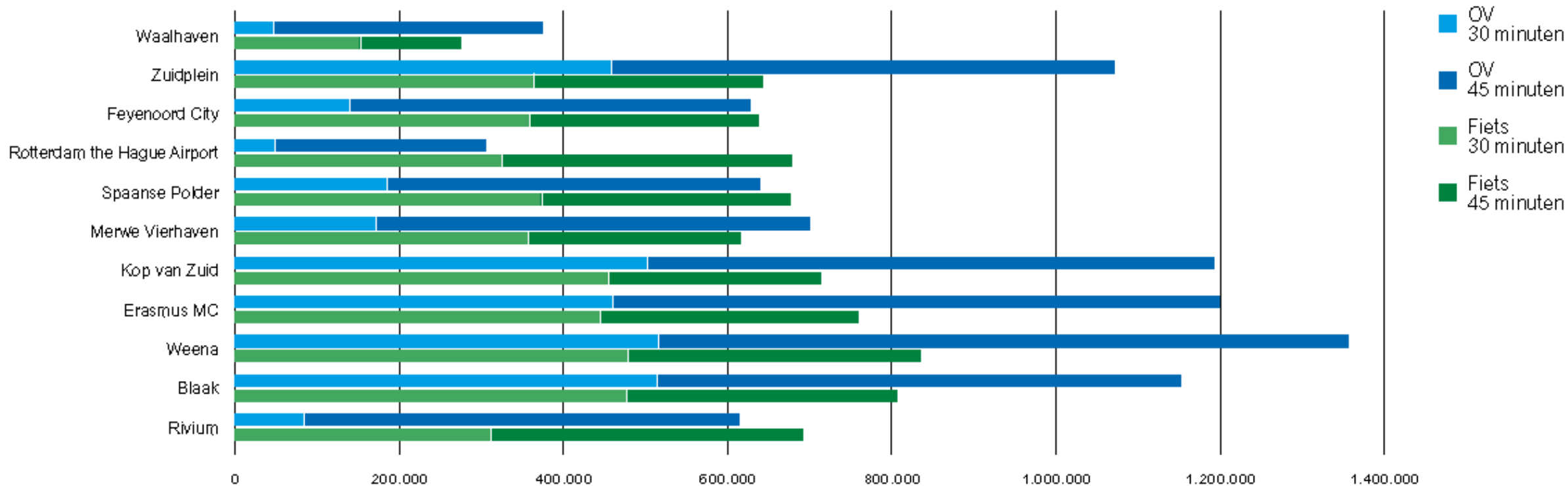
Figuur: Aantal te bereiken banen binnen 45 minuten voor iedere locatie in de MRDH (huidige situatie)

Reachability jobs (travel time bike and public transport)

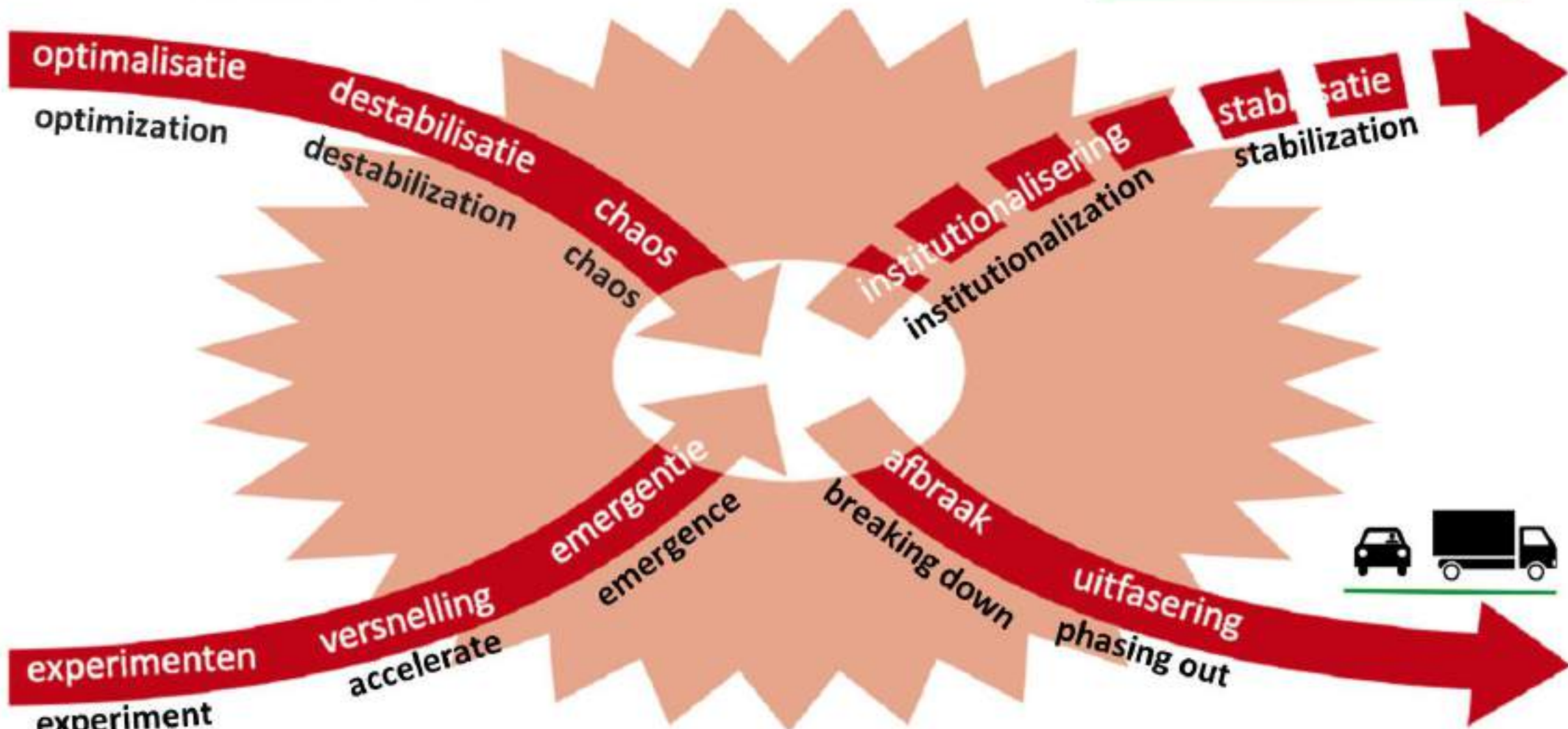
Fiets en OV bereikbaarheid werklocaties - aantal inwoners

Bron: Verkeersmodel MRDH

Netwerkstructuur



Transition Management: the basis for the bike policy in Rotterdam "Fietskoers 2025"



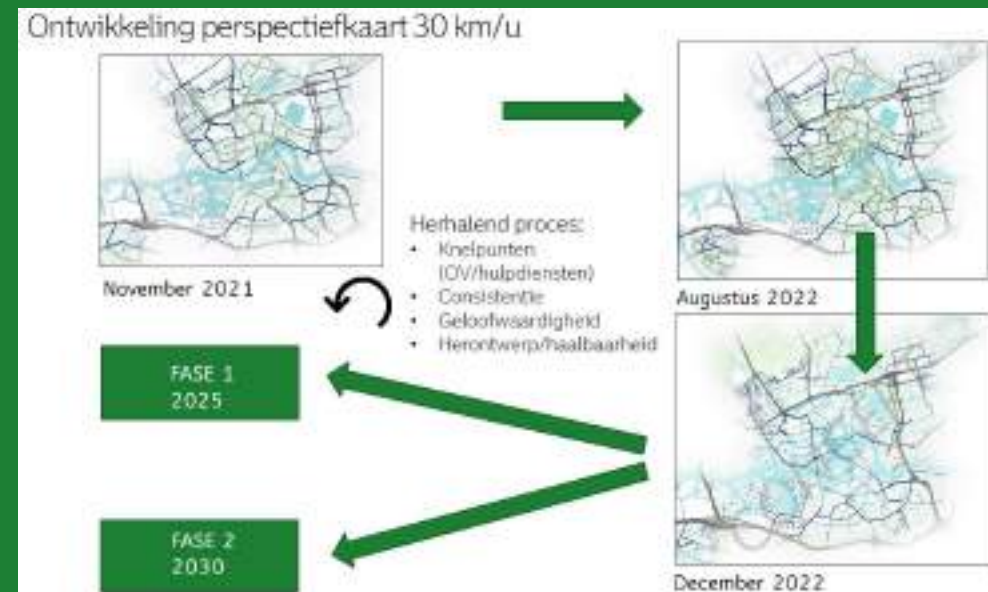
Breaking down & phasing out



Zero emission zone
City logistics
by 1-1-2025



Traffic circulation Plan (inner-city)
is being developed
to be decided in 2024
circa 25 measures towards 2030

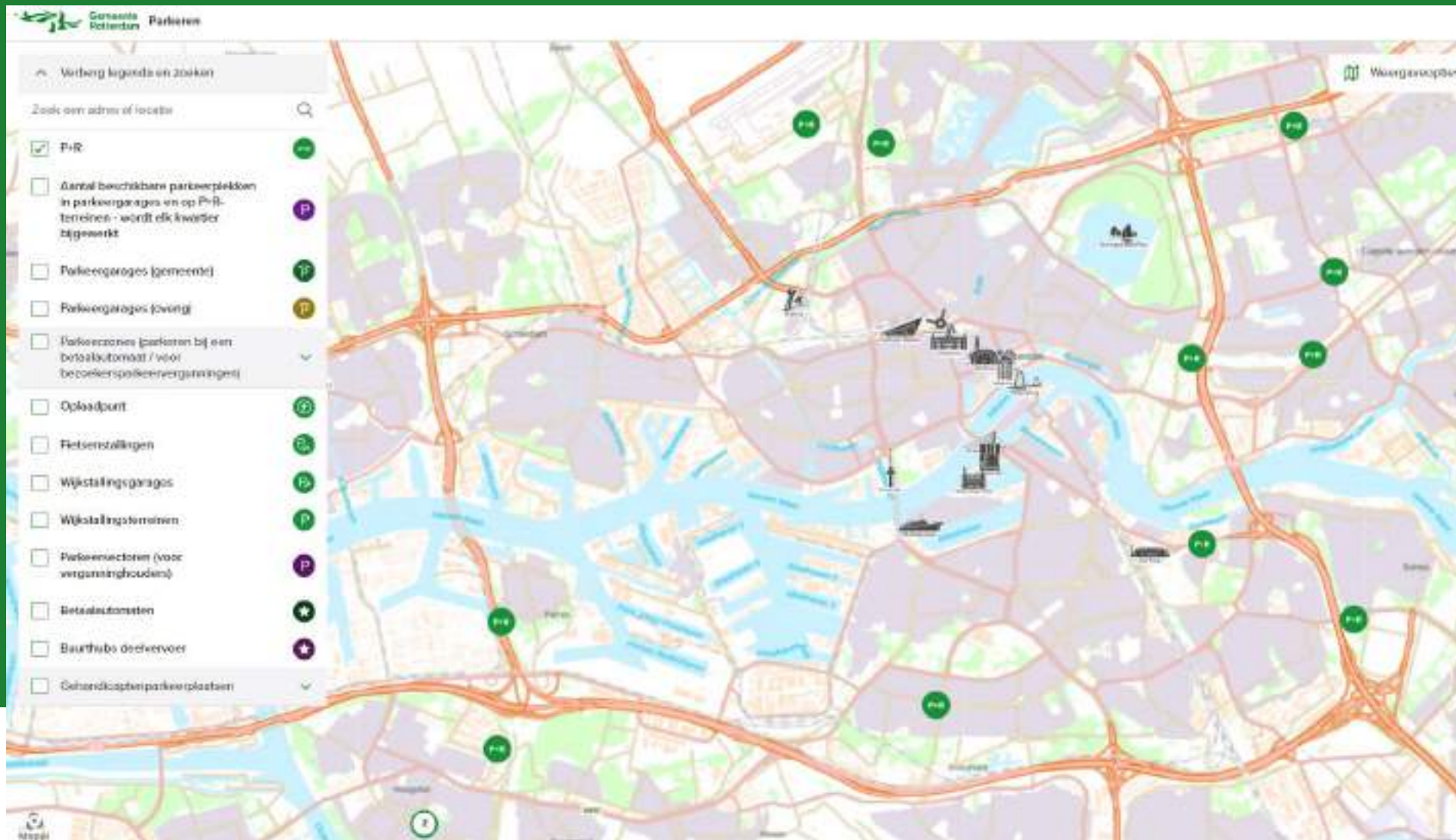


Reduction driving speed to 30 km/h
a few streets transformed already
115 streets in 2025
next steps towards 2030



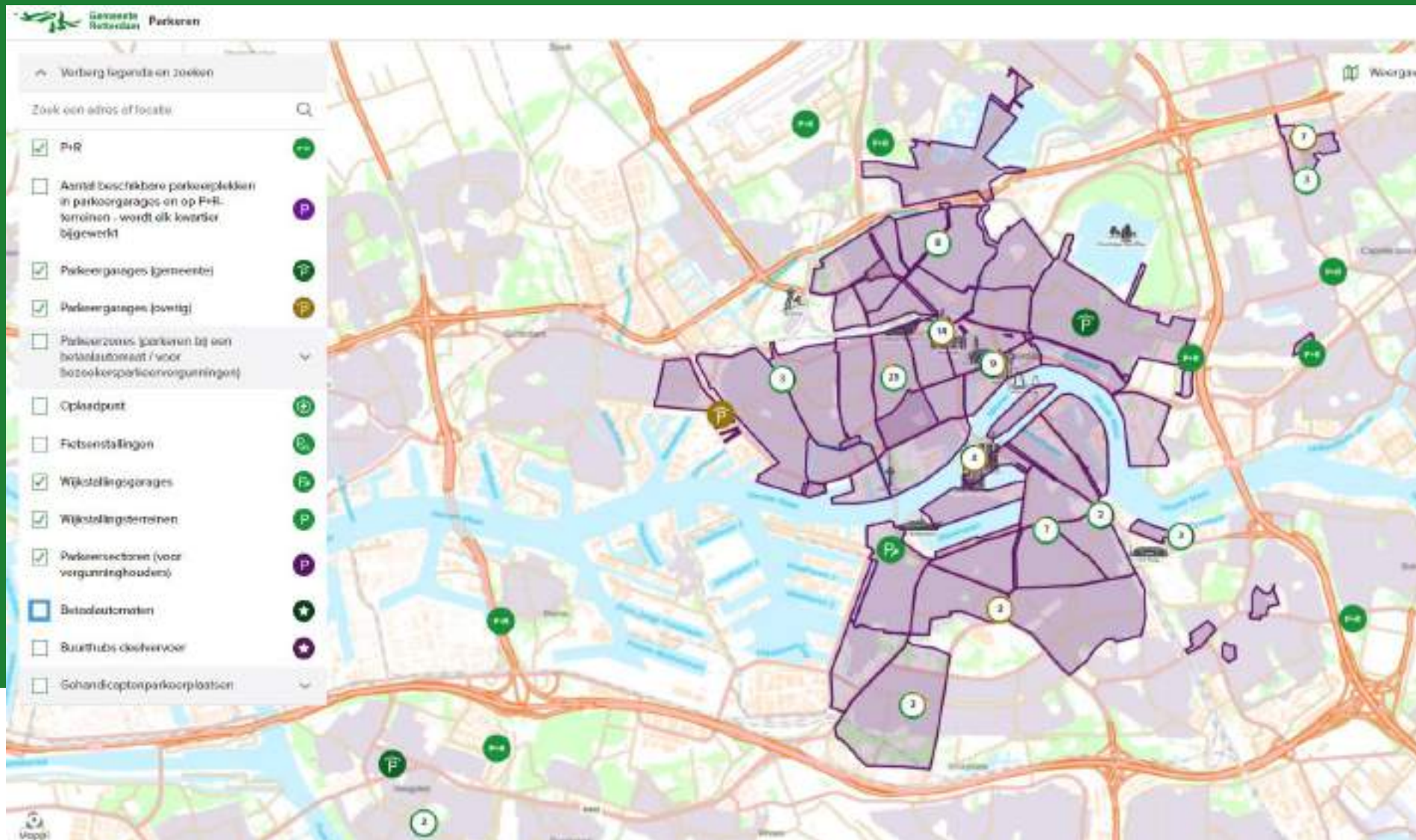
Stimulate Park & Ride

car park nearby highway and also nearby a station metro/subway

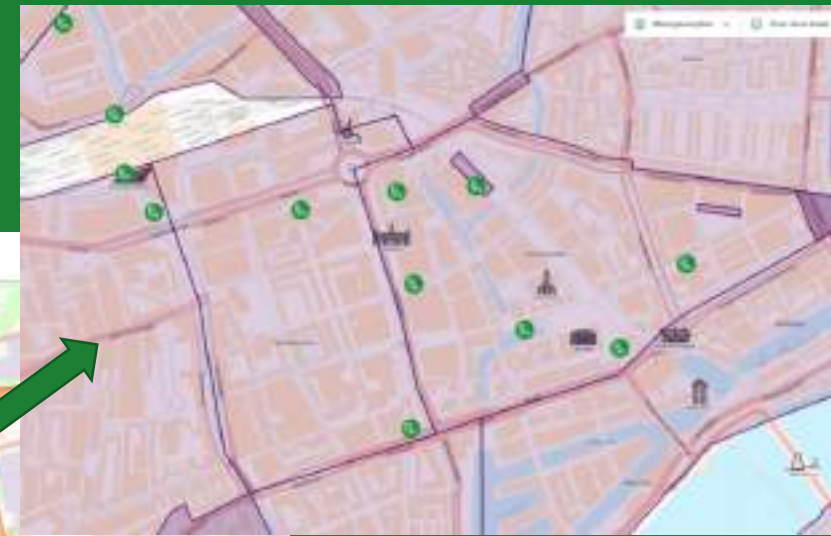
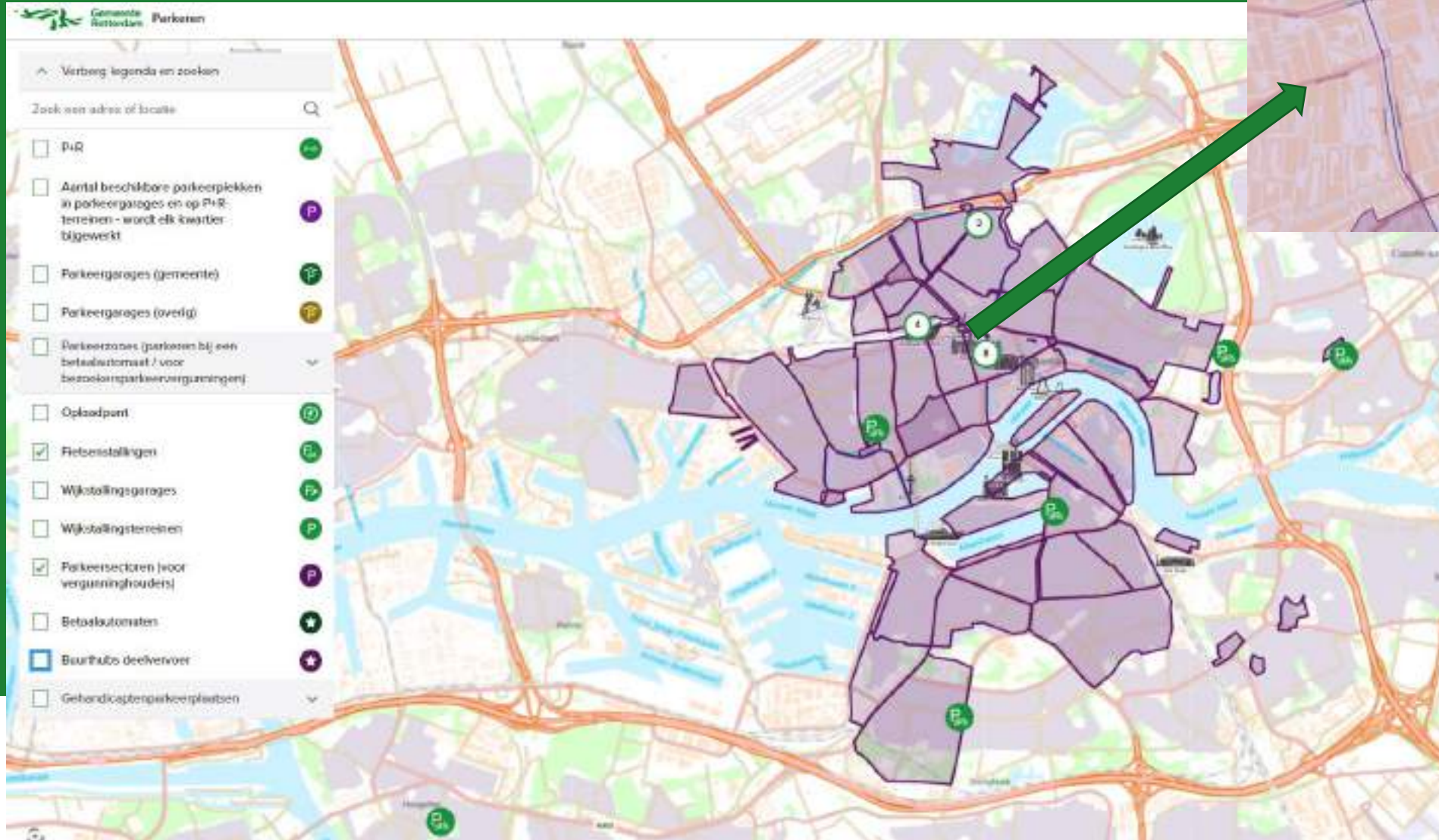


Gemeente
Rotterdam

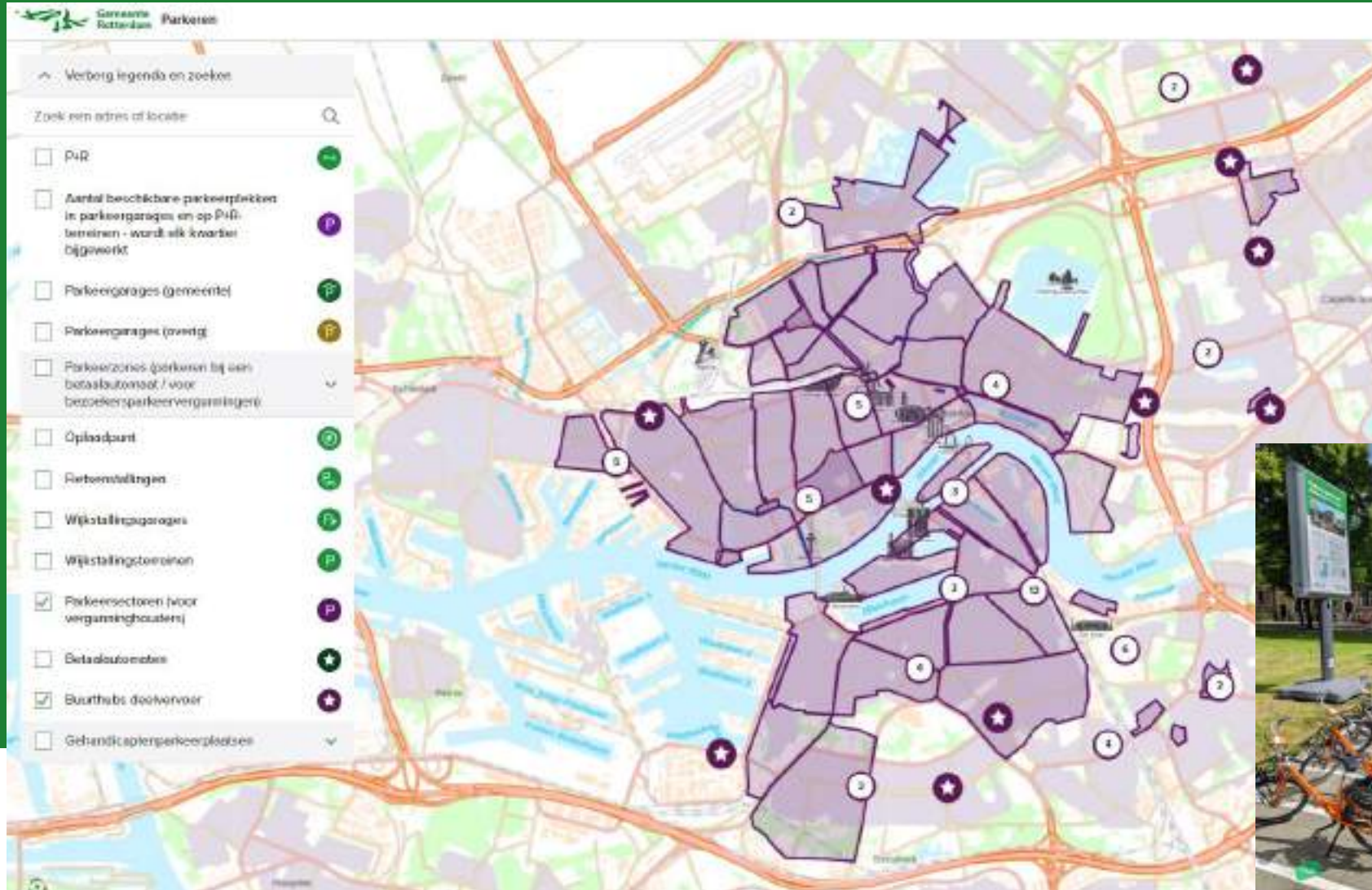
Parking regulation & future expansion within highway zone



20 bike parking garages



100+ hubs for shared bikes & mopeds



And more than 100 extra hubs to realize in the next year





ROTTERDAM.
MAKE IT HAPPEN.

ANNABEL ;)

Bike parking parklet (tactical urbanism)

ambition & policy



parking plan & cycling plan

before

experiment



bikeparklet

change



permanent bikepark

after



Gemeente
Rotterdam

Experiment, convince politicians and make it permanent (in upcoming years)



Gemeente
Rotterdam

Taking space from cars → places for people



Gemeente
Rotterdam

Crossing big car barriers (in the city)



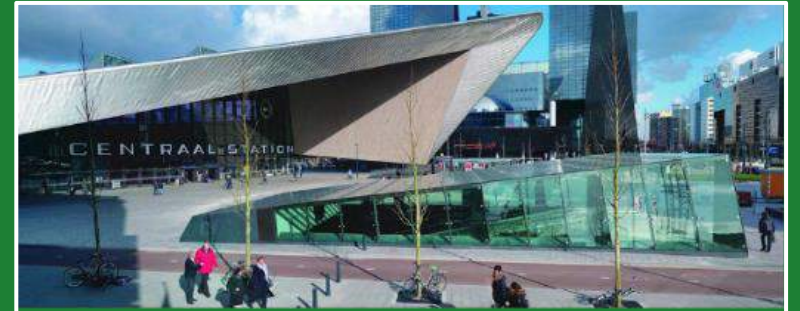
No crossing for cyclists



Gemeente
Rotterdam



Building parking spots for bikes



Gemeente Rotterdam

Bike parking is about walking!



Equal chances for everyone - inclusivity

Neighborhoods with
Lower social economic status
Immigrants

“Create a new bicycle culture”

1. Owning a bike
 2. Repairing
 3. Parking your bike
 4. Learning to bike
 5. Image
- Knowledge
 - Build a network and combine activities

1



Cycle Bank (like a food bank)

2



4



5



“Building a cycle culture”



Gemeente
Rotterdam

Local partnerships: Rotterdam Cycling Alliance



De Rotterdamse Fietsalliantie
Uitnodiging: Meet-up #3
Donderdag 29 april 2021
15.00 - 16.30 uur

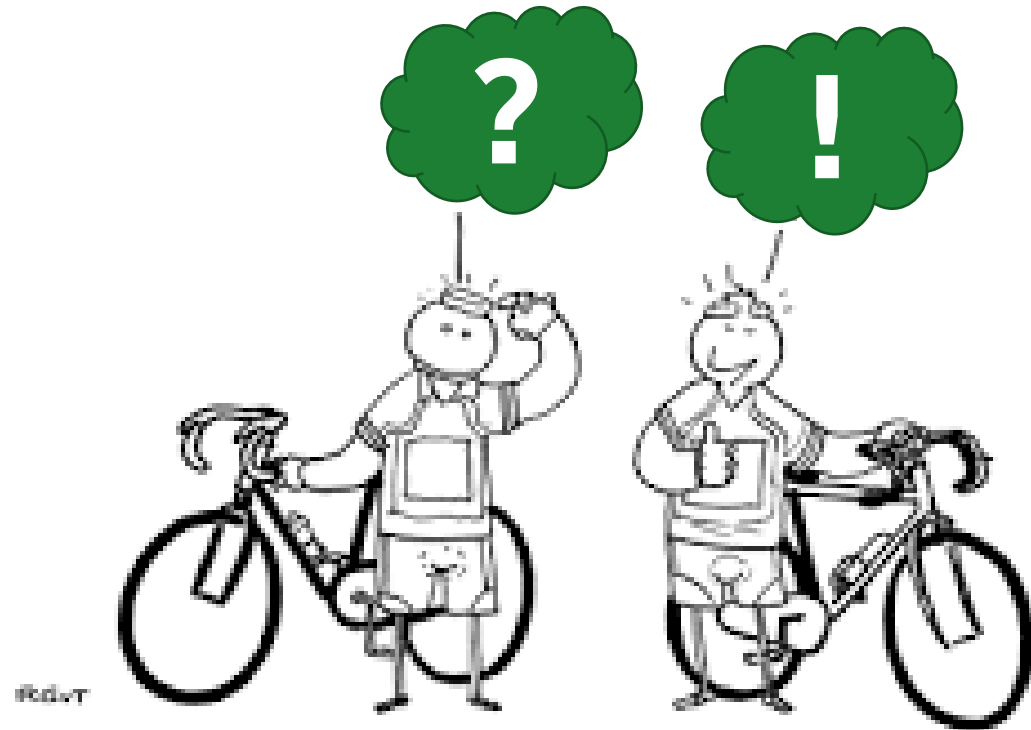
Road safety = a boundary condition



Gemeente Rotterdam

Thank you
for listening

**Are there
questions?**



Bart Christiaens
Bicycle coordinator



**Gemeente
Rotterdam**

Miami-Dade TPO

Multi-modal networks

22 May 2024

Arcadis Team

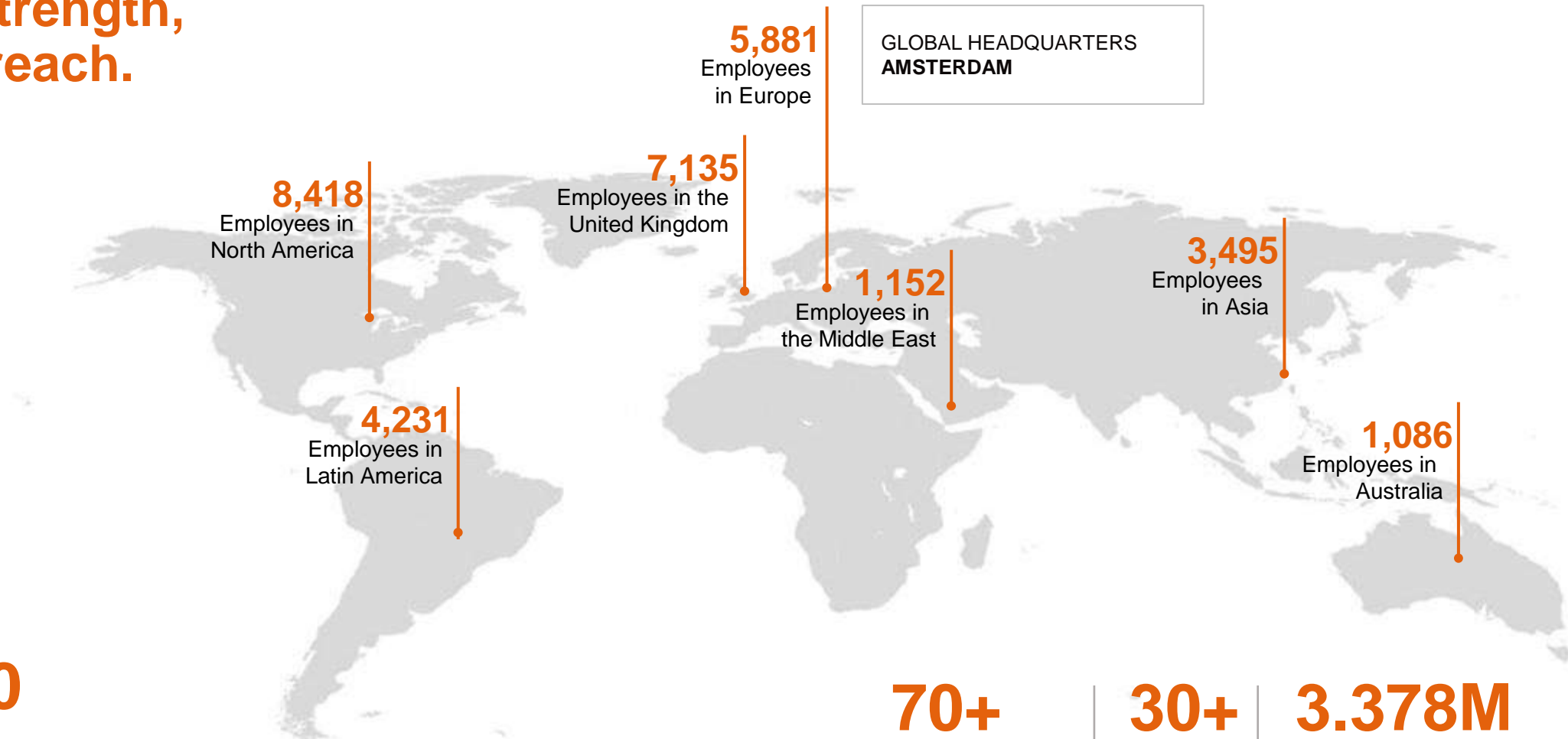


Matt Bearden, PE
Transportation Consultant



Alex van Gent
Active Transport Lead

About us. Local strength, global reach.



37,000

Employees worldwide

70+

Countries with completed projects

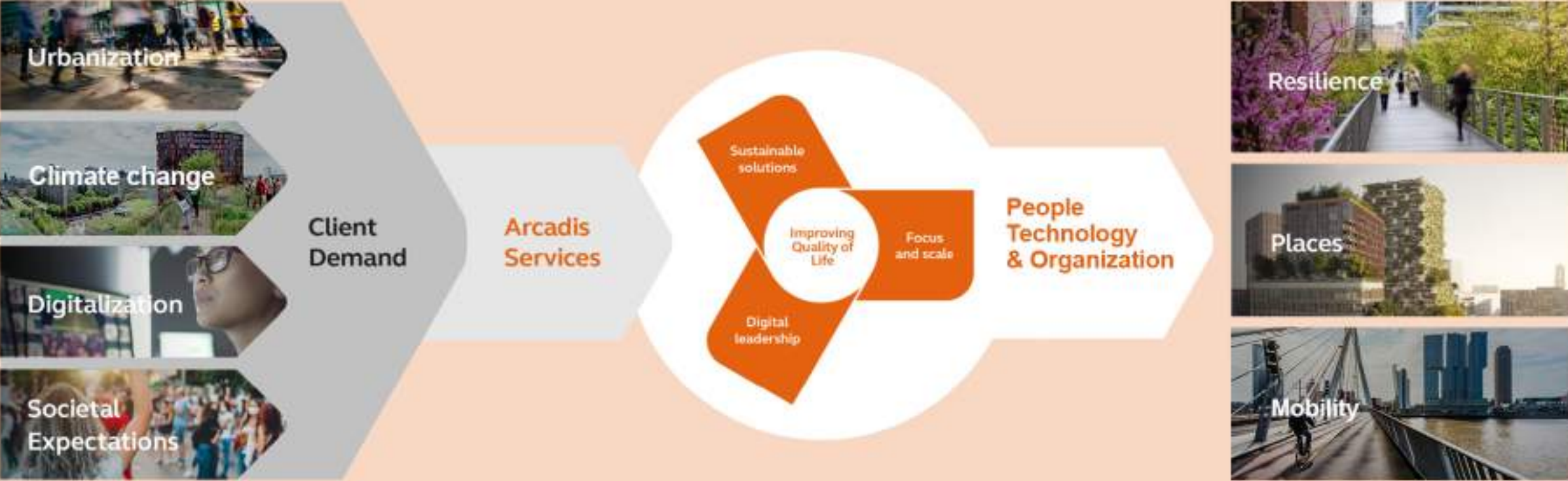
30+

Countries with offices

3.378M

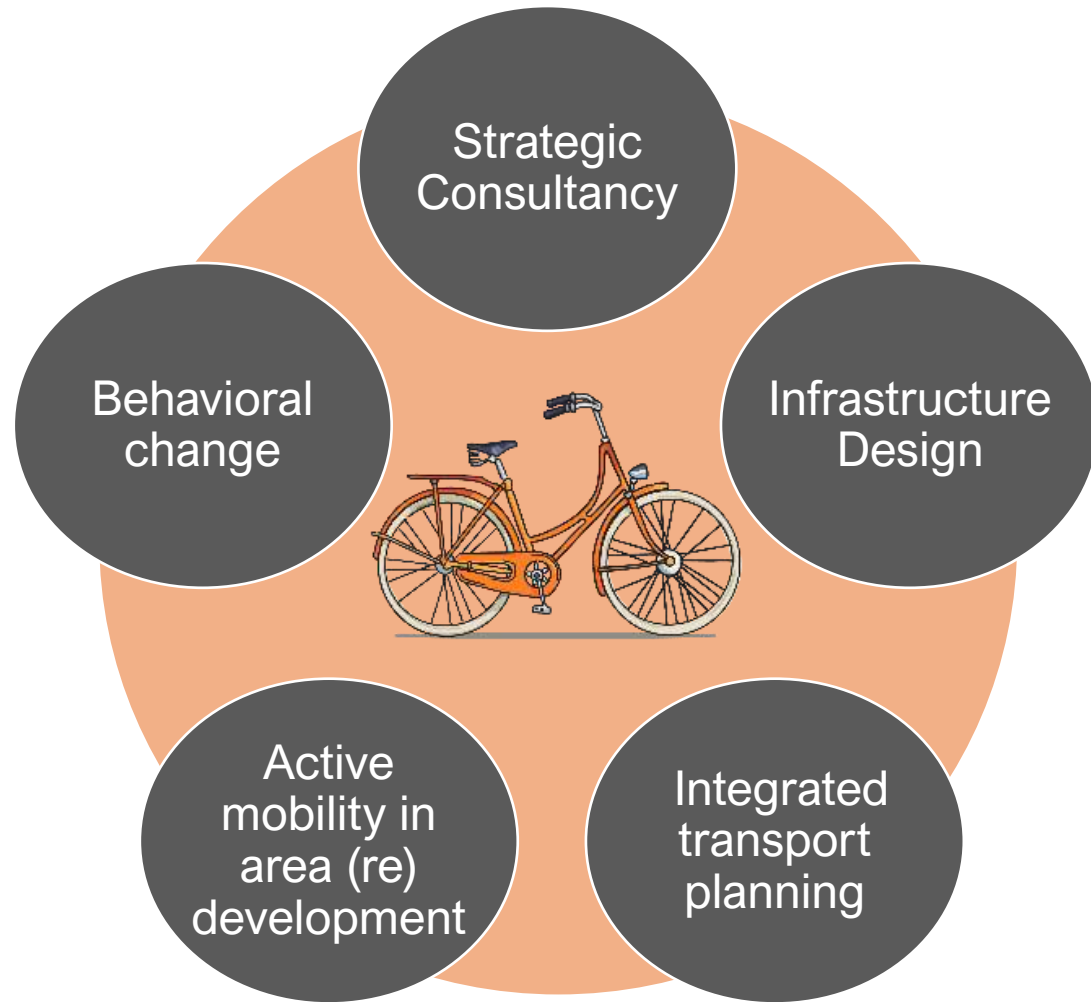
Euro revenue in 2021

Focusing on where we can maximize impact



Moving forward, based on our strong heritage

Our fields of cycling expertise



Bicycles move differently than cars or pedestrians and must be considered as a stand-alone transportation mode.

..... or a feeder system to public transport

Bicycles expand the service radius of public transportation creating a win-win situation for each \$ invested.

Transportation Policy

Transportation Policy

STOMP Principles

Stappen
(Walking)



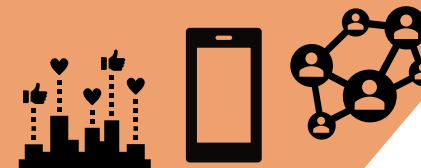
Trappen
(Bicycling)



Openbaar vervoer
(Public Transport)



MaaS (Mobility as a Service)



Privéauto (Private cars)



Transportation Policy

STOMP Principles

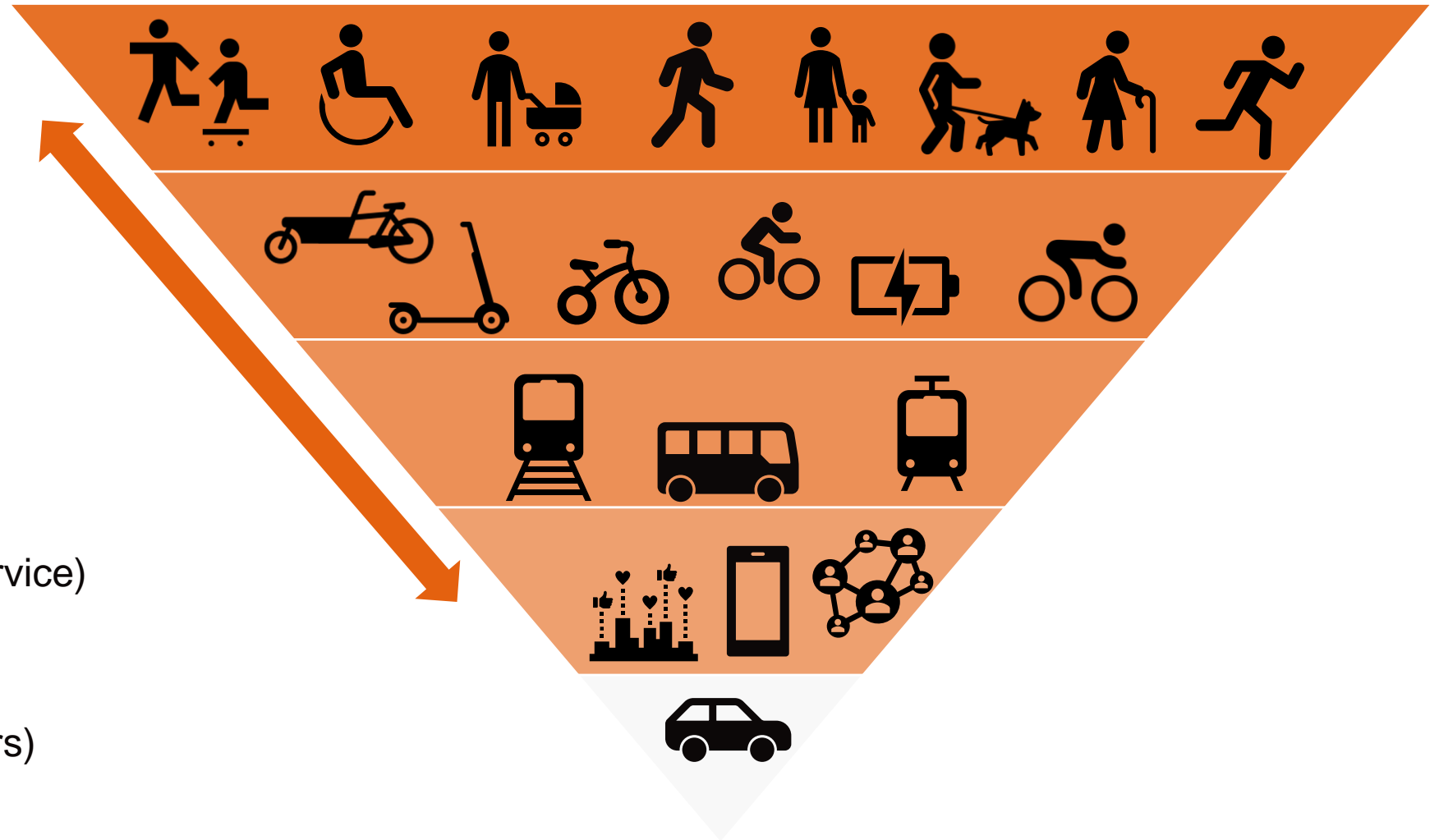
Stappen
(Walking)

Trappen
(Bicycling)

Openbaar vervoer
(Public Transport)

MaaS (Mobility as a Service)

Privéauto (Private cars)



What about personal vehicles?

Without policy interventions, people will not switch from their personal vehicle to another mode during their journey or trip (on regular trips)

Think P+R at the metro system, car parking at the main stations

Shared mobility to facilitate active transport

Flexible system

Different types of vehicles / bikes for different trip purposes

Program influences behavior



Multi-modal Network Design

Multimodal Network Design

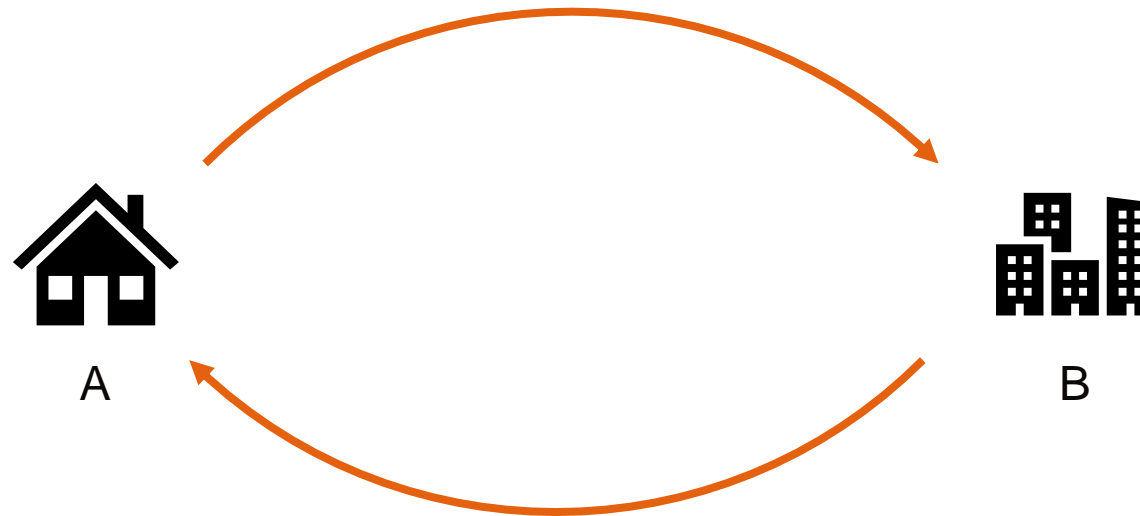
Why a network perspective?

How the network operates

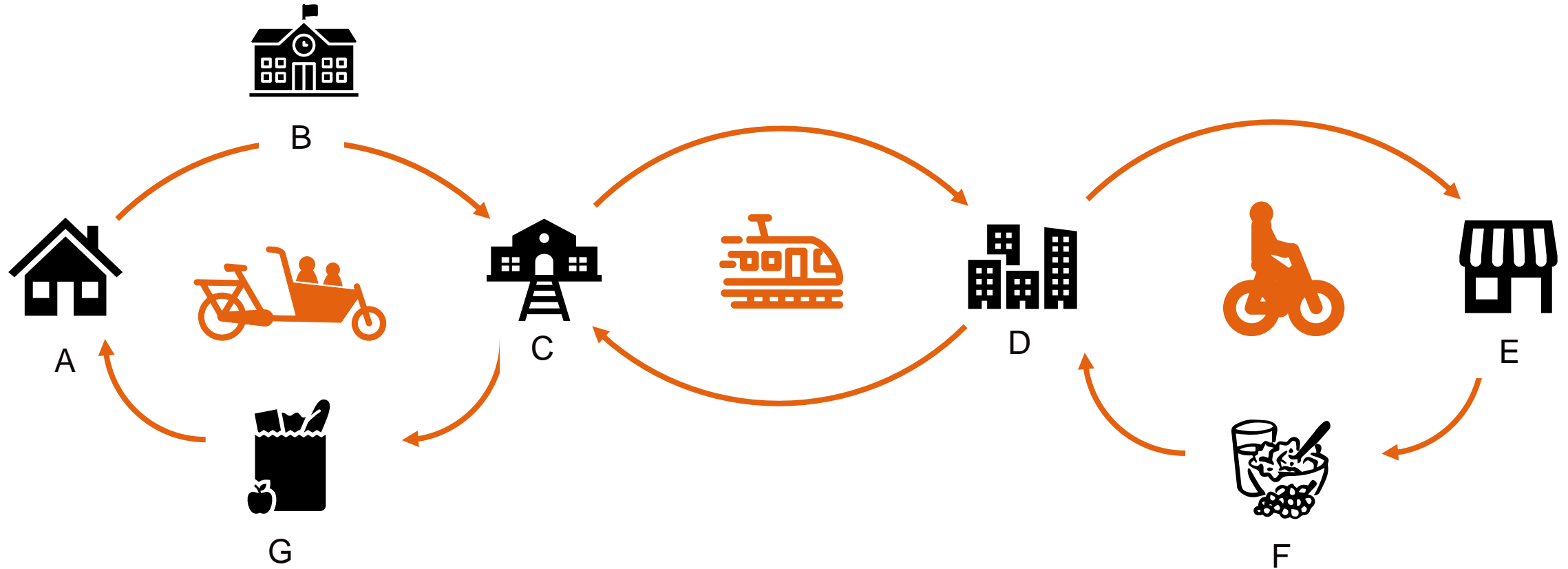
Developing a bicycle (multimodal) network



Why a network perspective?



Why a network perspective?

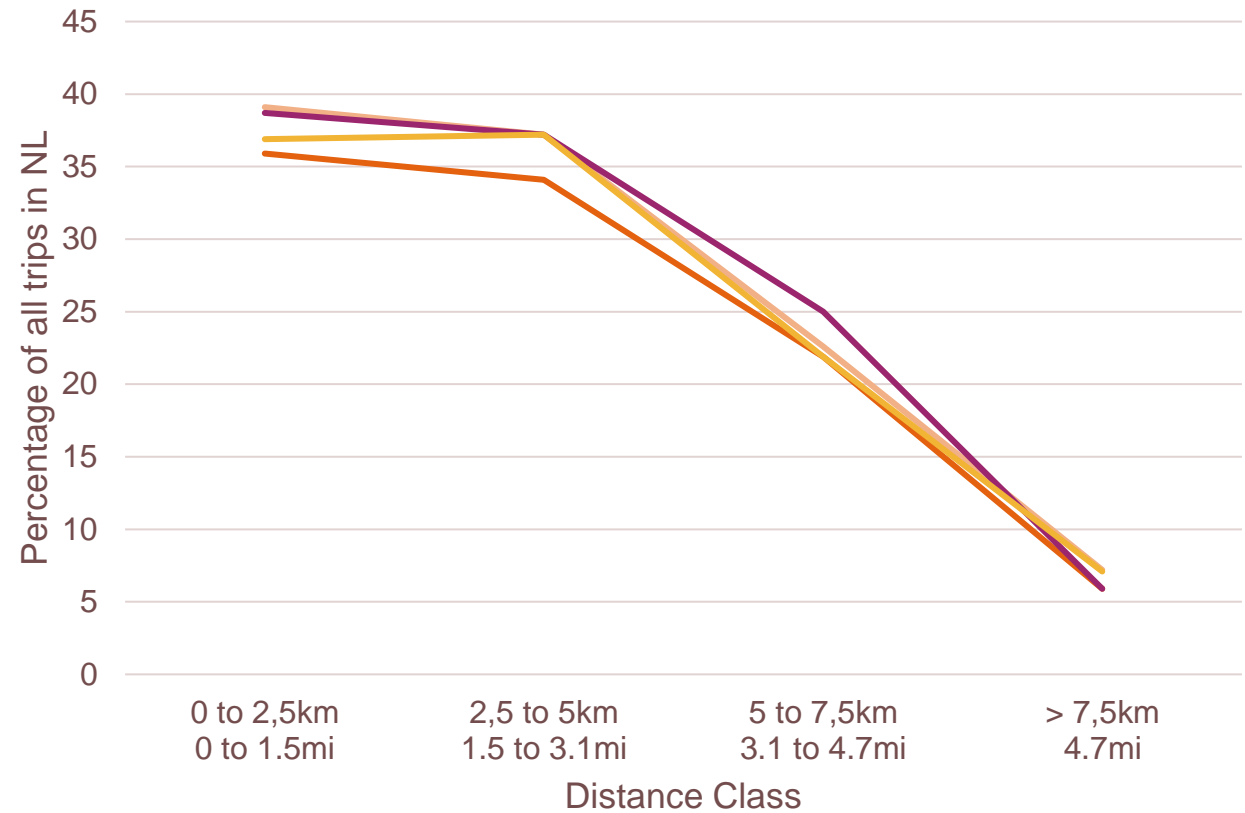


Why a network perspective?

Average distances on a bike

25% of all trips < 5 miles are by bicycle

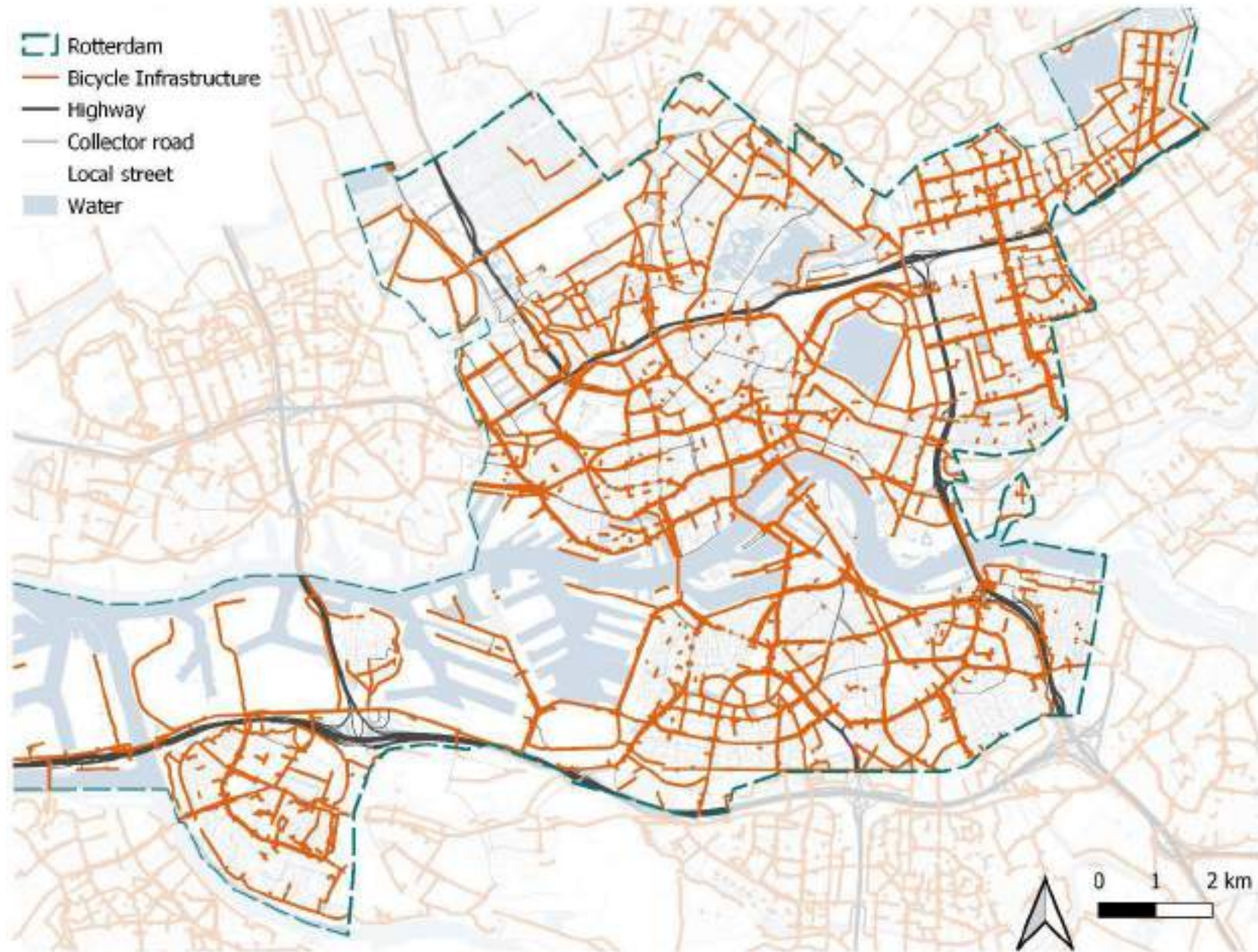
eBikes are increasing the action radius from 6.3km to 9.8km.



Why a network perspective?

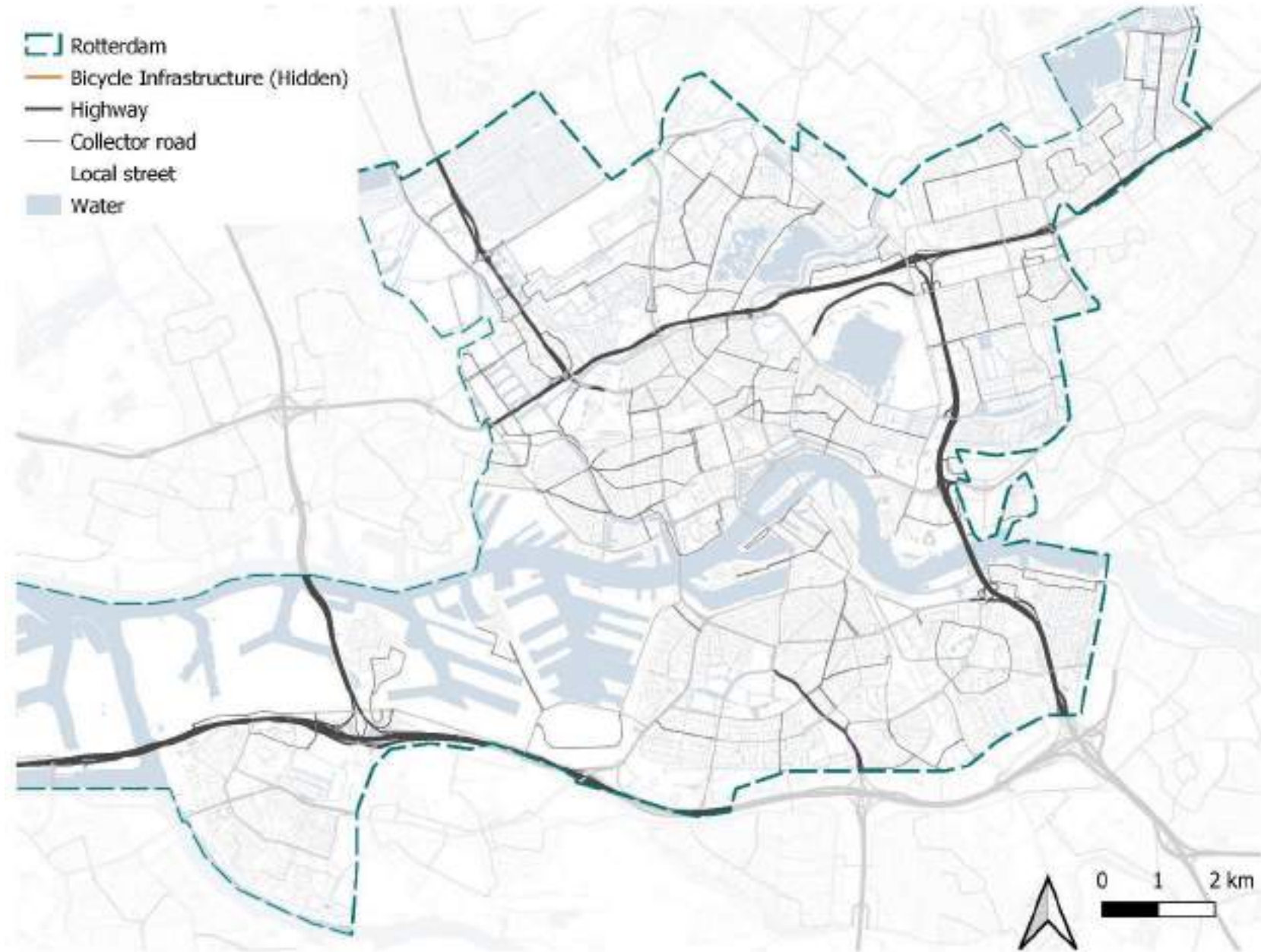
Example Rotterdam

Combination of low stress routes through neighborhoods and along main road network.



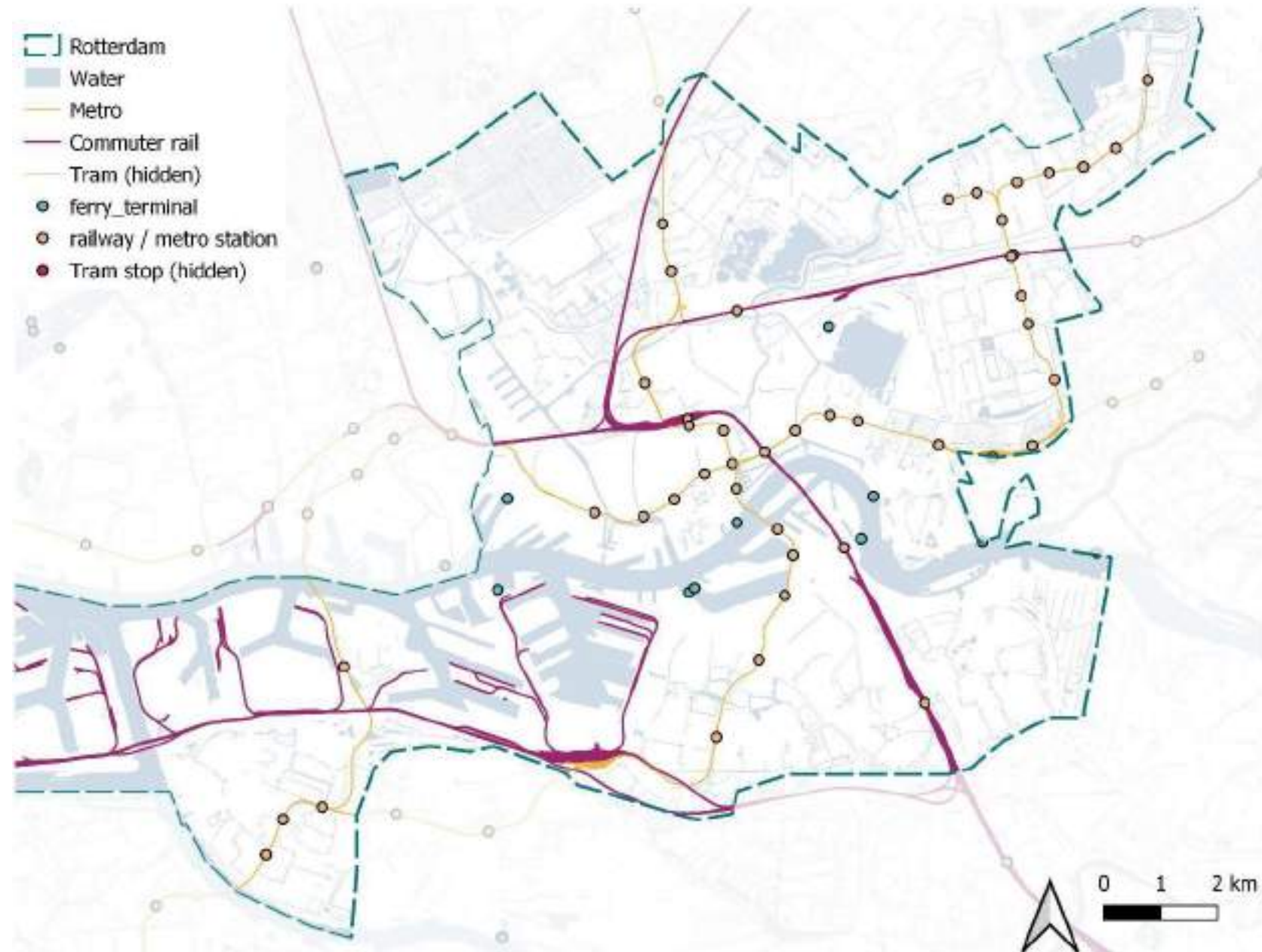
Why a network perspective?

Example Rotterdam



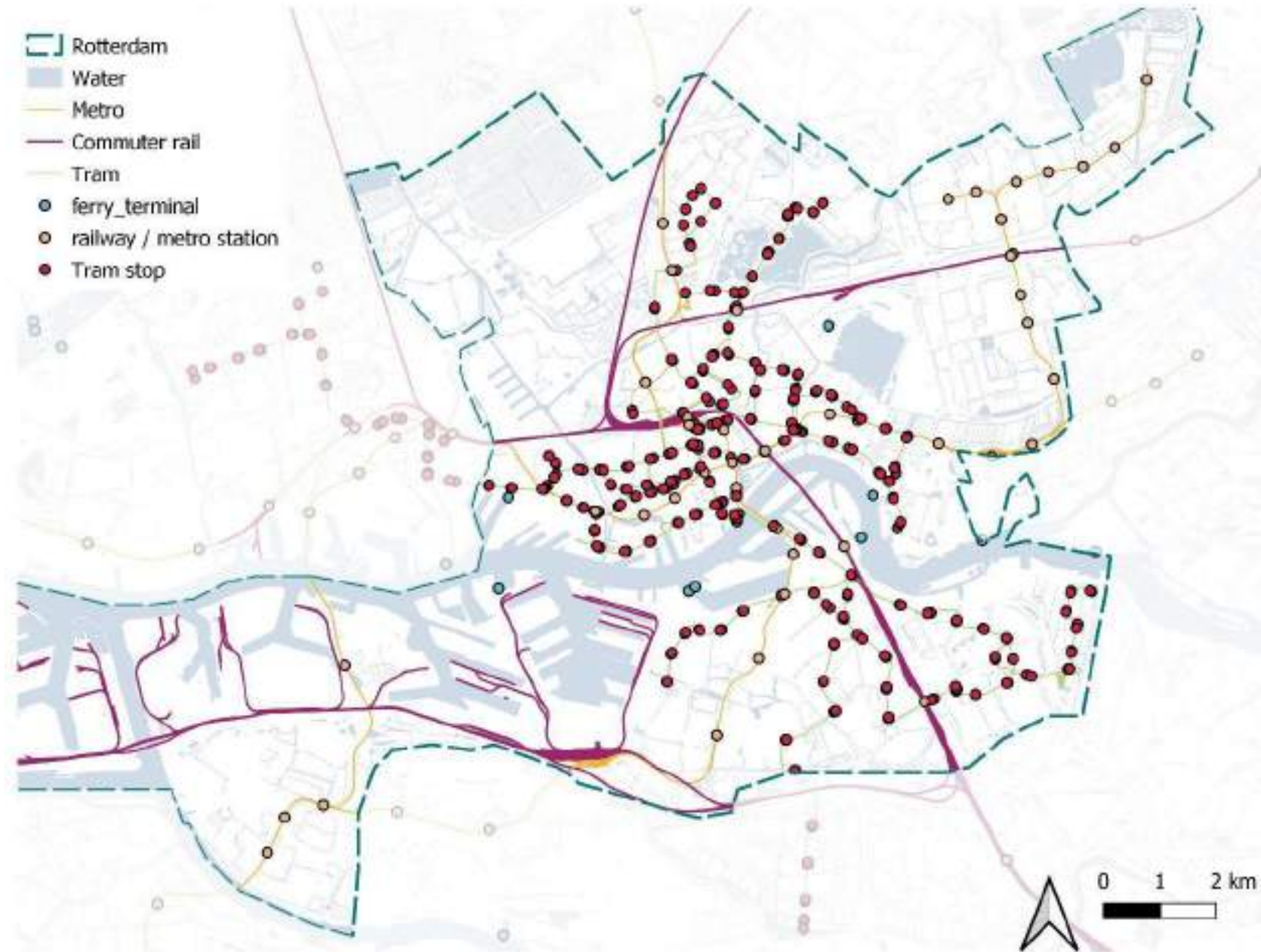
Why a network perspective?

Example Rotterdam

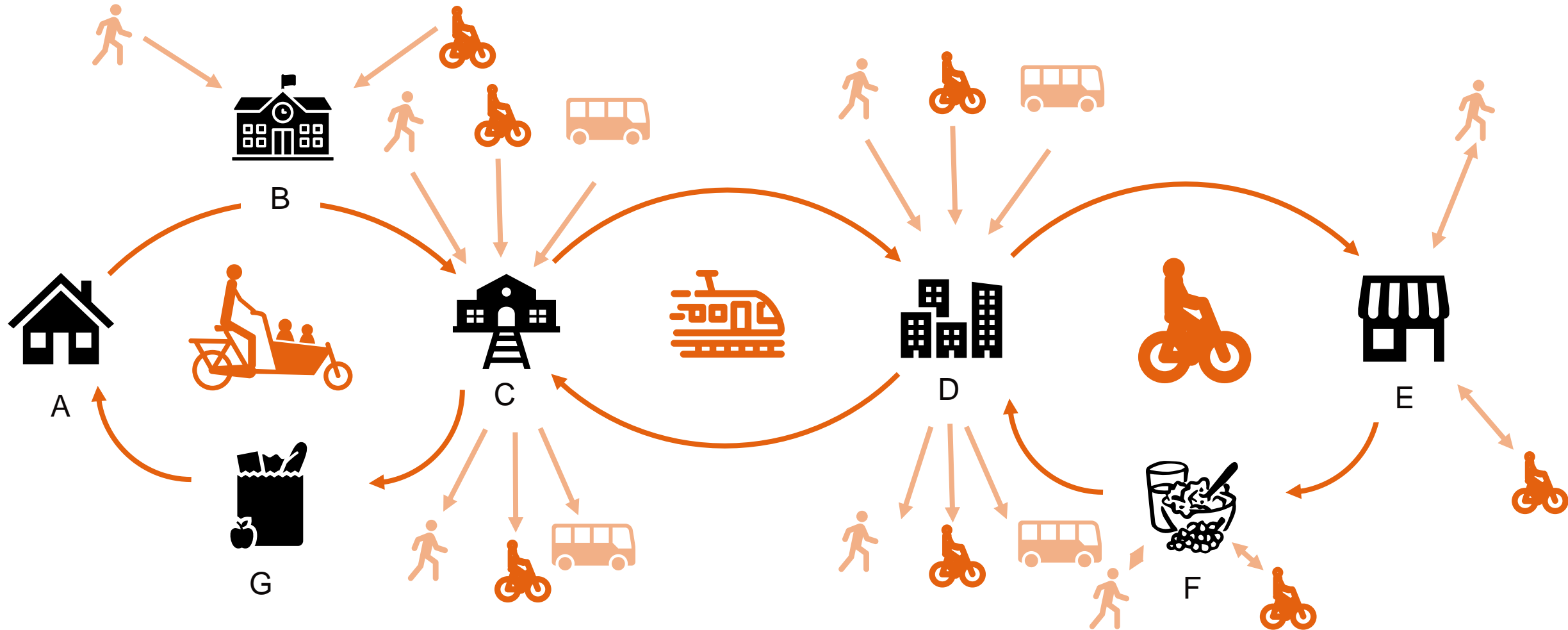


Why a network perspective?

Example Rotterdam



Why a network perspective?



Designing a bicycle network for everyone

5 Key Requirements

- Cohesive
- Direct
- Safe
- Comfortable
- Attractive



How the network operates

Requirements for the multi-modal system: **Cohesion**

Recognizable

- Consistent branding / materials for bike parking at stations
- Always know what to expect

Consistent quality

- High quality bike parking to fit standard bicycles

Freedom in route choice → multiple routes depending on specific need

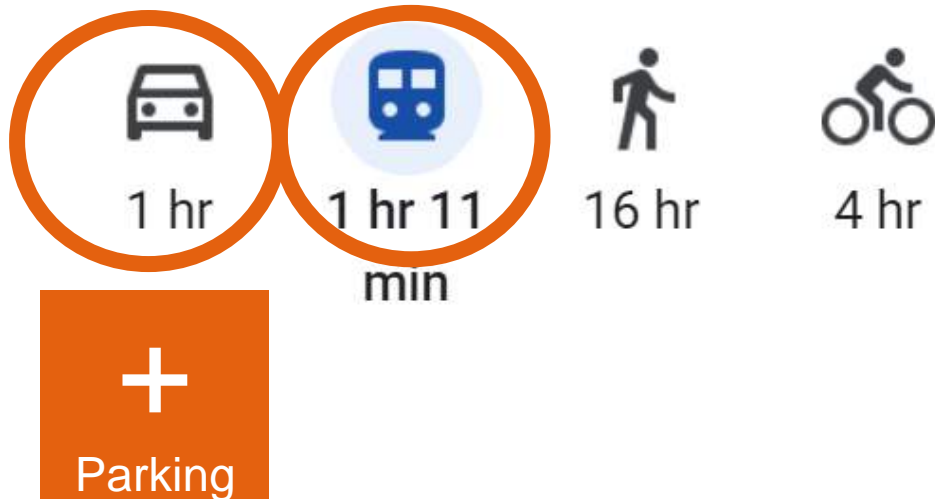
How the network operates

Requirements for the multimodal network: **Direct**

Reliable in terms of distance and time

Good competition between Bike + Public transport and Car

Different perceptions of time and distance



How the network operates

Requirements for the multimodal network: **Safe**

Good lighting for connection points and bicycle parking

“Eyes on the street” principle

How the network operates

Requirements for the multimodal network: **Comfortable**

Good connections to the public transport

Smooth transition to the different areas

How the network operates

Requirements for the multimodal network: **Attractive**

Experience – As close as possible to the station entrance

Social safety

Connection / time available

How the network operates

Bicycle parking: neighborhoods



How the network operates

Bicycle parking: new developments / offices



How the network operates

Bicycle parking: stations



Connections with Bus Network



Connections with Metro Network



Connections with Train Network



Shared Mobility

Free floating

Car sharing

Public systems

Station based

Bike sharing

Market systems

Hybrid systems

Other vehicles

Bookable

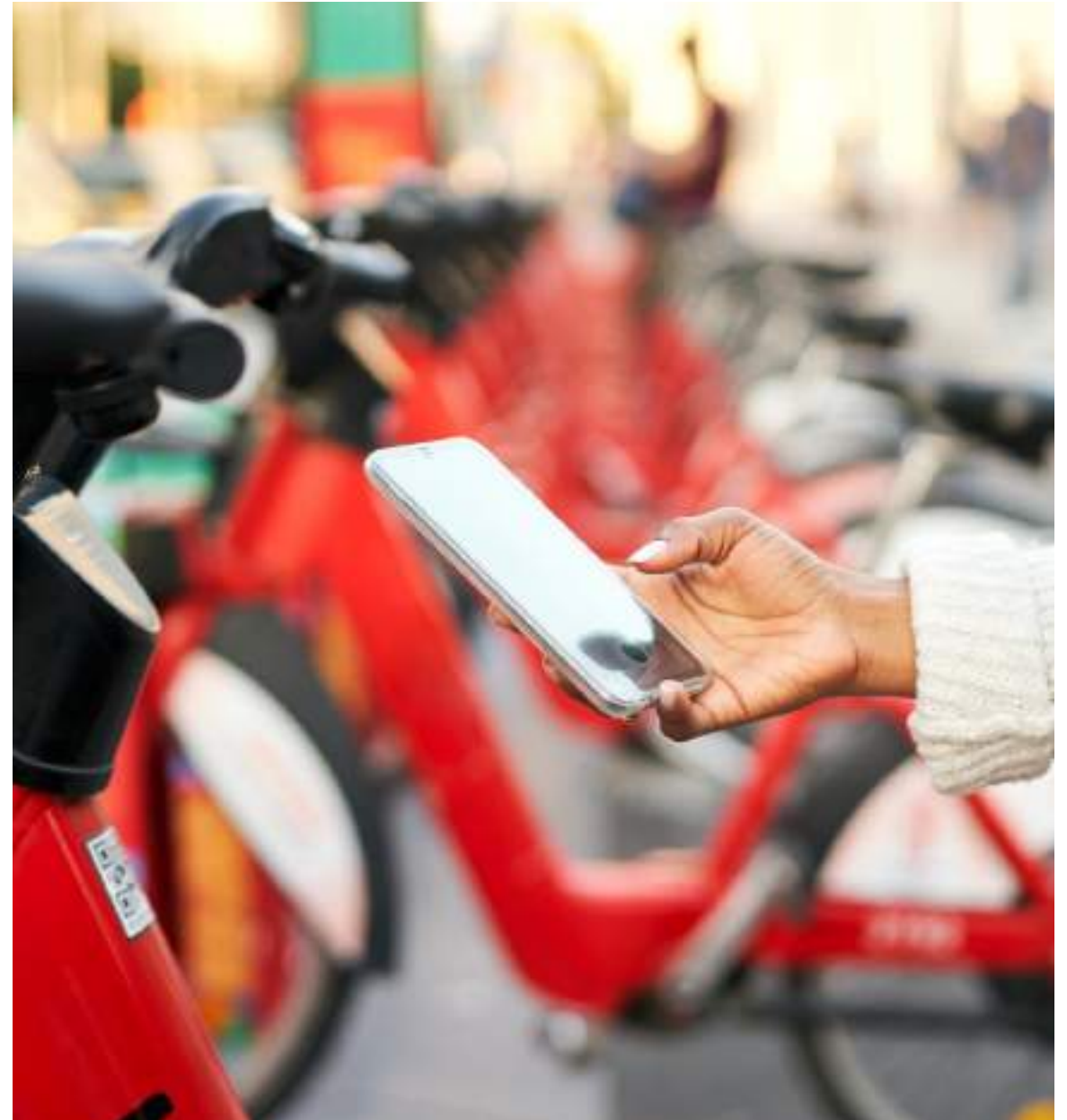
Incidental

System
balancing

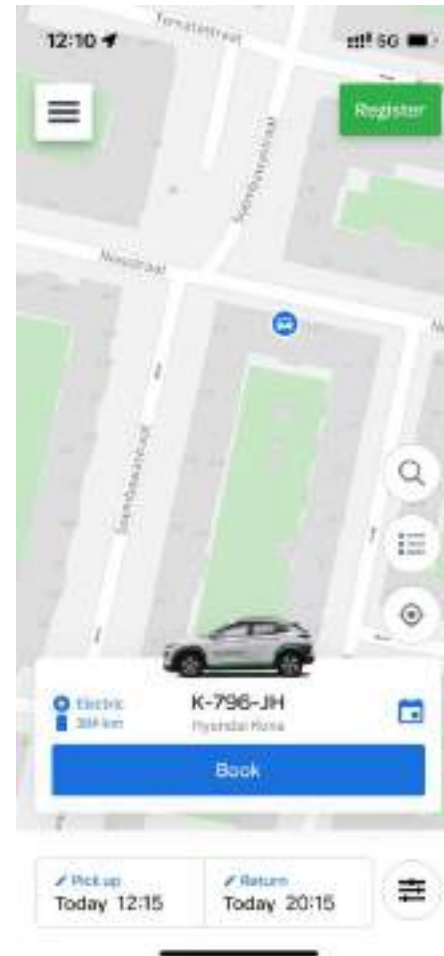
Incidental

Membership

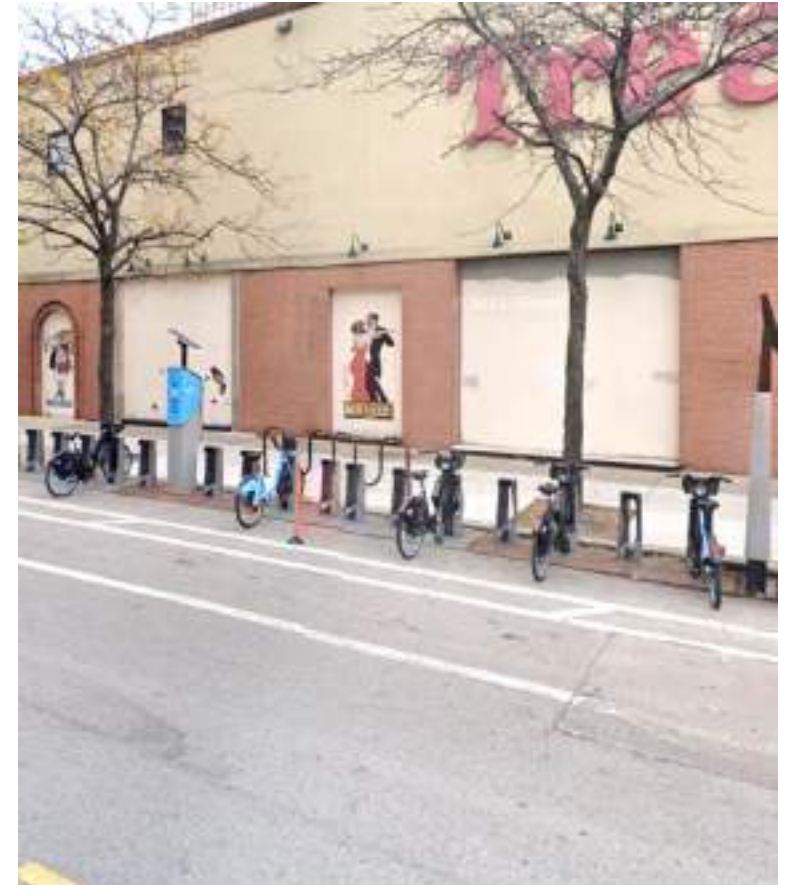
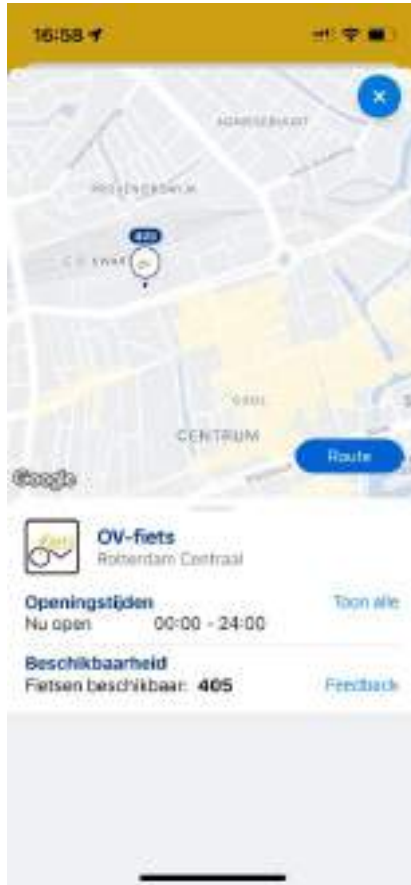
Maintenance &
Charging



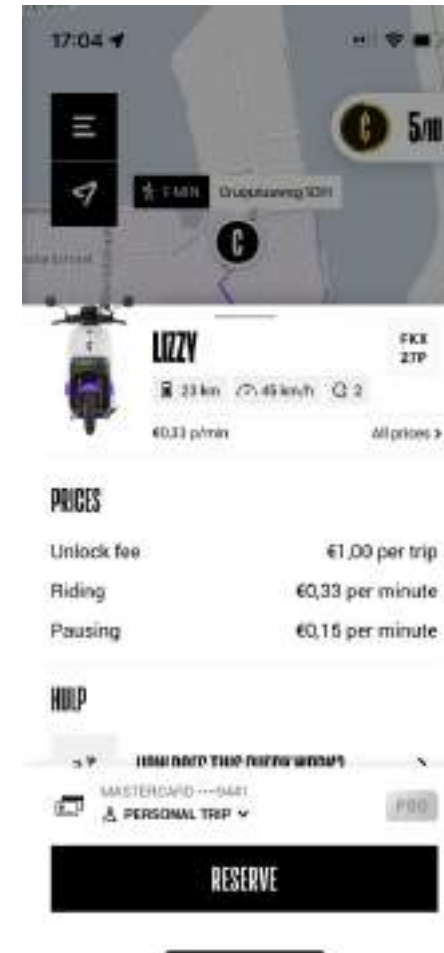
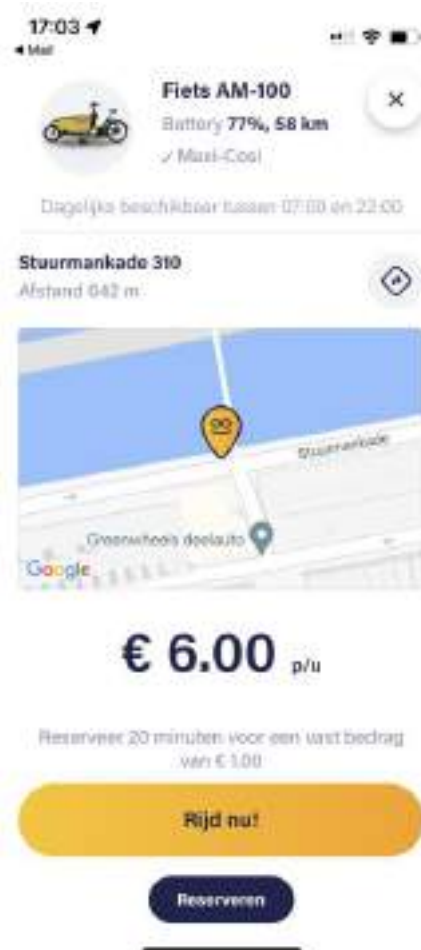
Car sharing



Shared Bikes



Other shared vehicles

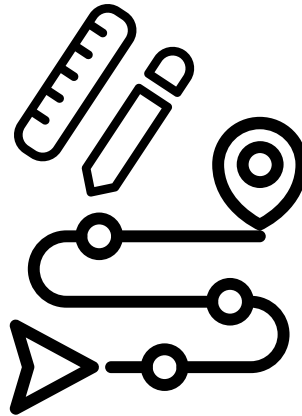


Developing a bicycle (multimodal) network

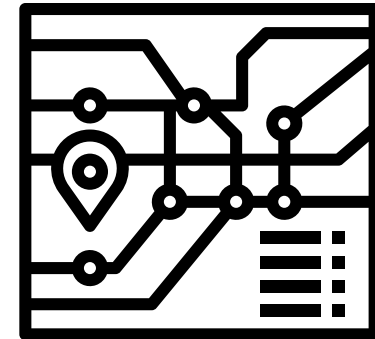
Three step process:



Determine origin and destination areas and relationships










Develop routes



Interconnect with other modes

Developing a bicycle (multimodal) network

Determine origin and destination areas and relationships

-  Residential areas
-  Offices
-  Shopping
-  Grocery stores
-  Schools
-  Transit stations
-  Restaurants
- Others?



Developing a bicycle (multimodal) network

Develop routes

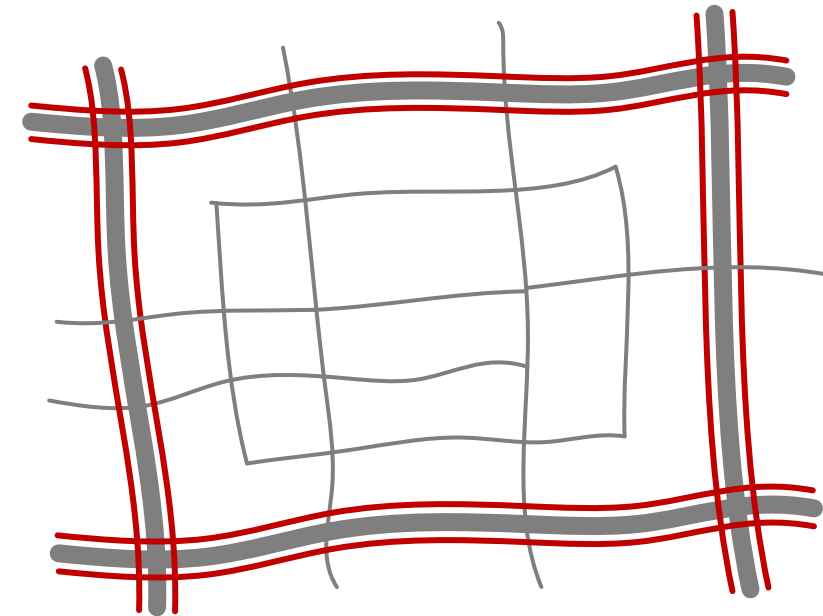
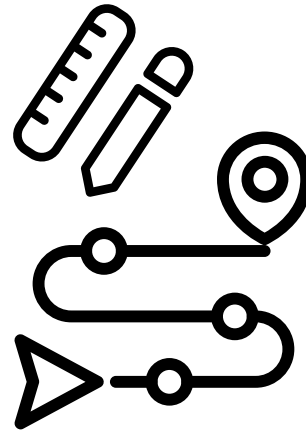
Where do people need to go?





What are the barriers?

What is the existing road network?

Roads with a flow function, distribution function, and access function

Where would a low stress (quiet) go?



-  GOW / Collector distributor network
-  Local streets
-  Bicycle infrastructure
-  Bicycle street without car pass-through

Developing a bicycle (multimodal) network

Interconnect with other modes

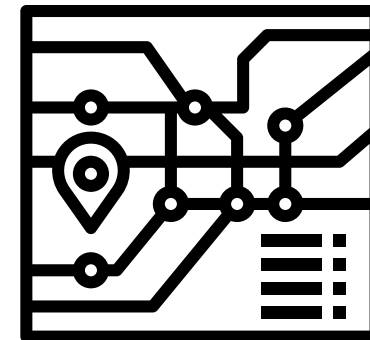
Where can the bike network connect with public transportation?

- Rail network nodes
- Major bus lines

Where can the bike network connect with recreational routes?

Where are major conflict points that need extra attention?

Where can the bike network connect with key bike parking facilities?

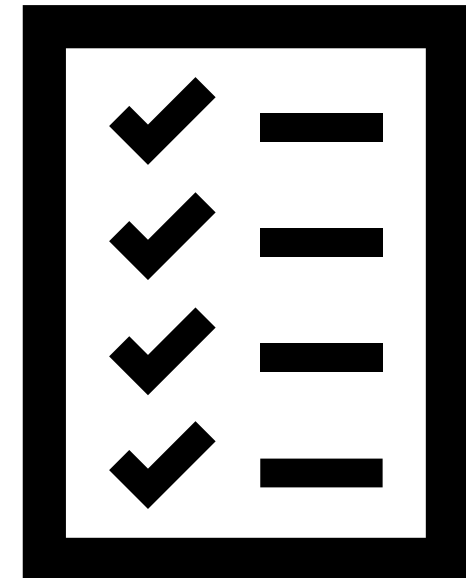


Developing a bicycle (multimodal) network

Checklist

Is the network:

- Cohesive?
- Direct?
 - In time
 - In distance
- Safe?
- Comfortable?
- Attractive?



Contact us



Alex van Gent

Active Transportation Lead

Marco.Mulder@arcadis.com



Matt Bearden

Active Transportation Consultant

Matthew.Bearden@arcadis.com

Arcadis. Improving quality of life.



**DUTCH
CYCLING
EMBASSY**



STREET

Integrated network planning, inclusive street design

Dick van Veen

May 2024

Who am I?



dickvanveen STREET DESIGN PUBLIC SPACE

Urban Designer & Traffic Engineer

Working as an independent consultant

Over 20 years of experience designing walkable, traffic calmed streets, bicycle lanes, safe intersections and roundabouts, and complete bicycle networks, in the Netherlands, Europe, North America.

Living just south of Amsterdam, NL.

Member of the Dutch Cycling Embassy



Typical bicycle lanes in the Netherlands



Cyclists are merely wheeled pedestrians



Cyclists are merely wheeled pedestrians



Cyclists are merely wheeled pedestrians



slowzone

walking

meeting

selling

chatting

looking

...

fastzone

car driving

cycling...

parking...

Cyclists are merely wheeled pedestrians



Cyclists are merely wheeled pedestrians



slowzone

walking
cycling
parking

meeting
selling
chatting
looking

...

fastzone

car driving

slowzone

walking
cycling
parking

meeting
selling
chatting
looking

...

From Vision Zero

to

Integrated networks

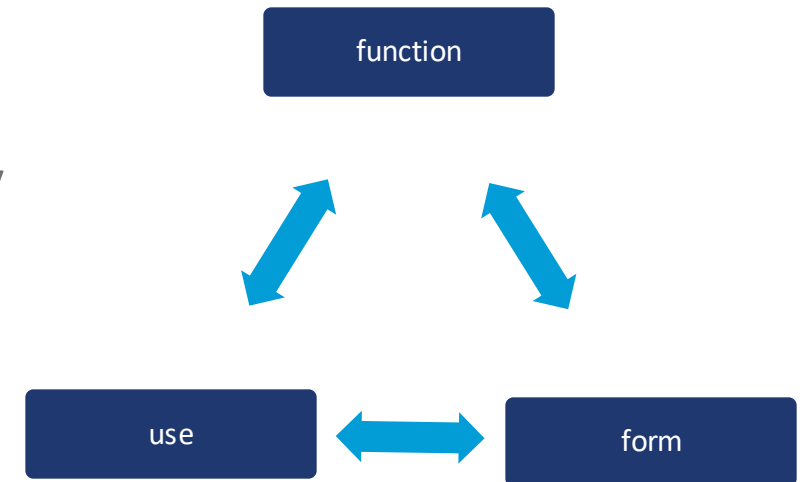
to

Context sensitive design

Traffic Safety as the main national policy

- In Netherlands (from 2017): 'Sustainable Safety' is the shared initiative from national, provincial and municipal governments.
- *It is unethical to accept traffic incidents in a modern day traffic system.*
- A pro-active approach is taken to prevent accidents from happening, where *Form, Function and Use are in balance.*
- With this safety approach, (environmental) sustainability and accessibility (equal access) are 'build in'
- *This leads to: safer streets (lower speeds, less (and less severe) incidents)
Livable places (downgraded streets are better places)
Sustainable traffic system (more cycling, less driving)*

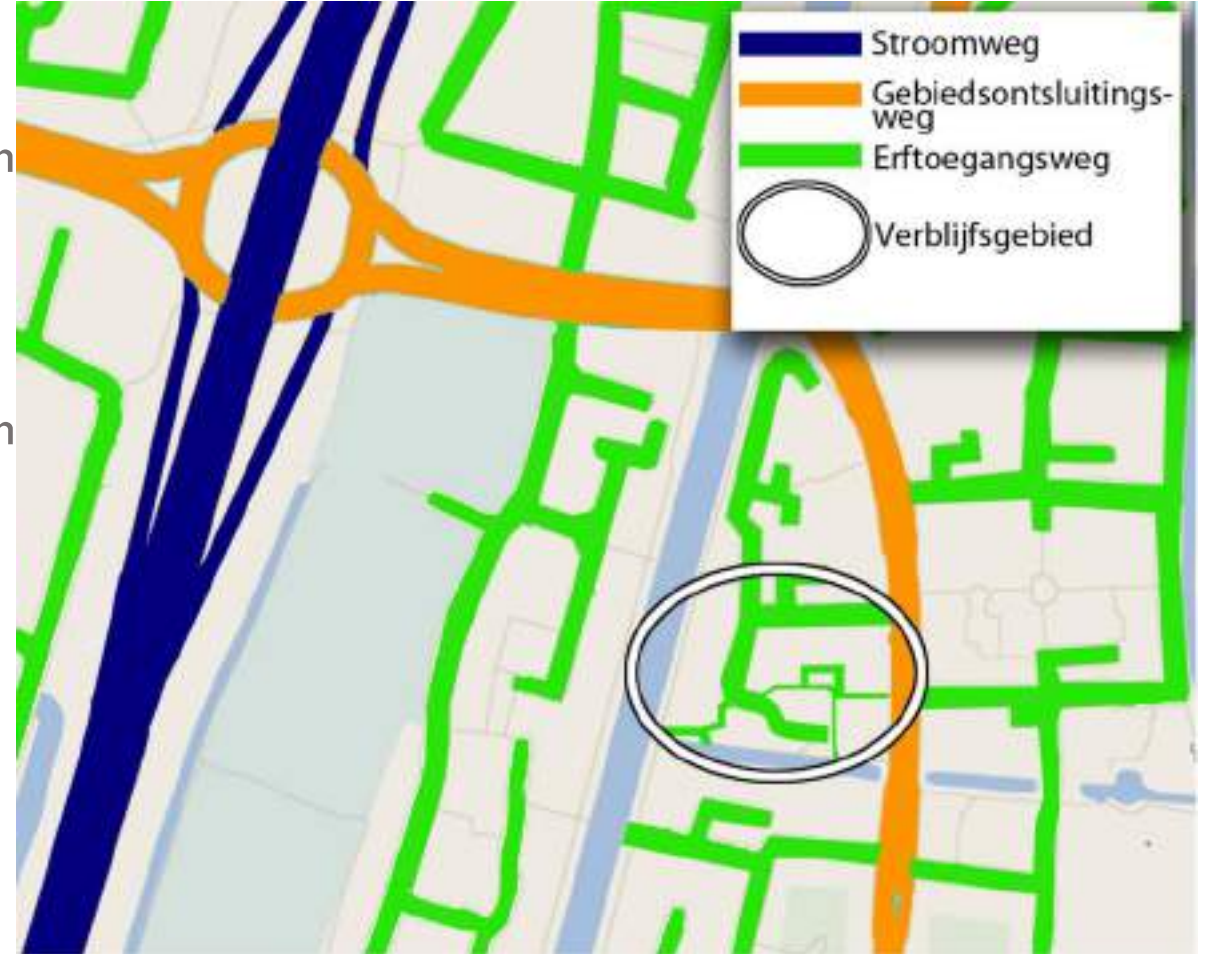
VISION ZERO 



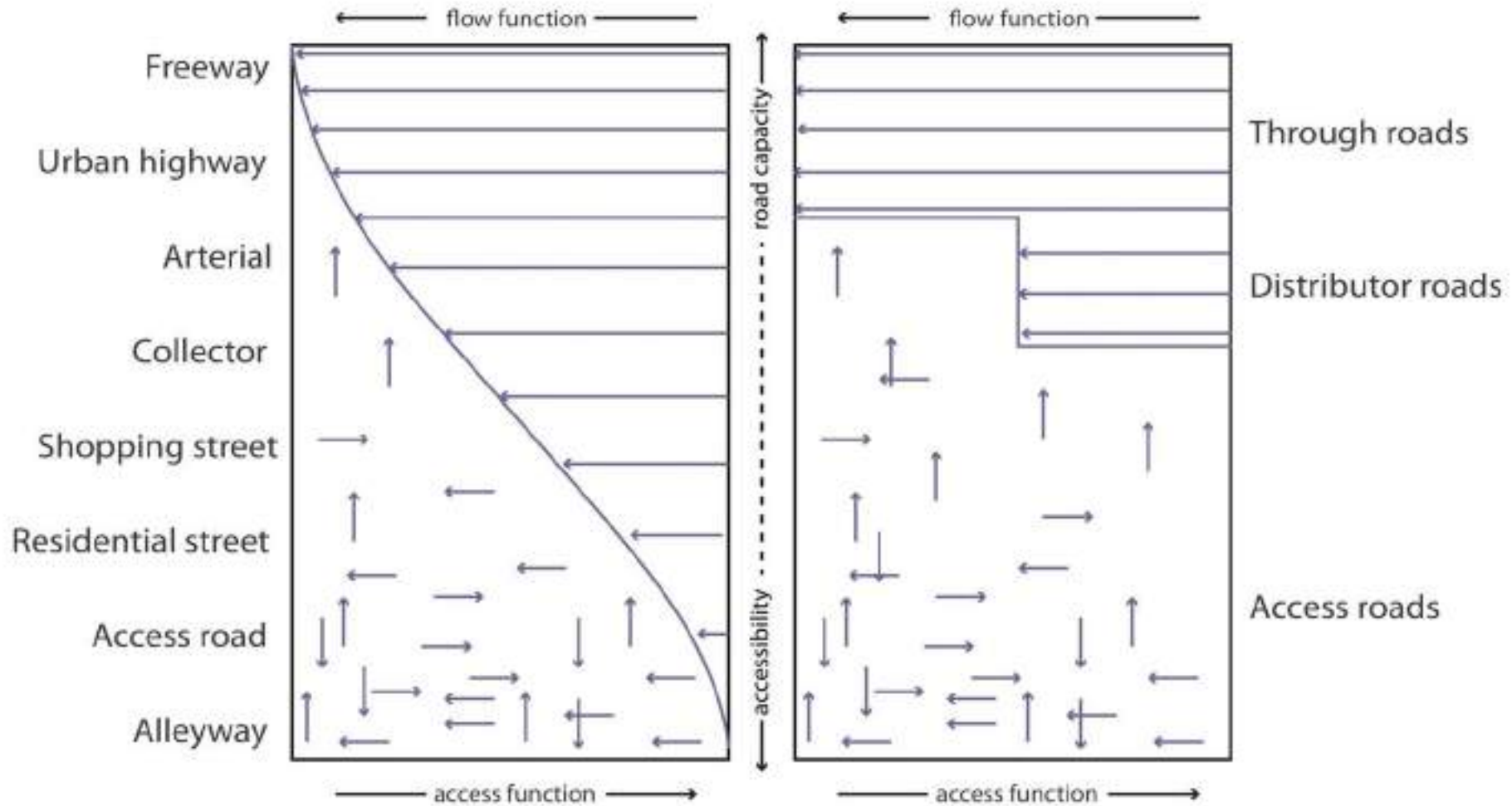
Traffic Safety as the main national policy

- Based on 3 main foundations:

1. **Functionality** of roads (categorization per function in transport and spatial network)
2. **Homogeneity** of mass and/or speed and direction (mix when you can, separate when you must)
3. **Predictability** of road course and road user behaviour by a recognisable road design.



Sustainable Safety: traffic safety policy



Road categorization

Highway



Urban highway



Network level separation

Connector road



Arterial road



Separated bike track

Rural road



Local street



Mixed traffic

Road categorization

Highway



Urban highway



Network level separation

Connector road



Arterial road



Separated bike track

Rural road



Local street



Mixed traffic

Road categorization

Highway



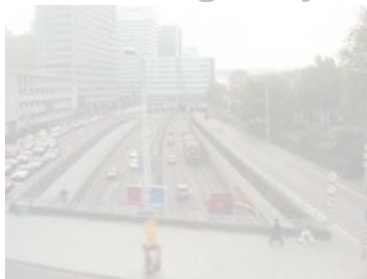
Connector road



Rural road



Urban highway



Arterial road



Local street



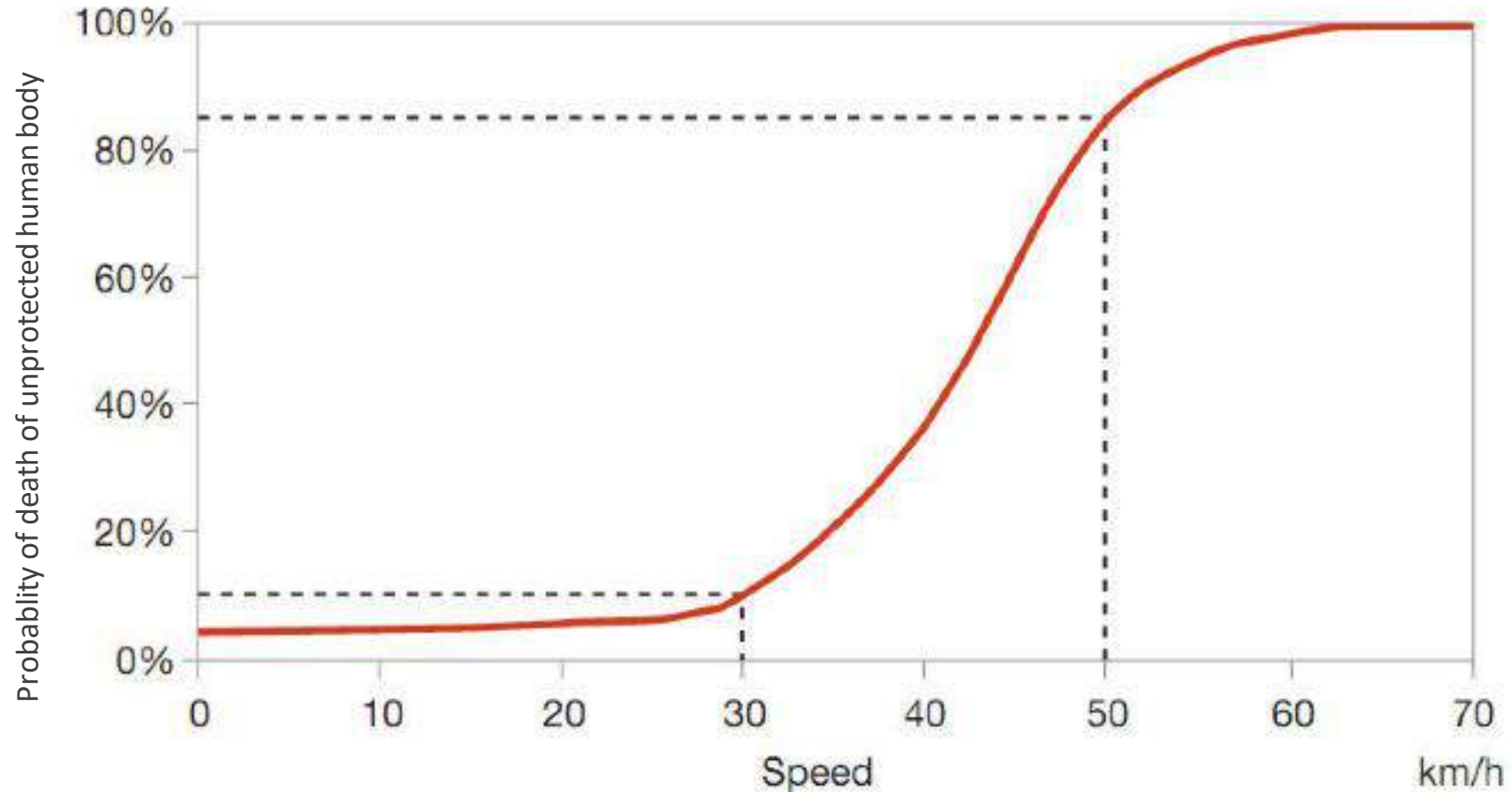
Network level separation

Separated bike track

Mixed traffic

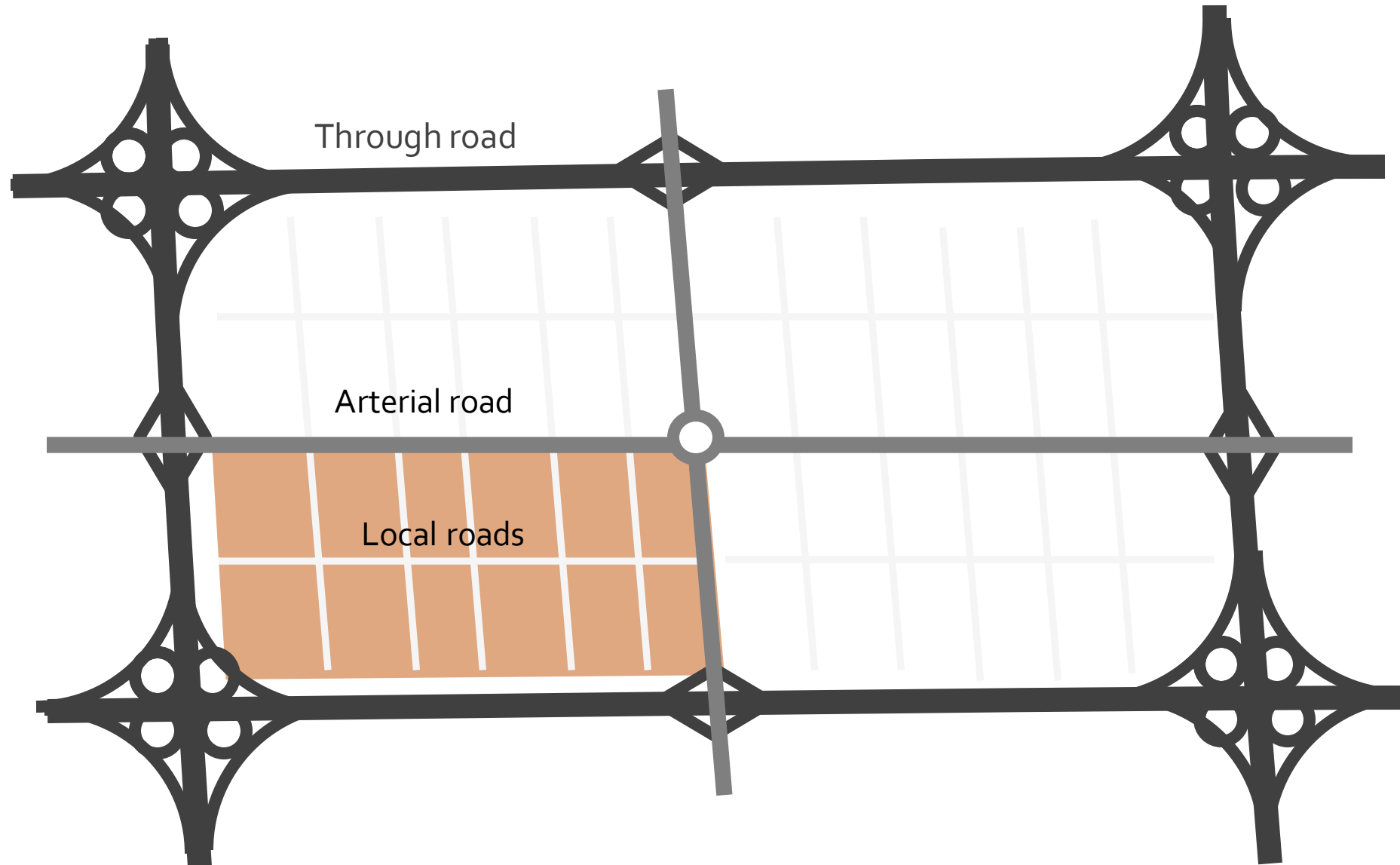
Mix when you can, separate when you must.

Mixing? Design for vulnerable road users



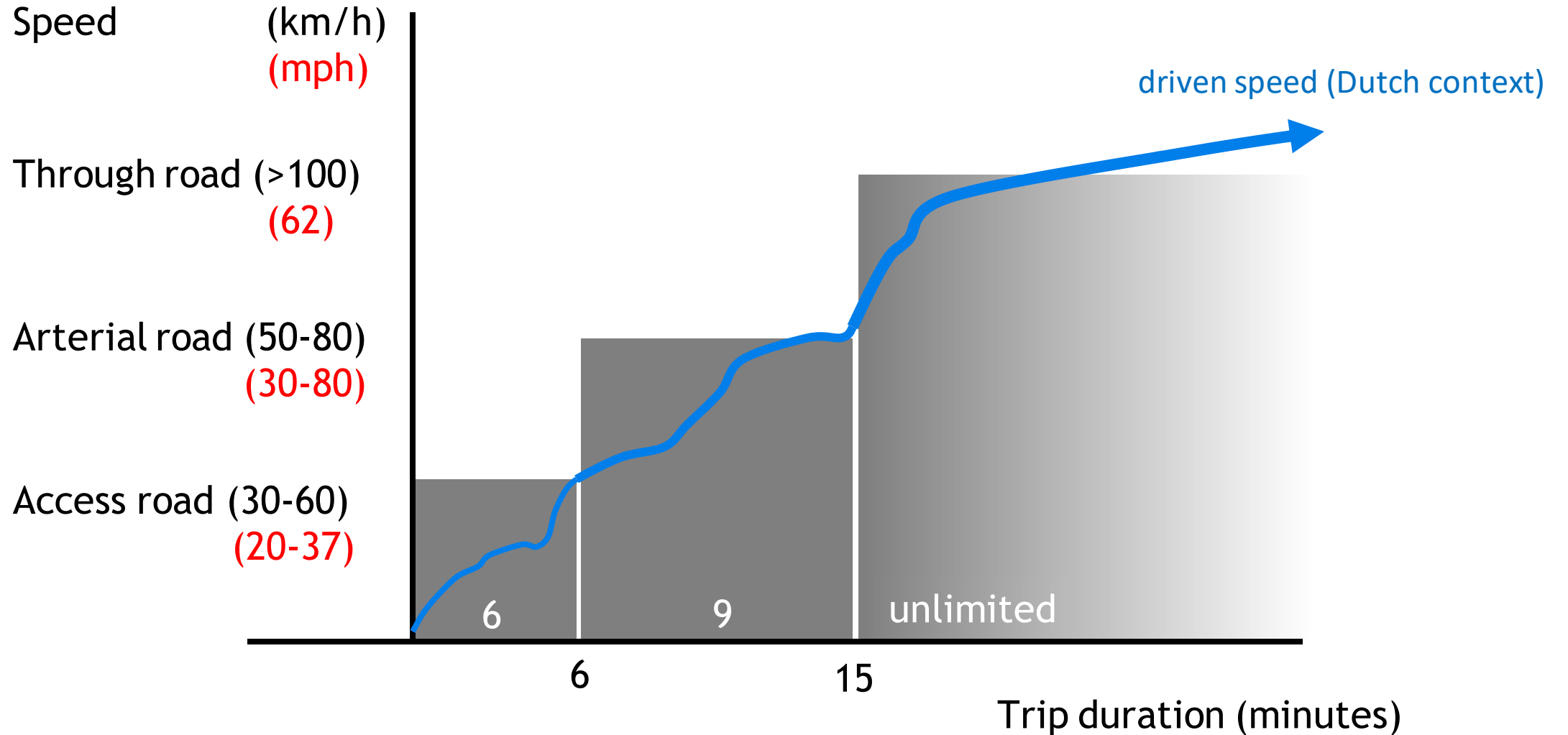
Source: OECD/ECMT (2006)

Network hierarchy

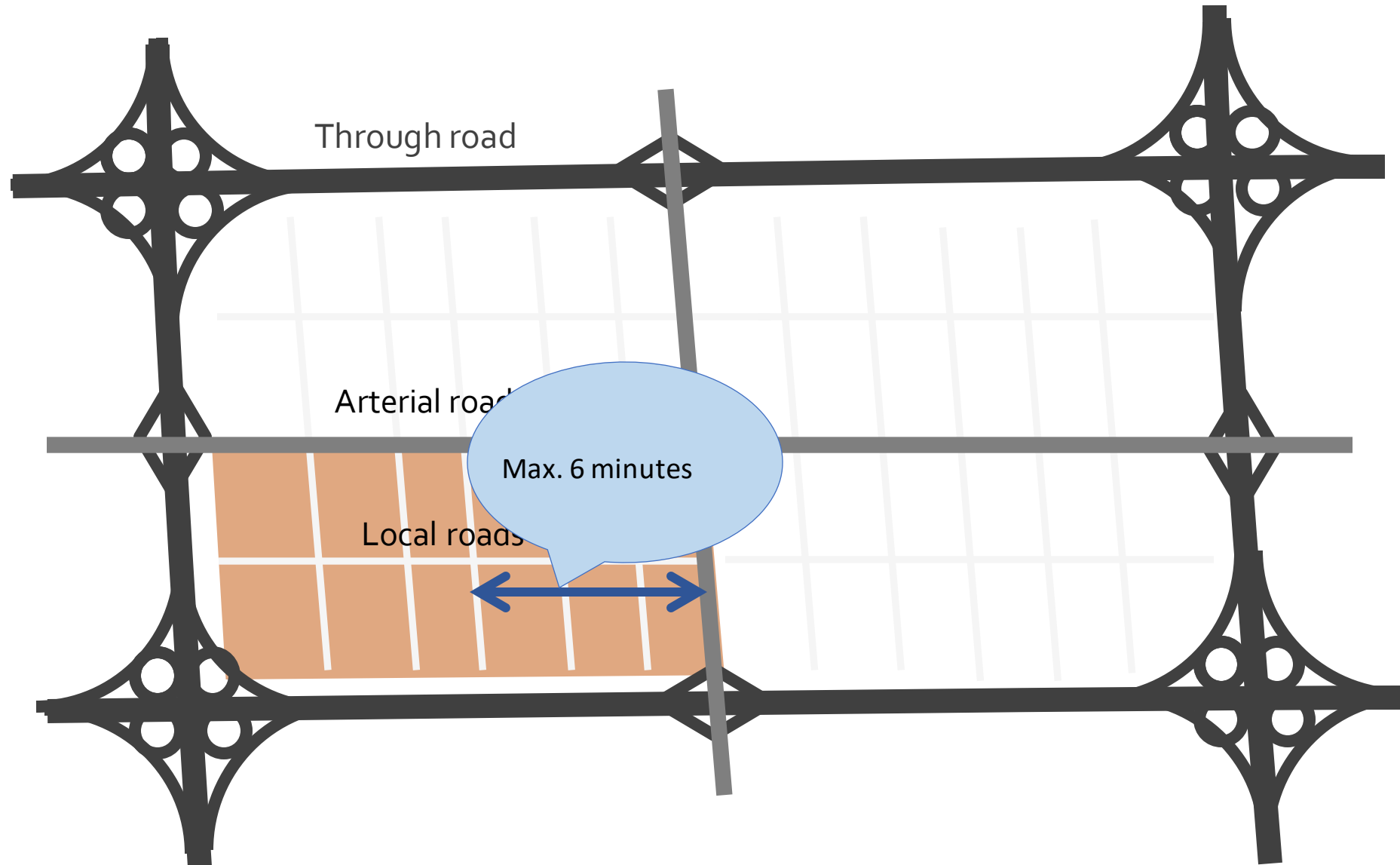


Determine the network link size

Trip duration determines the mesh size of the network (staircase of Monderman)

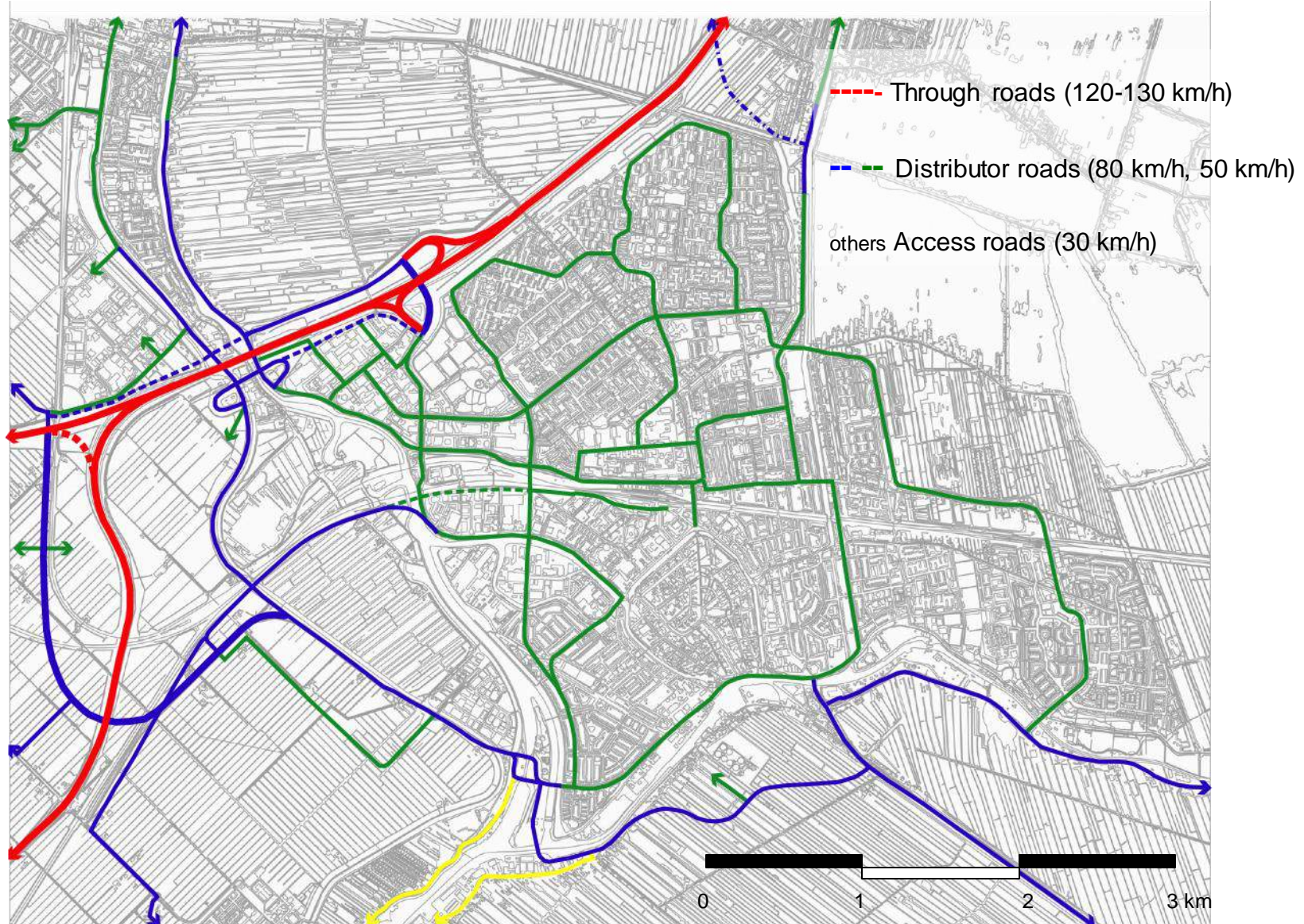


Determine the mesh width



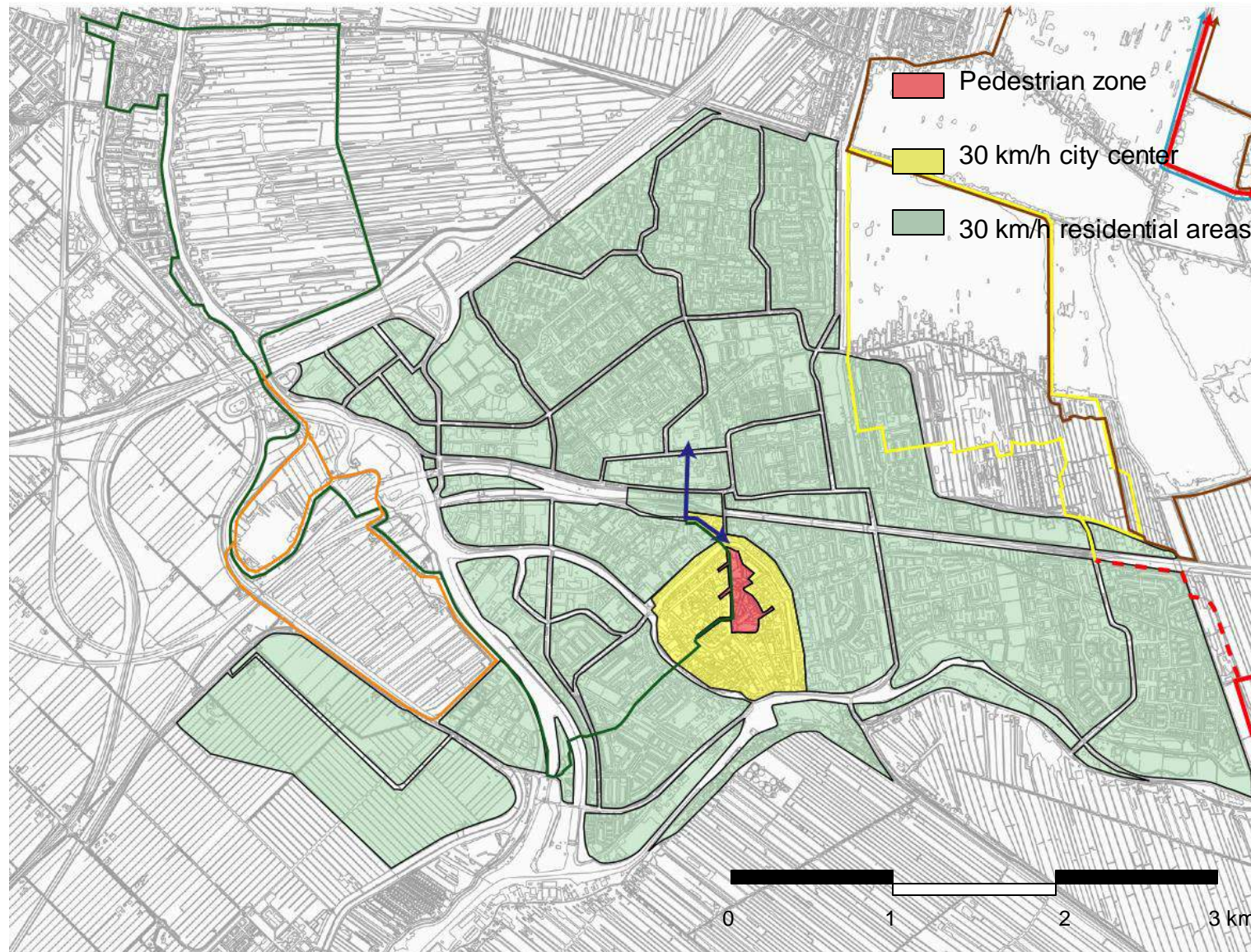
Determine the mesh width

Road categorization city of Gouda



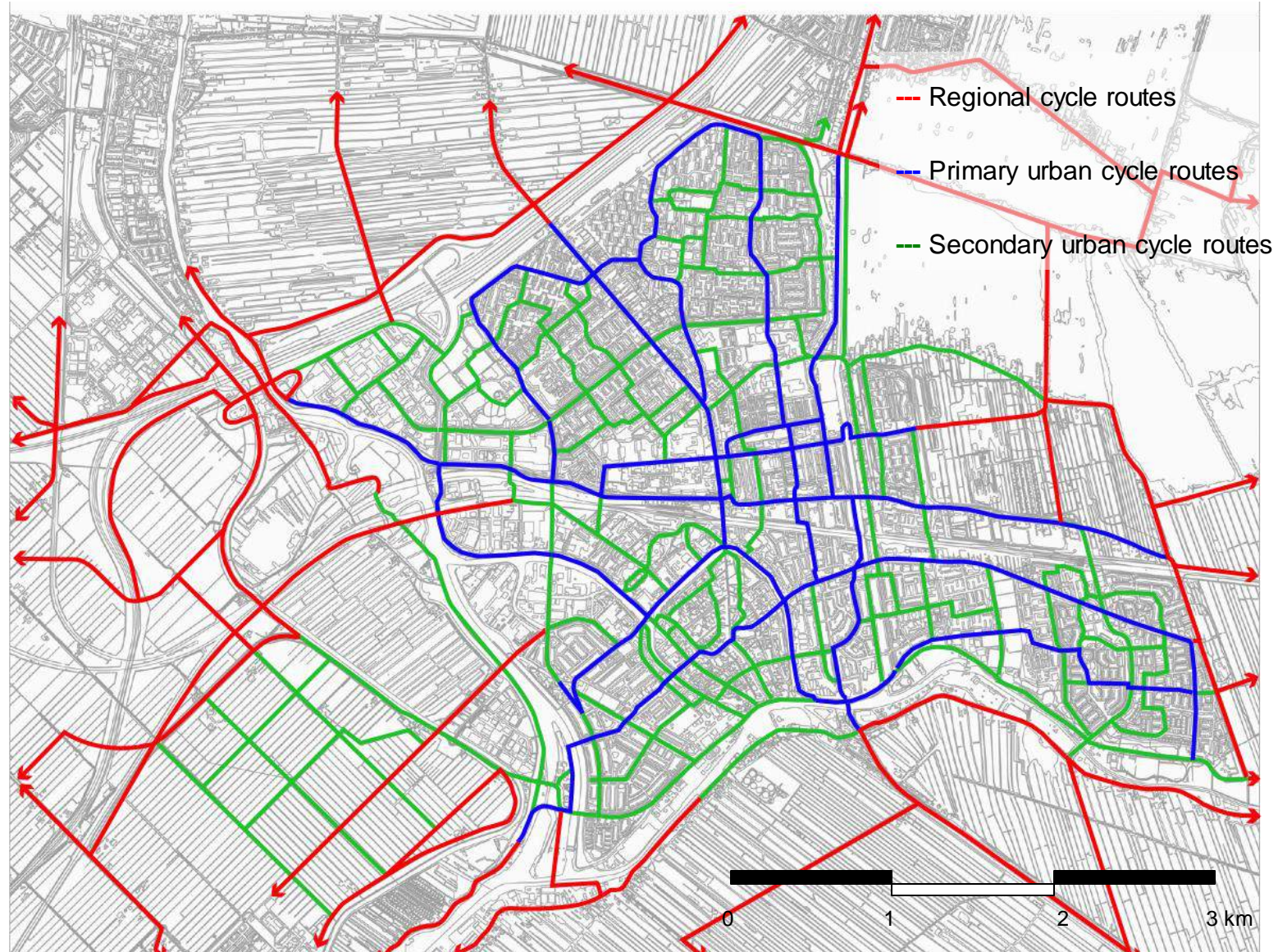
Determine the mesh width

Traffic calmed neighbourhoods, City of Gouda



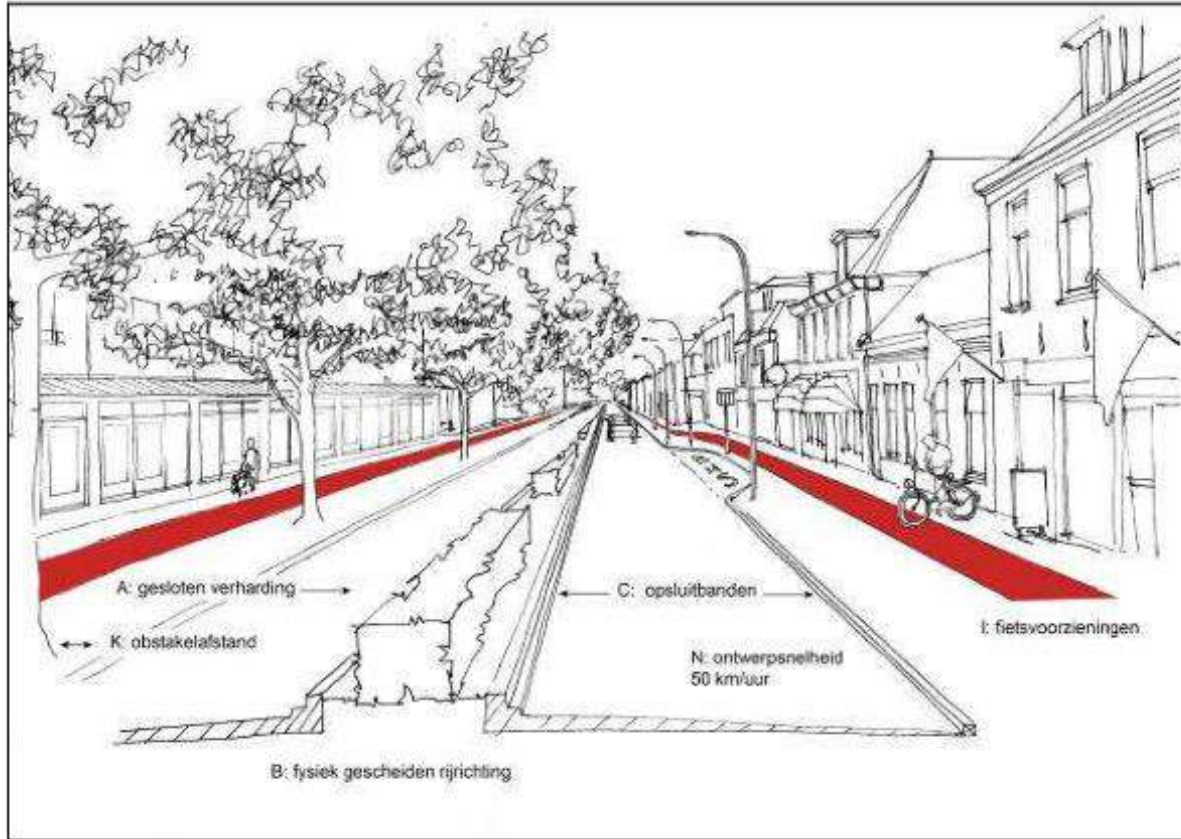
Determine the right mesh width

Cycle route categorization city of Gouda

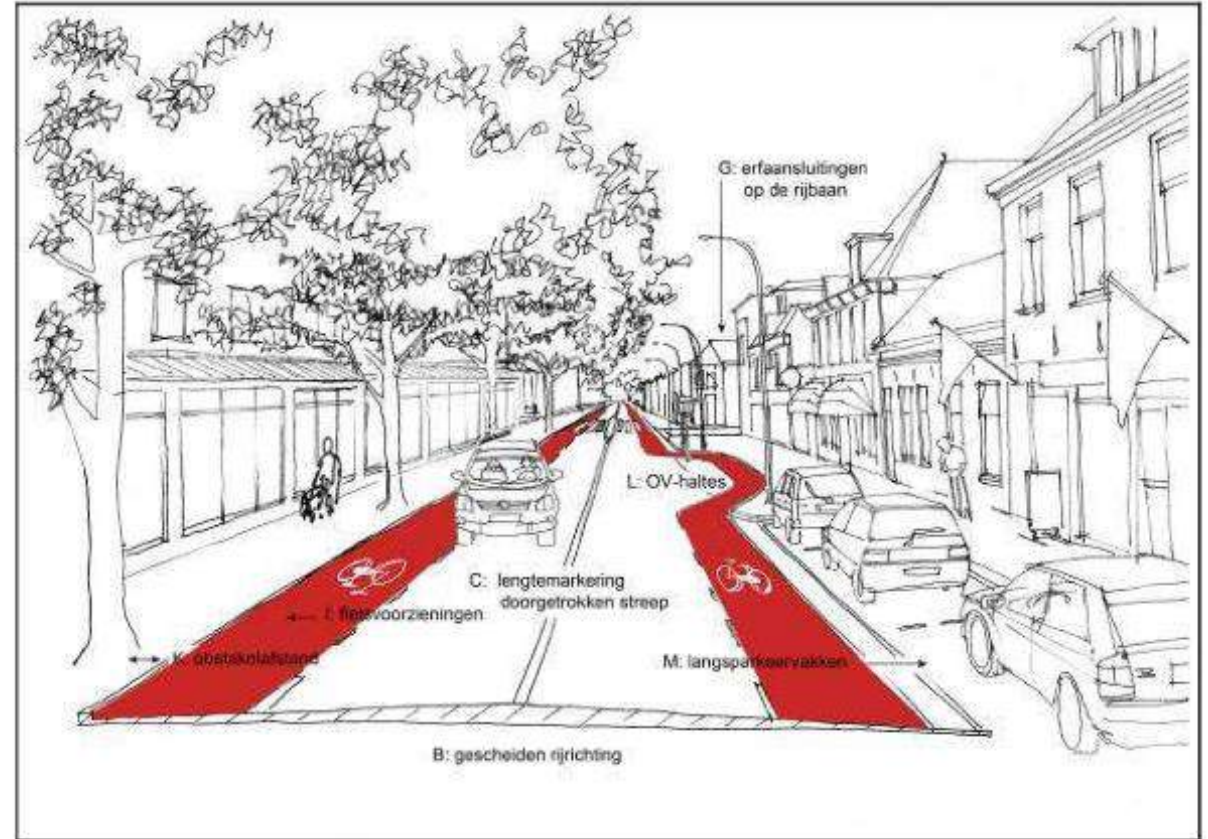


Design features Arterials: separation

30 mph roads: Arterial road, flow function



Ideal form of arterial road



Minimal form of arterial

Mix when you can, separate when you must.

- **Continuous car travel flow:** Guarantee continuous travel speeds along the corridor continuous, smooth asphalt, linear, recognizable (uniform), absence of exchanges (*parking, side streets*), absence of houses/developments.
- **Focus on through traffic:** Create a corridor which functions to transport traffic conveniently, so that traffic won't 'rat run'.
- **Separated infrastructure per mode** Higher speeds make mixing impossible; physical separation between cars (directional), bicycle users and pedestrian.
- **Hierarchy at intersections:** Intersections are prioritized, often signalized or roundabouts. Side streets 'feel' of lower order.

Continuous travel flow



Focus on through traffic



Focus on through traffic



Separation where needed



Separation where needed



Separation where needed

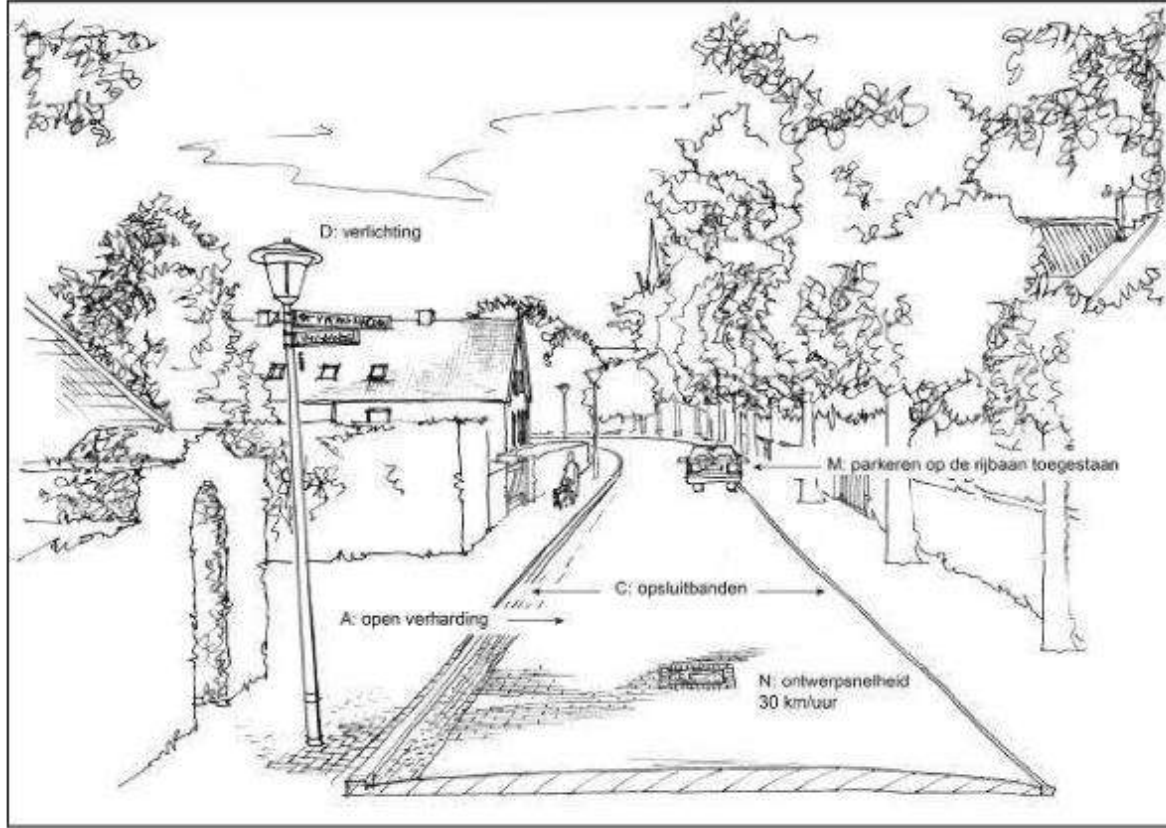


Hierarchy at intersections

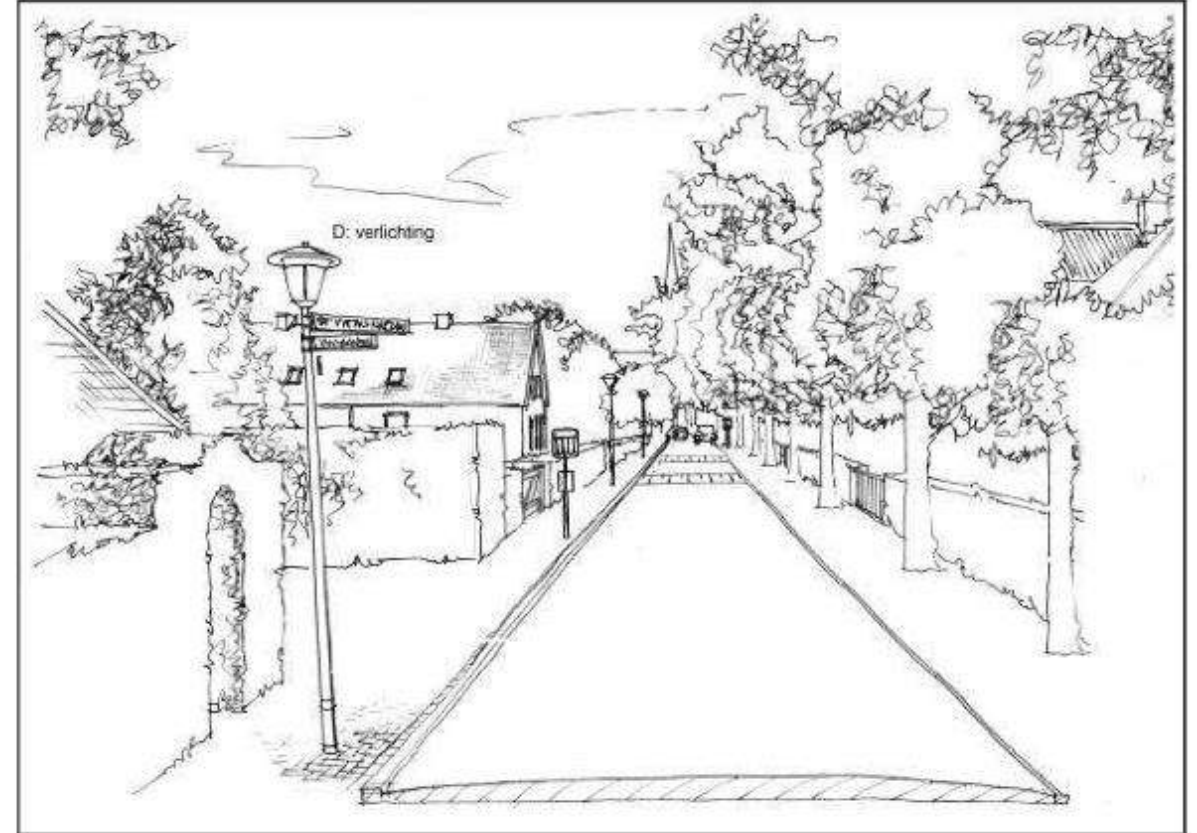


Design features Locals: mix and mingle

20 mph roads: Local streets, access function



Ideal form of local street



Minimal form of local street

Mix when you can, separate when you must.

- **Traffic calming:** Guarantee low travel speeds within the zone
narrow, non-asphalt, different coloring,
disalignments, uncommon, *subjective insecurity*
- **Prevent through traffic:** Create a network which accommodates local
traffic but is unattractive for through traffic.
- **Intuitive Gateways:** Create a logical transferpoint between to road
of different categories
- **Interaction at intersections:** Emphasize equality between roads of the
same order
- **Differentiation and non-uniform** Different textures of surface materials, subtle
suggestions, like trees, benches, angled parking, etc

Traffic calming: nice and tight



Traffic calming: Home Zones



Traffic calming: Placemaking and Shared Space



Traffic calming: bumps



Traffic calming: pinchers



Preventing through traffic



Gateways: visible hierarchy



Gateways: visible hierarchy



Equality at intersections



Equality at intersections



Forgiving bicycle infrastructure



Wider buffer/clearance zone



Visual clues at the edge of the path

Rumble and/or recovery strip (tactile difference)

Everyone makes mistakes. Outcomes should not be severe; mistakes should be forgiven.

Forgiving bicycle infrastructure



Tapered/roll-over curb

Smooth bike path surface

Everyone makes mistakes. Outcomes should not be severe; mistakes should be forgiven.

Forgiving bicycle infrastructure



Removal of bollards
Or 'announcing' them

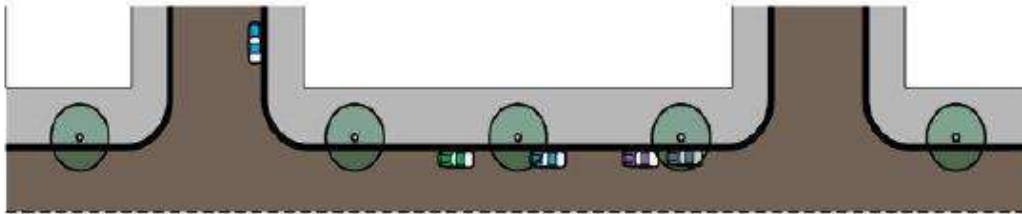
Clear road
markings

Rumble and/or
recovery strip

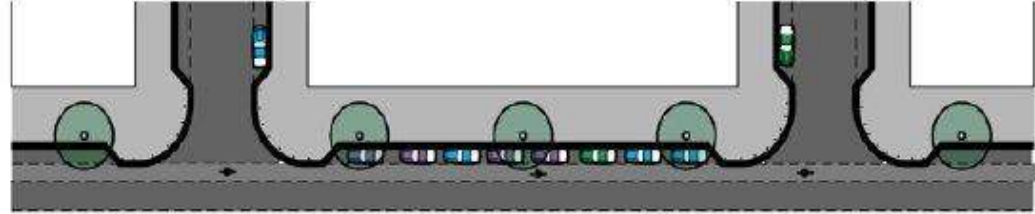
Everyone makes mistakes. Outcomes should not be severe; mistakes should be forgiven.

Separated bike infrastructure, traffic calming

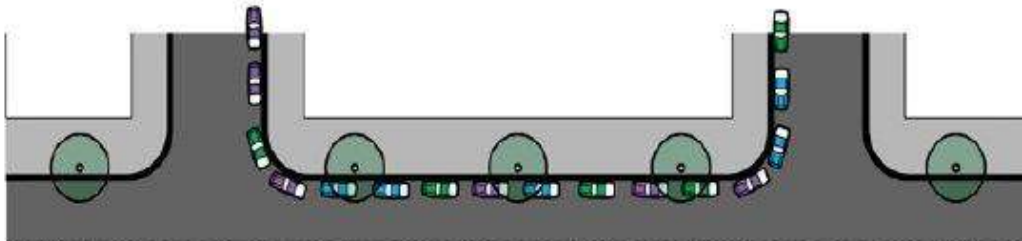
Ontwikkeling van het straatprofiel 1950 - 2000



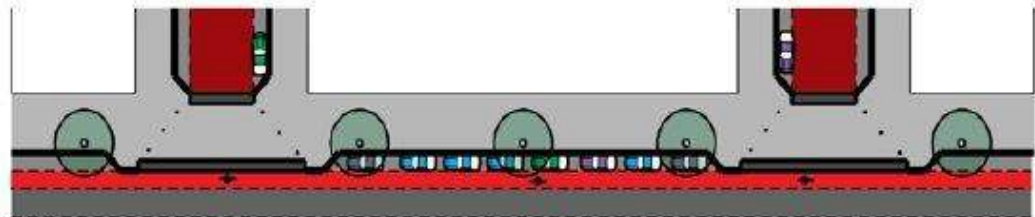
1950: De straat heeft een eenvoudige opbouw met rijbanen, weinig auto's en trottoirs. Het materiaal is overwegend baksteen, soms nog granieten keien.



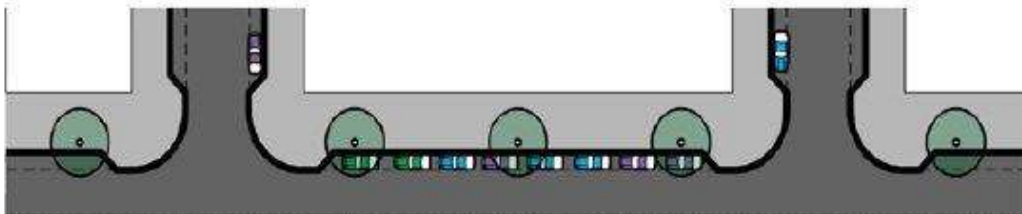
1985: Het toenemende fietsverkeer krijgt eigen fietsstroken ter verbetering van de veiligheid.



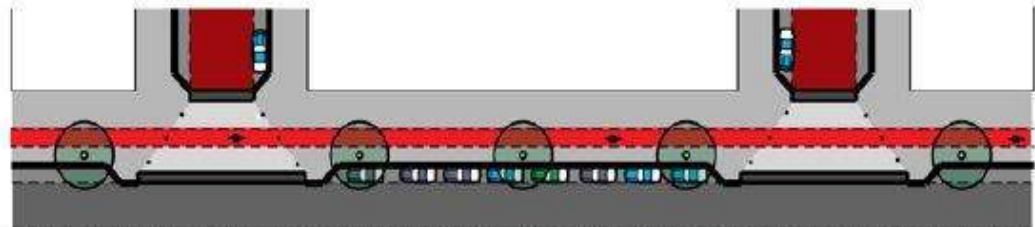
1965: De druk van het autoverkeer neemt toe, er zijn steeds meer parkeerplaatsen nodig. De straat wordt geasfalteerd.



1995: De 30 km/u buurtstraten krijgen een verharding van rode betonstraatsteen, soms baksteenverharding, de drukke 50km uur straten blijven van asphalt. Er komen verhoogde trottoirs die voetgangers voorrang geven t.o.v. afslaand verkeer. De fietsstrook krijgt een eigen kleur door toepassing van rood asphalt.



1975: De straat krijgt 'koppen' om parkeren op de hoeken van de straat tegen te gaan. De trottoirbanden lijn begint te verspringen en is niet meer continu.

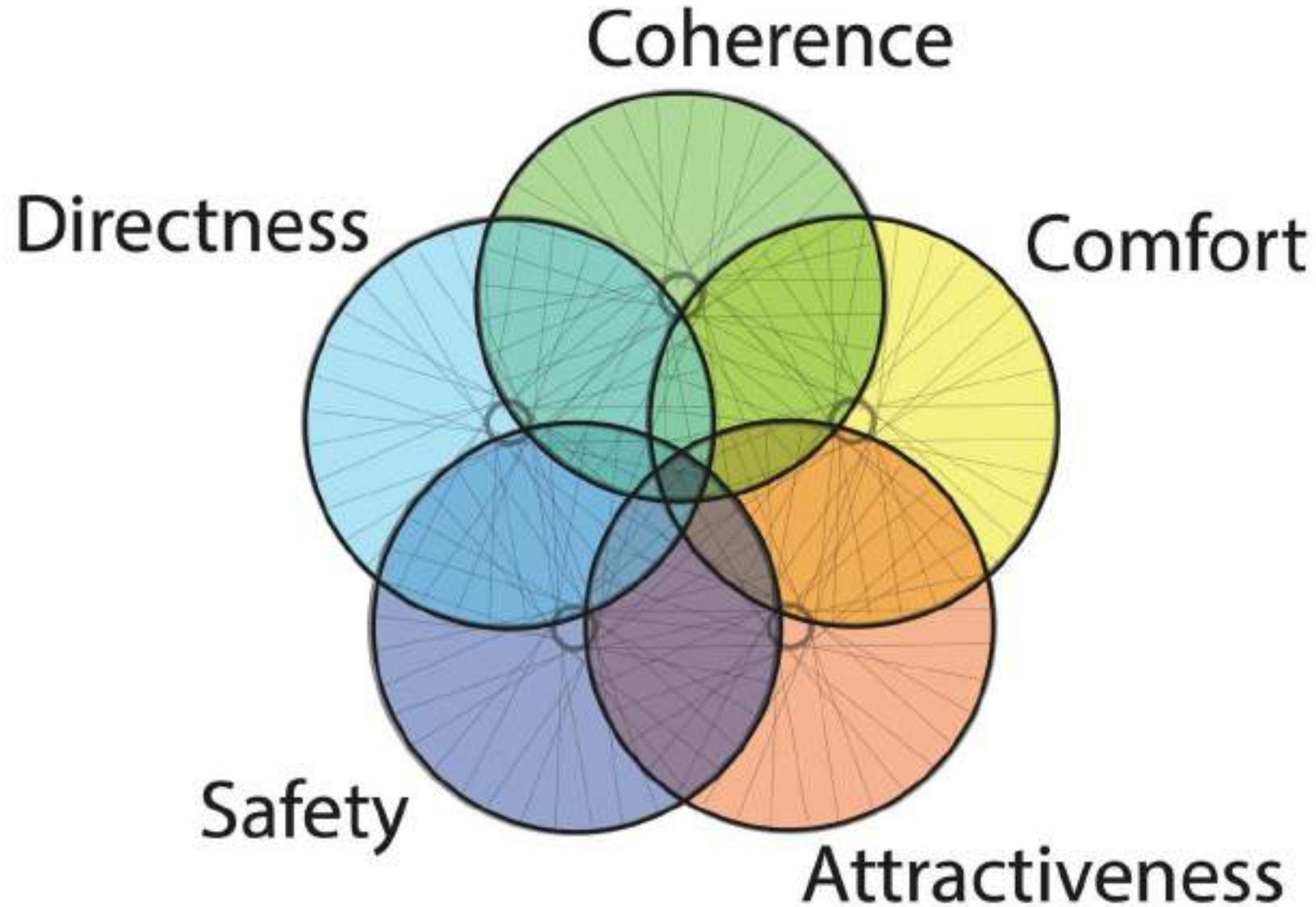


1998 - ?: Ter verdere verbetering van de verkeersveiligheid worden de fietsstroken vervangen door vrijliggende fietspaden op het trottoir.

Cycling for a commute

Bicycle highways or continuous bicycle routes

Main requirements for cycling infrastructure



Recreational versus Commuters networks



Snelfietsroutes in Nederland

- bestaande snelfietsroute
- realisatie tot 2030
- ambitie

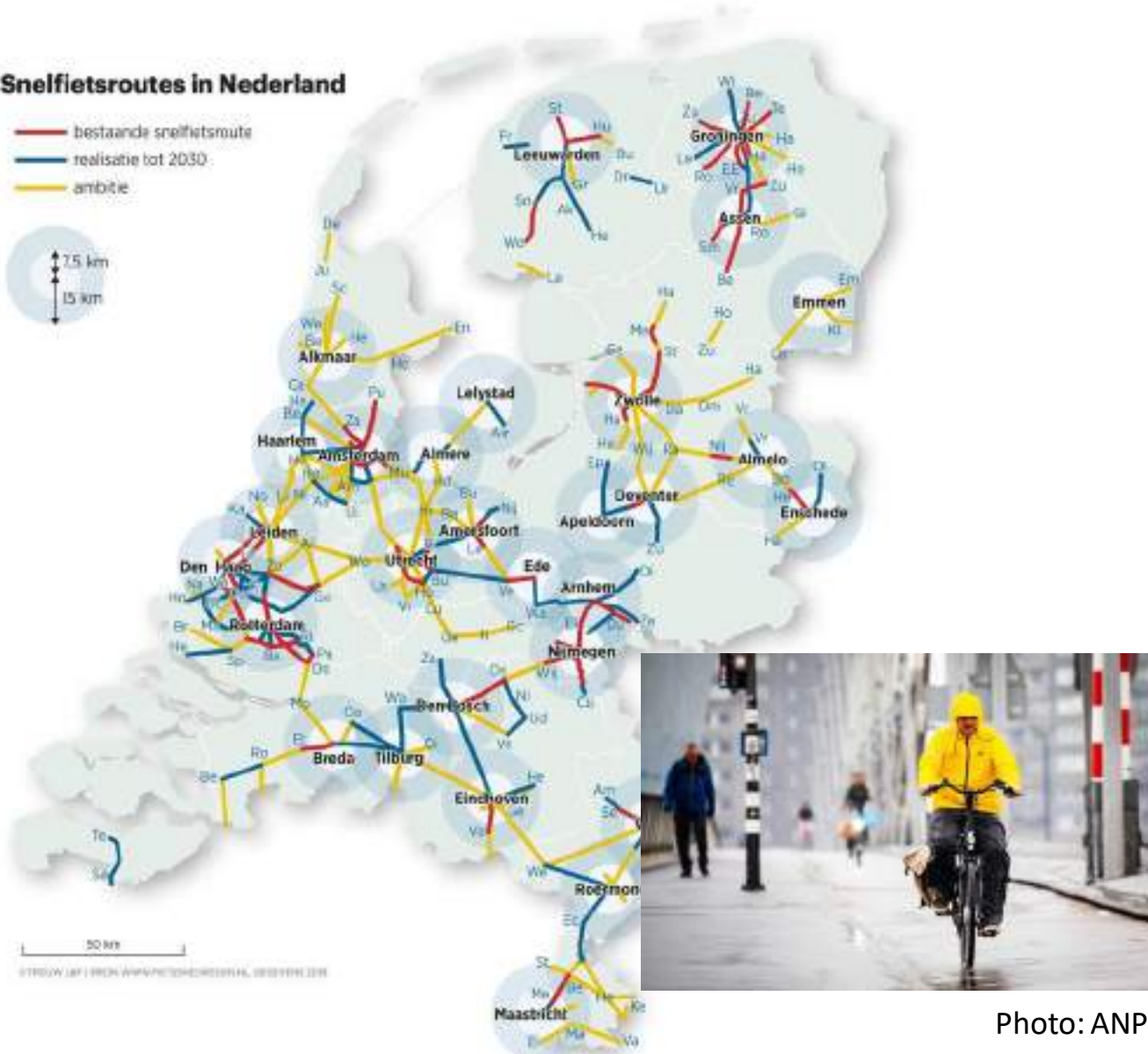


Photo: ANP

The provincial bicycle route



- Bicycle highway
- Continuous bicycle route
- Cyclostrada / Velostrade

HOOGWAARDIG FIETSNETWERK



Legenda

- Bestaande routes
- Realisatie
- Ambitie / planvorming

Daily Urban System



The provincial bicycle route



dick vanveen
STREET DESIGN PUBLIC SPACE



The provincial bicycle route



The provincial bicycle route



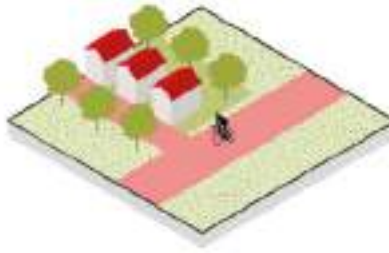
The provincial bicycle route



The provincial bicycle route



Local bicycle network as feeding links



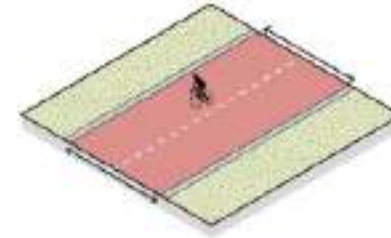
Connecting urban areas



Experiencing the surroundings



Recognizable routing



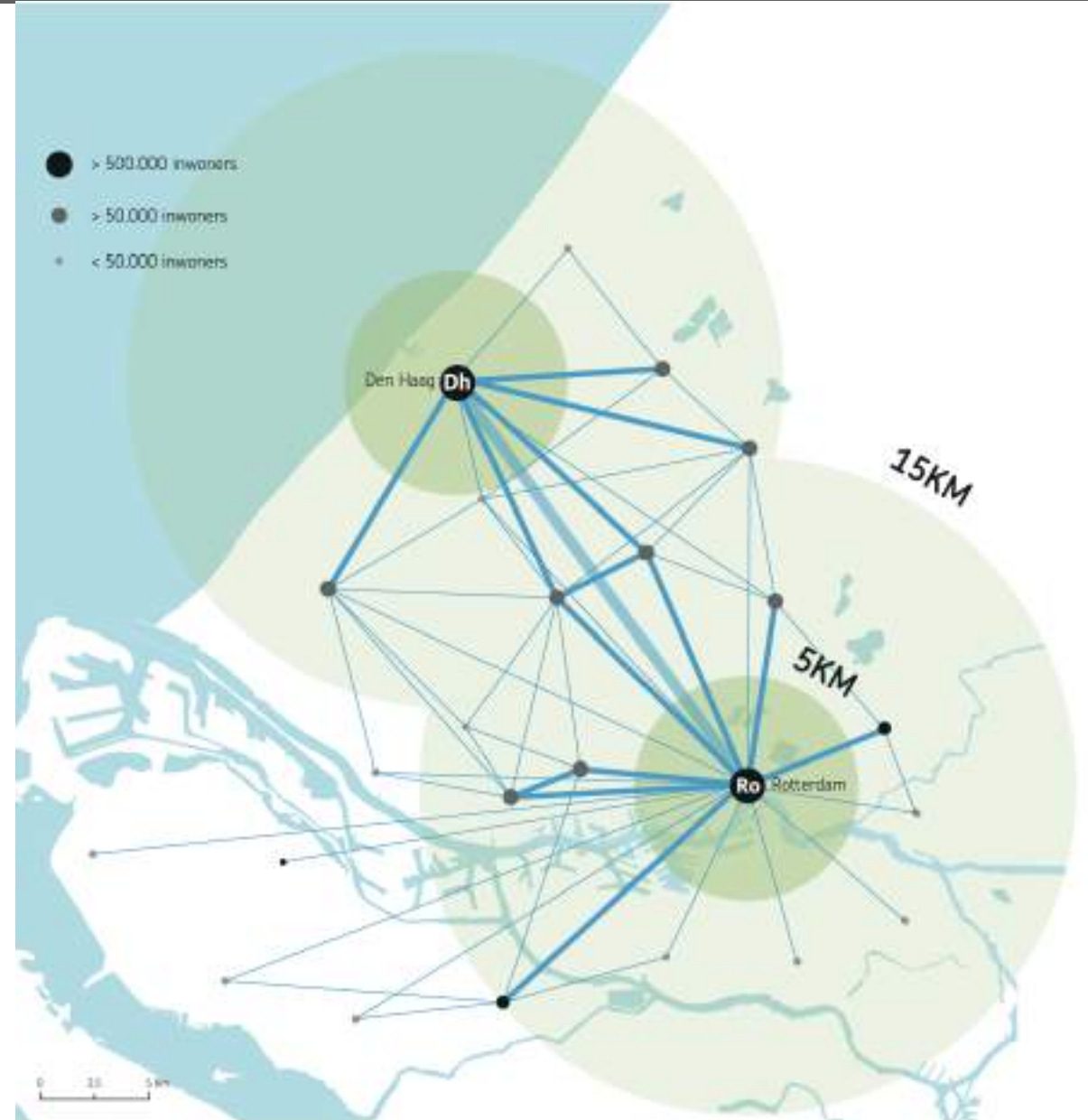
Wide lanes



Easy riding

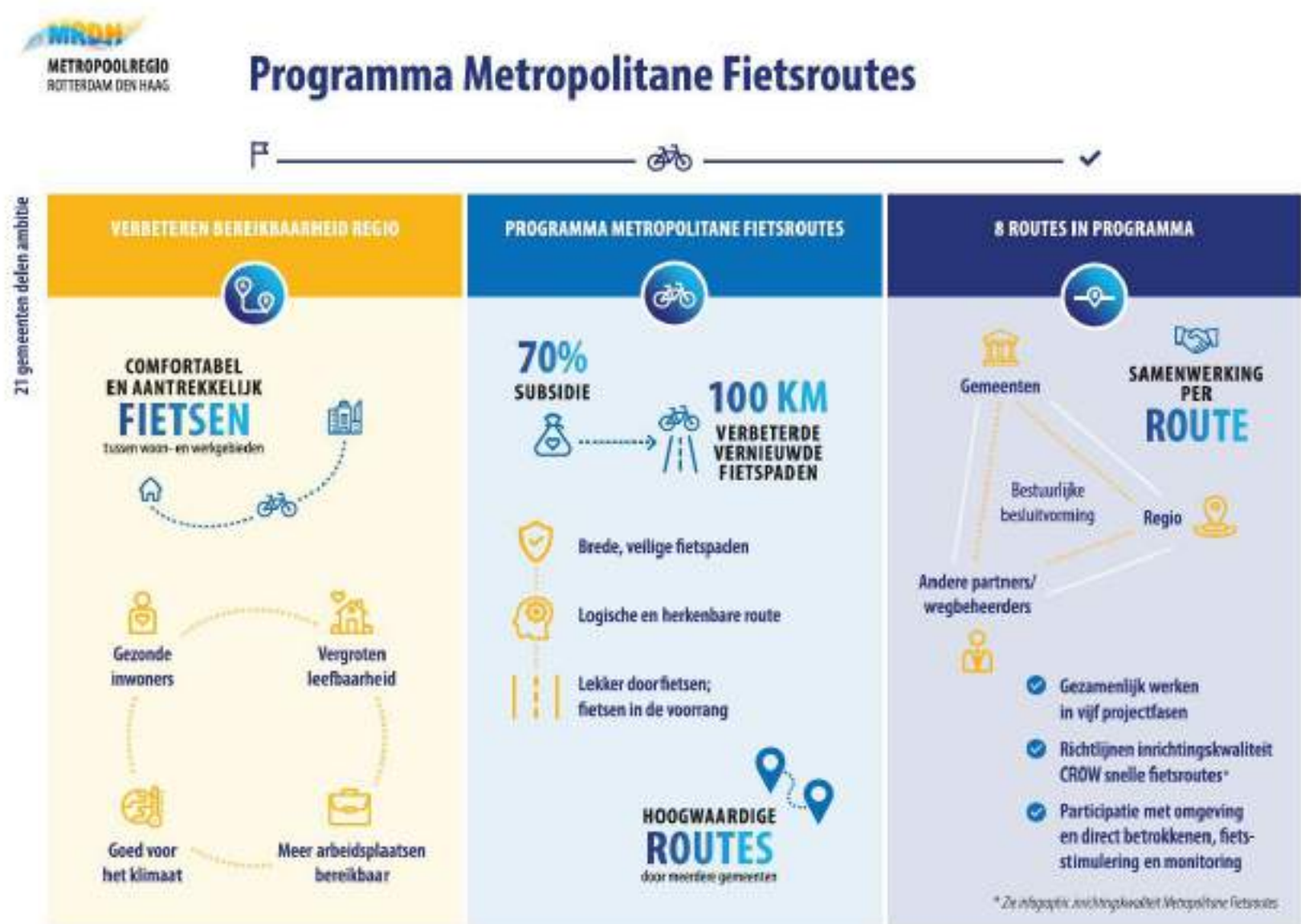
The metropolitan bicycle route

- The daily urban system: $R = 15$ km.
- In Rotterdam/the Hague these overlap
- Opportunities for (pedal assisted) bicycle use



The metropolitan bicycle route

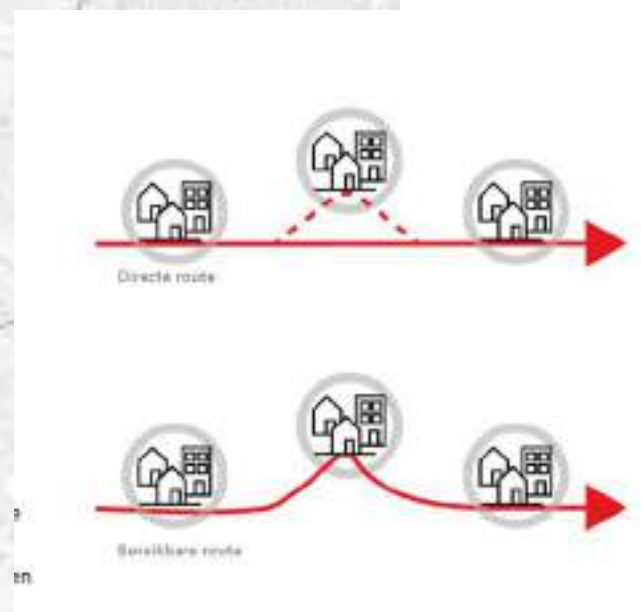
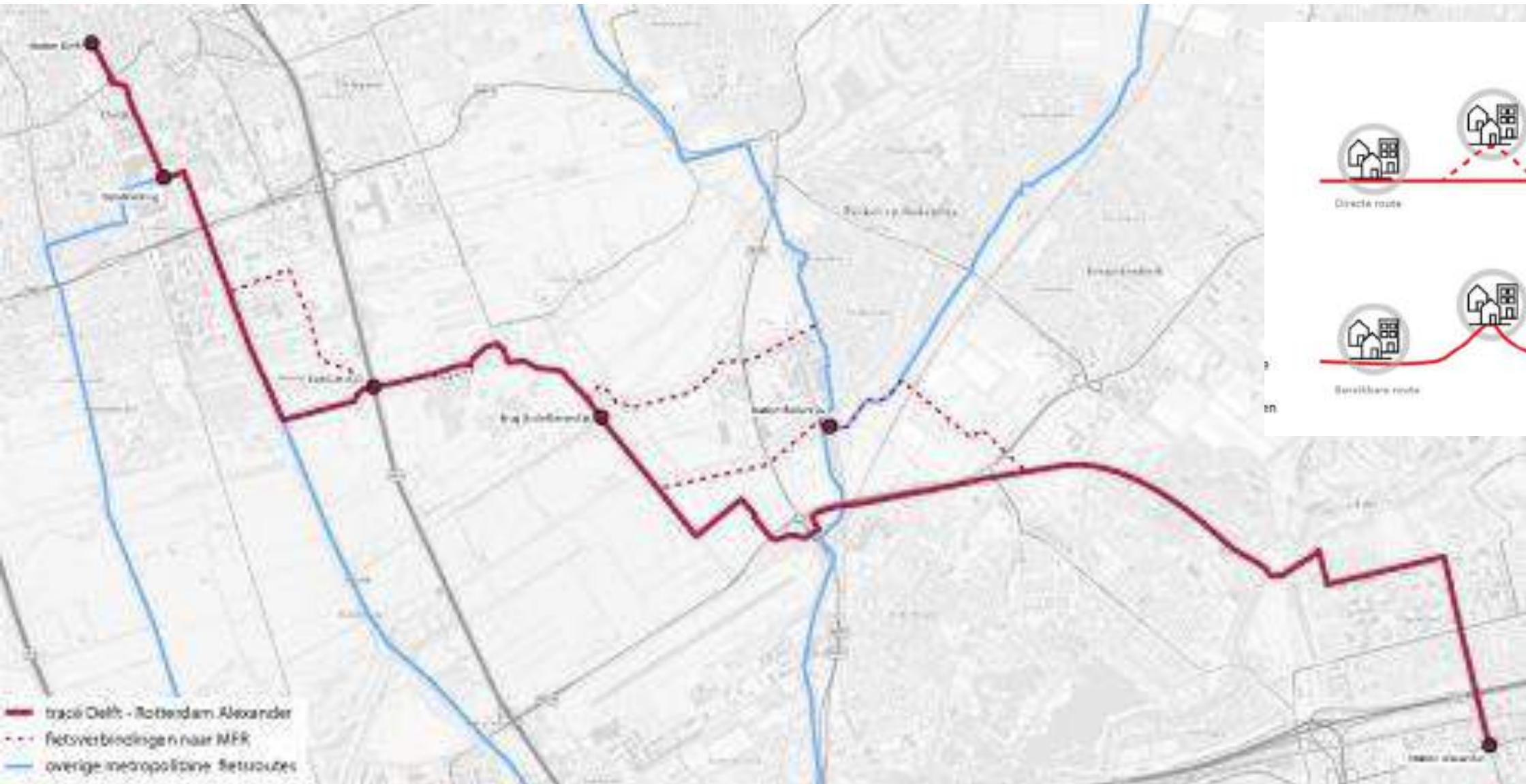
- Metro region is planning them
- Municipalities do detailed design
- Grants up to 70% for municipalities



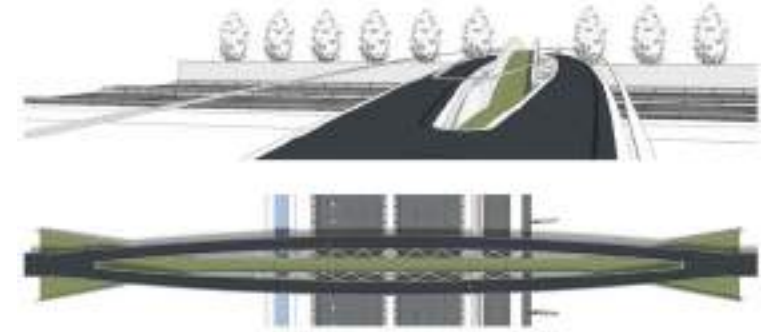
The metropolitan bicycle route



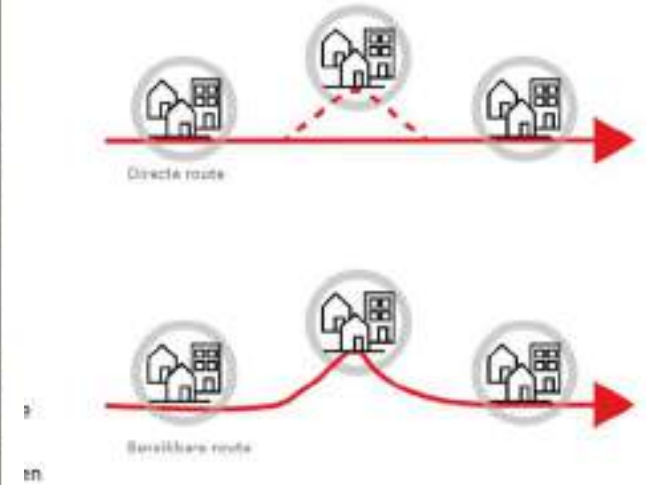
The metropolitan bicycle route



The metropolitan bicycle route



The provincial bicycle route



The provincial bicycle route





Transformations

Superblocks Barcelona

- New Classification, followed by remodelling urban streets
- Green inner streets
 - No through traffic
 - Some exemptions
 - Speed limit 7m/h
 - One direction
- Roads > public spaces



Superblocks Barcelona

- Works well in the grid
 - +30% cycling
 - +10% walking
- Pushbacks and success
- Social housing
- Less space for cars?
 - 67 km bus lanes
 - Efficient public transport
 - More space for cars?



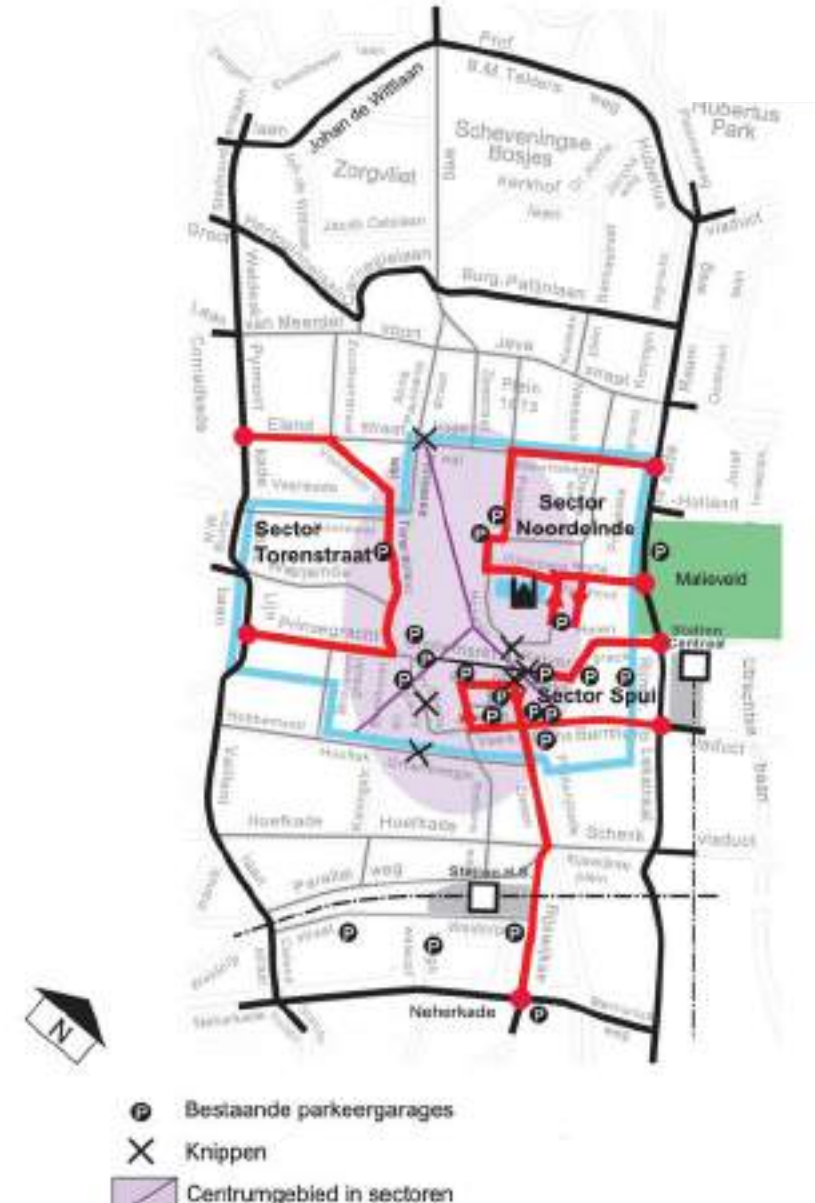
Traffic circulation Plan The Hague

- Linking up the city center streets to form a ring structure
- Closing off through routes by bollards/cameras for non-residents
- Deliveries only in the mornings
- Opportunities for placemaking
- Walking and cucling through is faster and more convenient



Traffic circulation Plan The Hague

- Linking up the city center streets to form a ring structure
- Closing off through routes by bollards/cameras for non-residents
- Deliveries only in the mornings
- Opportunities for placemaking
- Walking and cycling through is faster and more convenient



Traffic circulation Plan The Hague



78 >
Spui, (former) through road in The Hague

Traffic circulation Plan The Hague



dick vanveen
STREET DESIGN PUBLIC SPACE



Traffic circulation Plan The Hague



dick vanveen
STREET DESIGN PUBLIC SPACE



The urban bicycle street



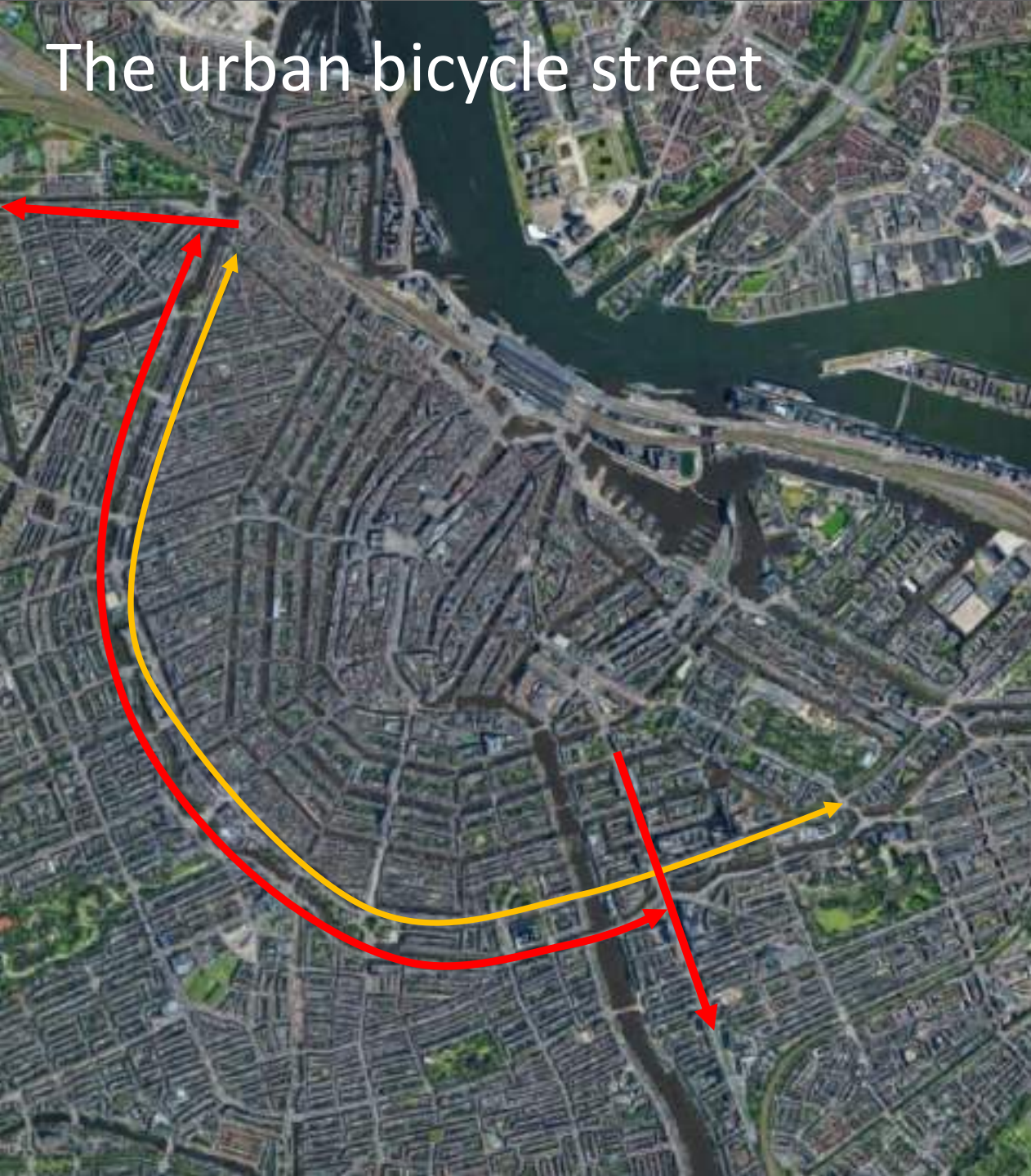
Old situation: narrow bike lanes; too many cyclists



At the Amsterdam
'binnenring' (inner loop): car
lanes and minimal bike lanes
became bicycle streets

Cars as guests, Streetcar still
separated

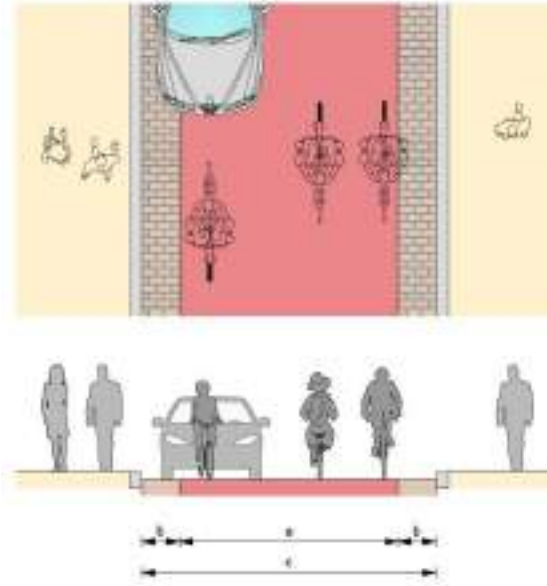
The urban bicycle street



dick vanveen
STREET DESIGN PUBLIC SPACE

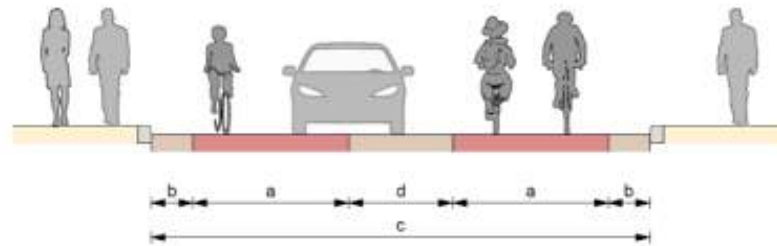


The urban bicycle street Amsterdam



Standard bicycle streets prioritize bicycle by design: materialization, color and width.

'smaller' 30 km/h (20 mph) residential streets where cars are guests



Unsuited for high urban settings

The urban bicycle street Amsterdam

At the binnenring (inner loop): the bike lanes become bicycle 'streets'

On each side of the streetcar, 4.0 m wide (because cyclists want to overtake cars!)



The urban bicycle street Amsterdam



The safe arterial, Rotterdam



Beukelsdijk (1958)

The safe arterial, Rotterdam



The safe arterial, Rotterdam



The safe arterial, Rotterdam



Amsterdam street transformations



Amsterdam street transformations



Car free neighborhoods



Car free neighborhoods



KAART



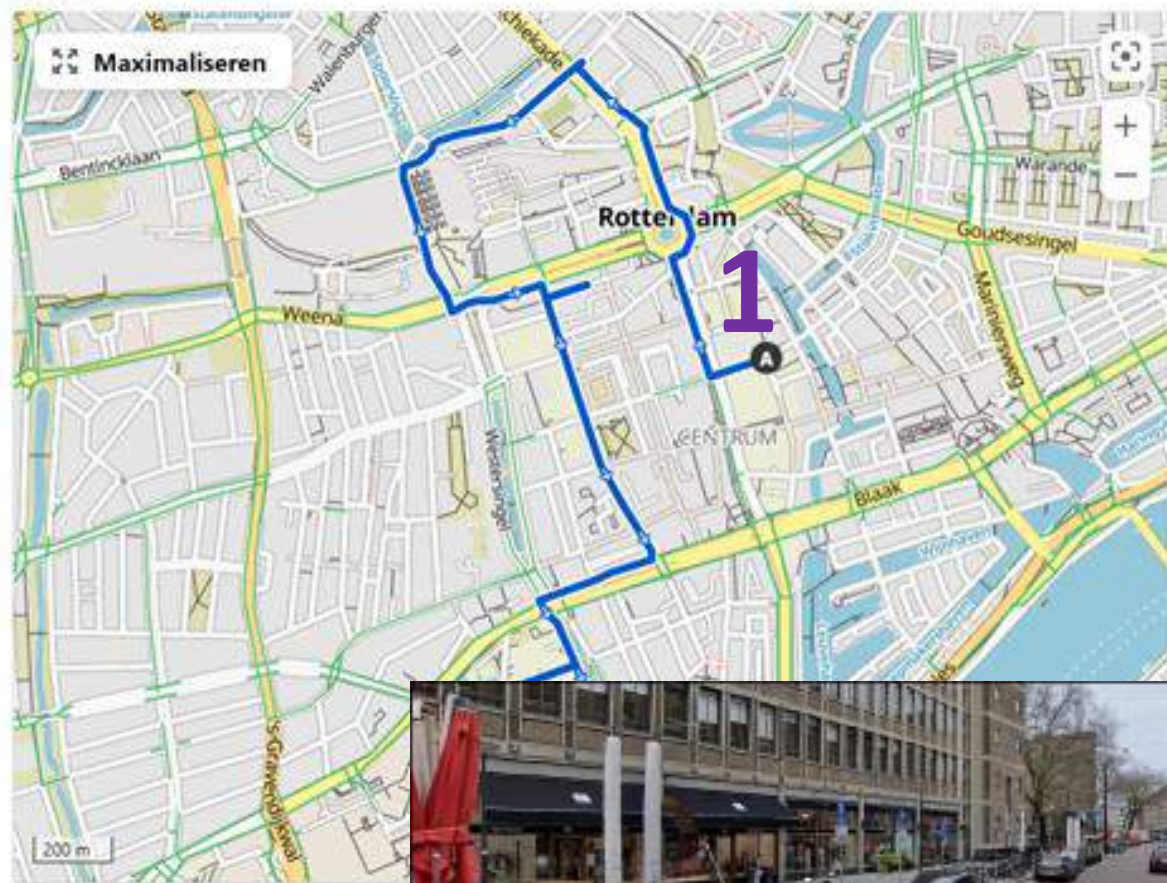
Interesting bike (related) projects

Rotterdam City Centre

Distance: 4,8 km



KAART



1. Meent

- a. City street
- b. Recent bike lanes (unprotected), 2021
- c. Bike parking (guarded)



KAART



2. Coolsingel

Big city project
(less car lanes, more public
space & space for
pedestrians en bikes)

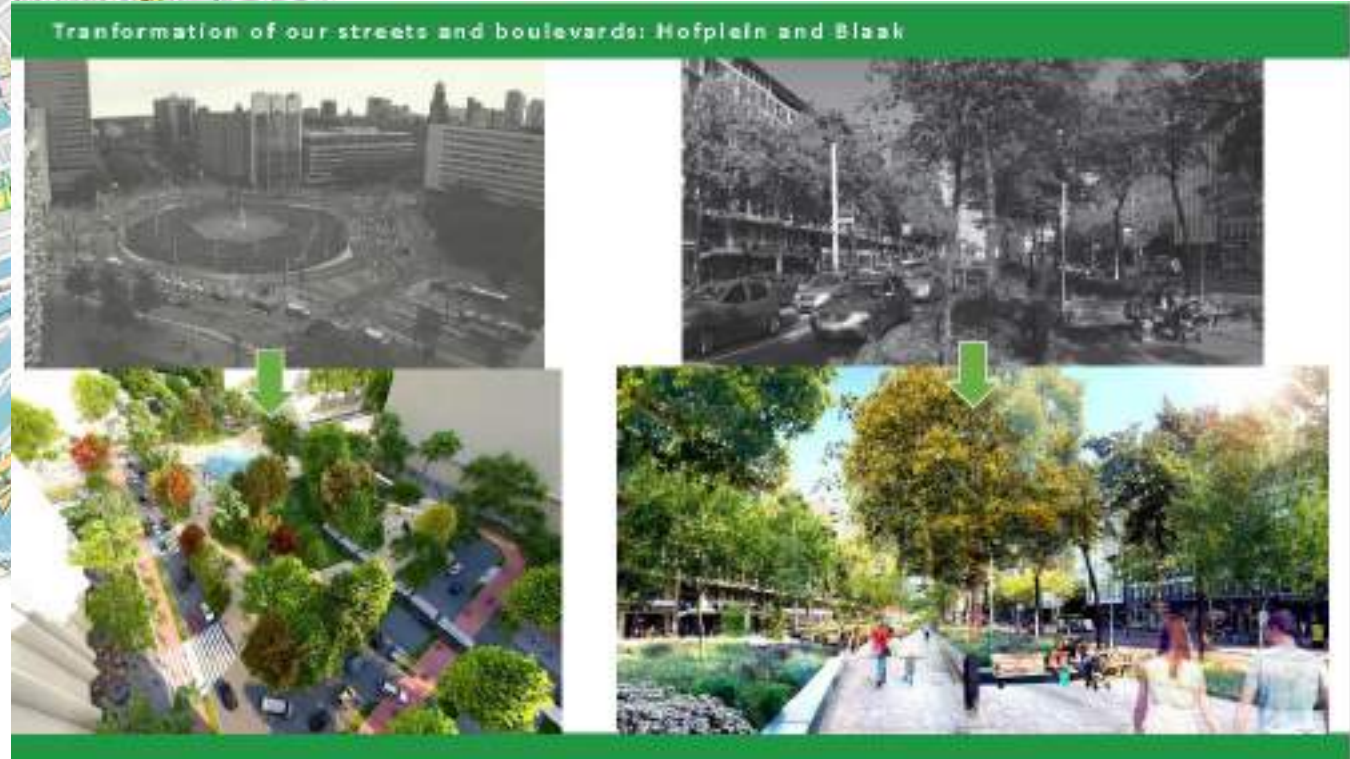


KAART



3. Hofplein

Next big city project
(transformation to a green square)



KAART



4. Teilingerstraat

One of the first cycle streets in Rotterdam



(cars allowed but subordinate)

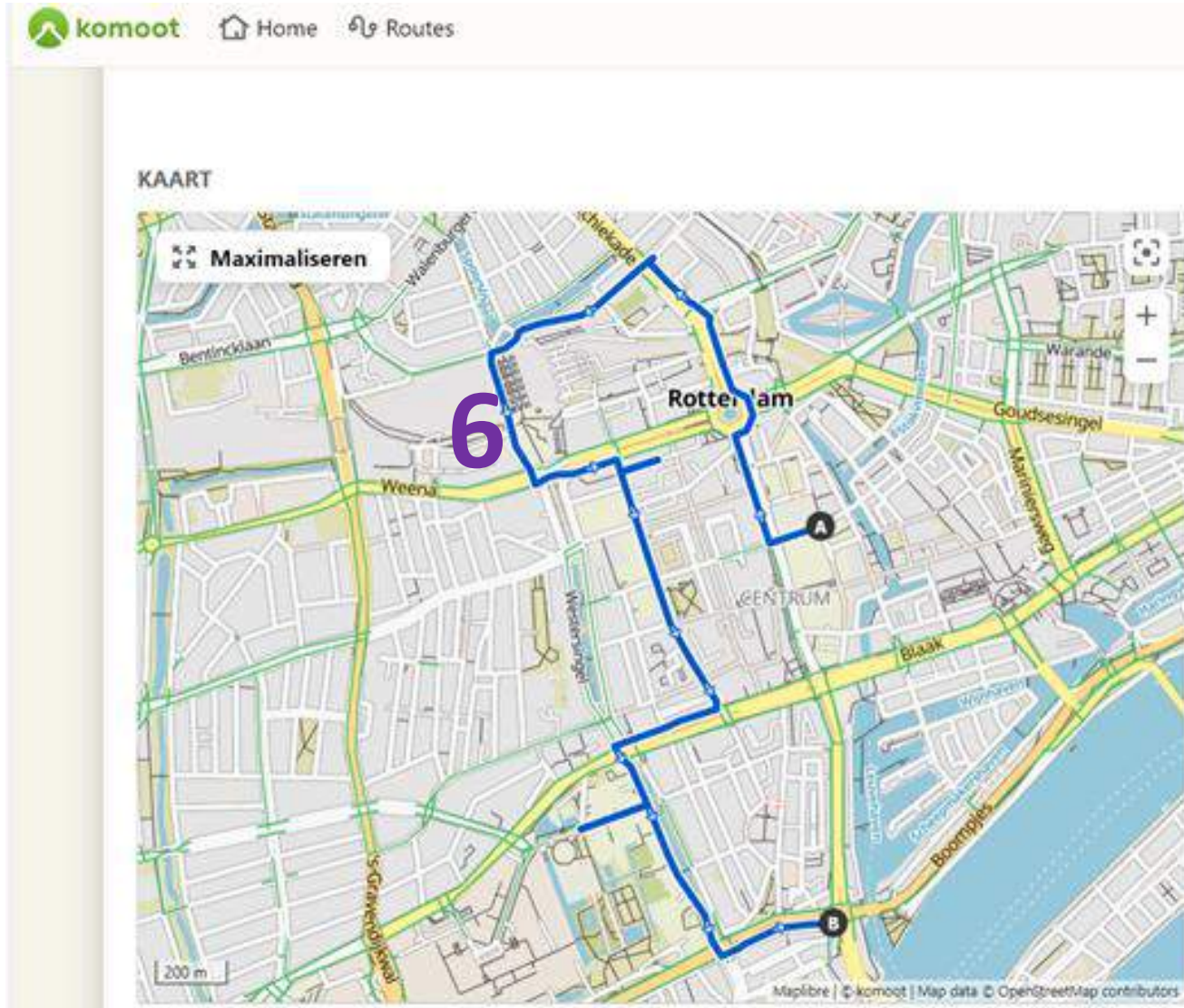
KAART



5. Provenierstraat

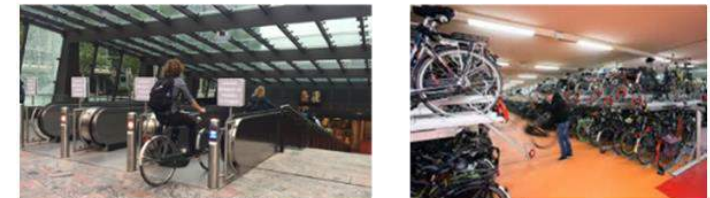
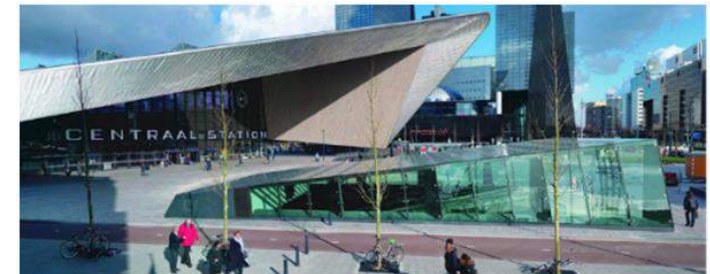
Red asphalt voor cyclists,
paving stones for cars





6. Bike Parking CS

- Garage (level -1)
- Ground level (outside)
- Hub shared bikes & mopeds Weena (above tunnel)



KAART



7. Bike Parking Lijnbaanstalling

Ground level (inside)



KAART

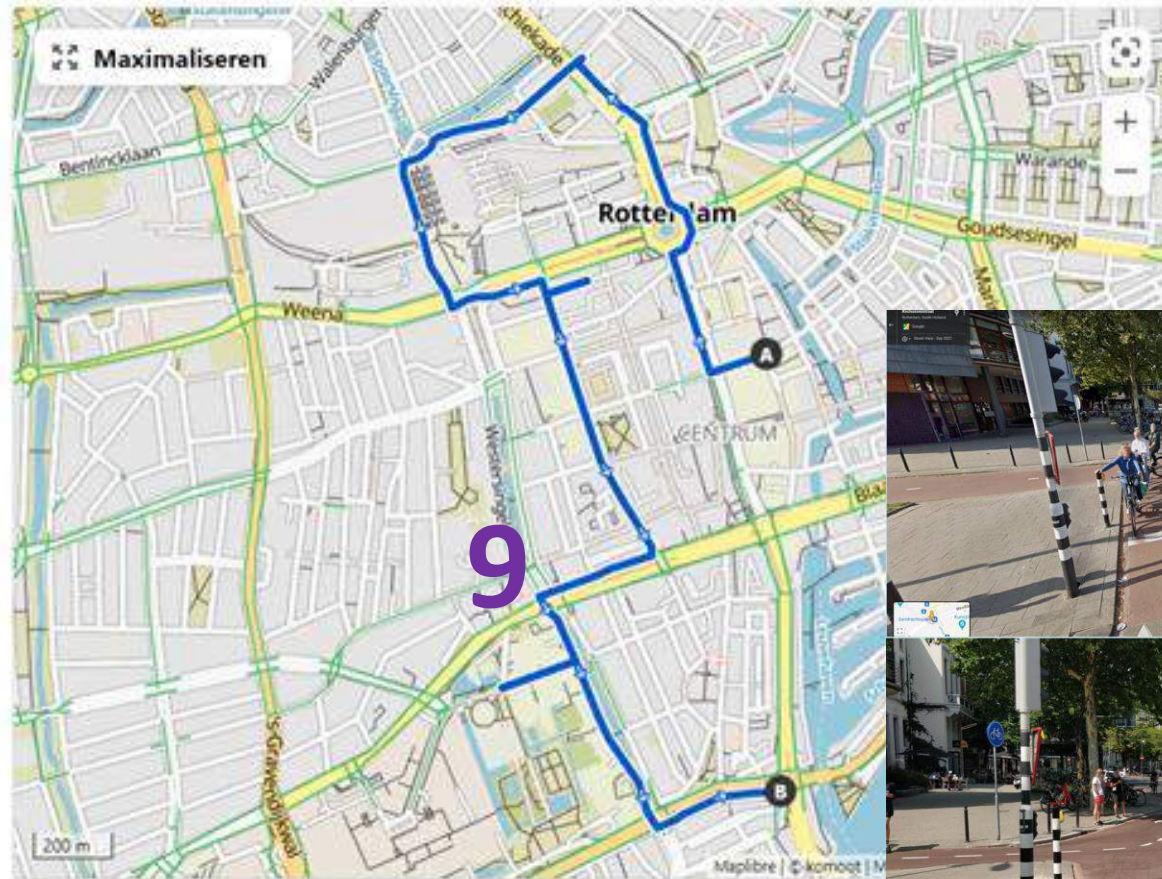


8. Karel Doormanstraat

City street



KAART



9. Eendrachtsplein

More space for waiting and passing each other



KAART



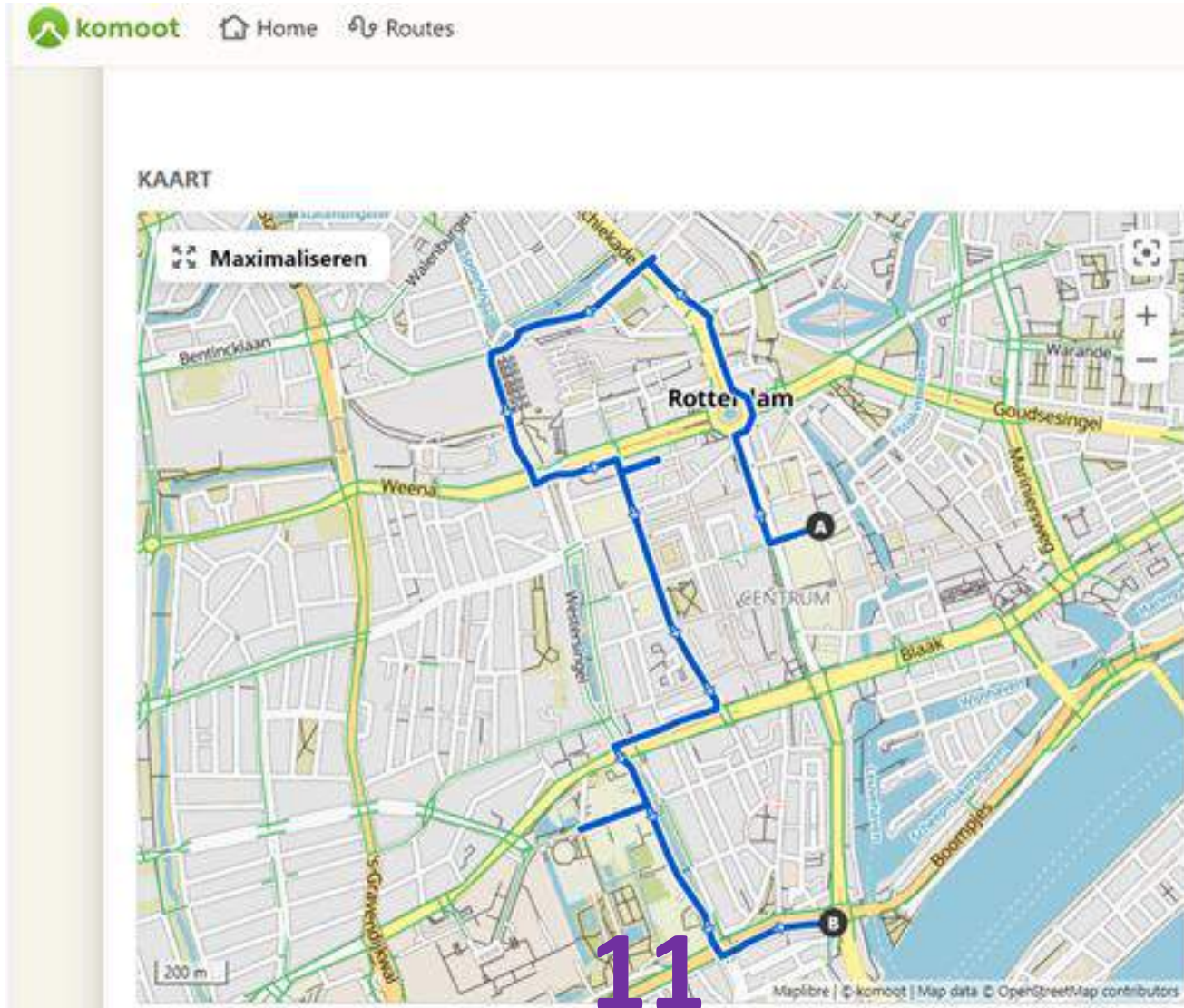
10

10. Museumpark

<https://mooirotterdam.com/museum-park-rotterdam/>

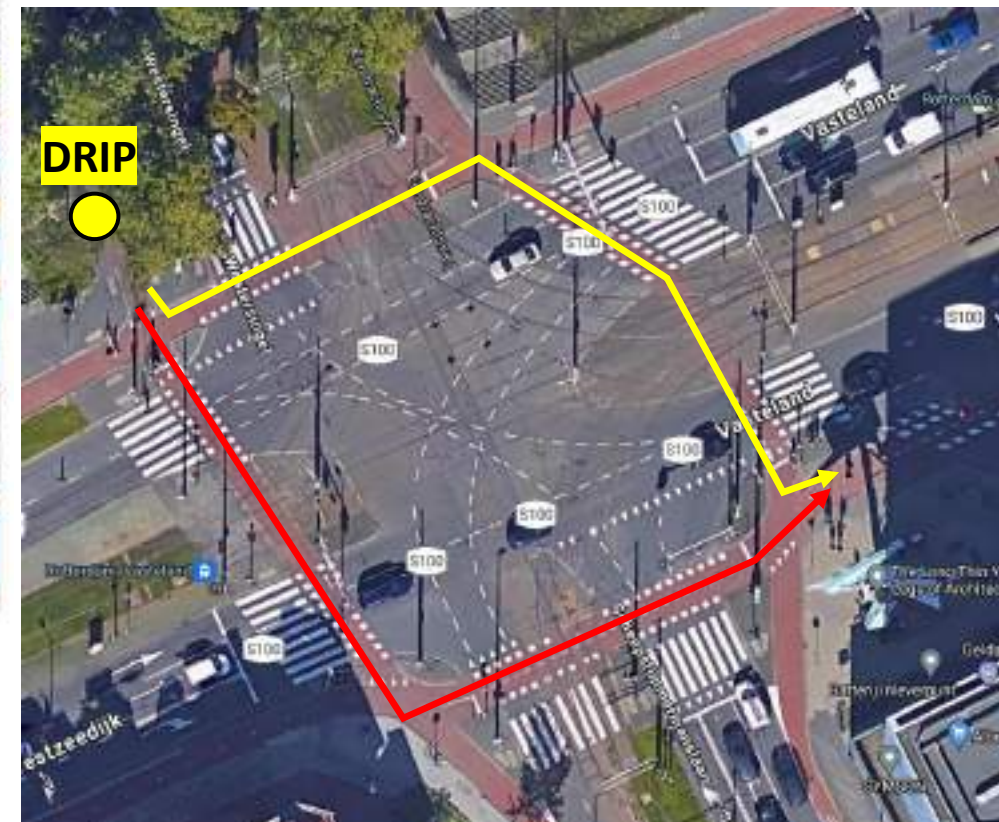
<https://www.rotterdam.nl/vergroening-omgeving-museumpark>





11. Crossing Westzeedijk

Dynamic route information for cyclists (how to cross to the Vasteland in the fastest way) and more space for waiting and passing each other



KAART



12

12. Vasteland

Experiment to take 1 lane for cars to make extra cycle lane (next year we make it permanent)

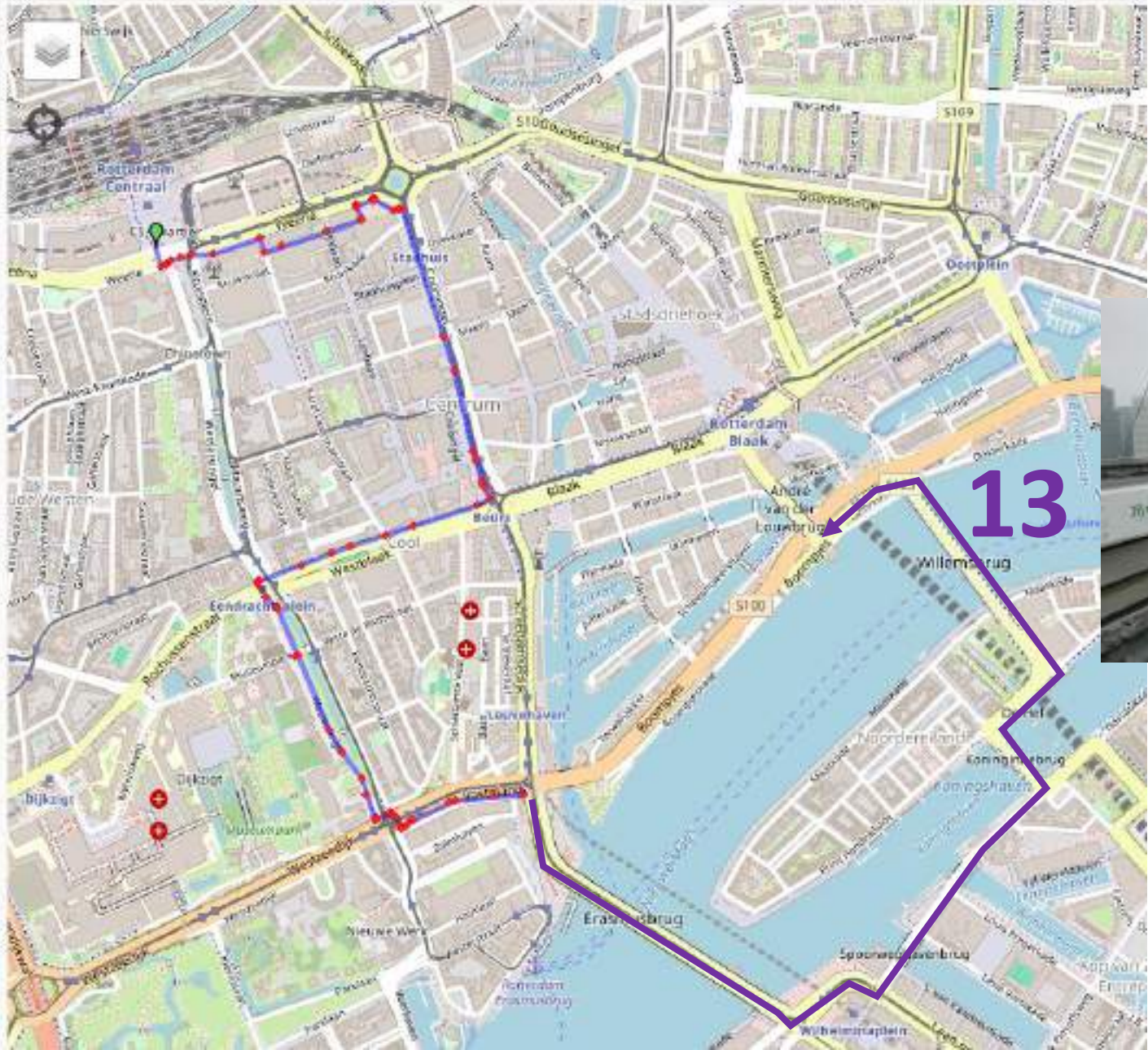


Ga naar
[straat], Plaats, Nederland

Mijn afstandmeten
login: Ga
wv: Onthoud:

Links
> Registreren
> Wachtwoord vergeten
> Importeren

Afstand: 3.07km (82 punten) | Bordjes: Geen | Coord: 51.927913, 4.513707
Tijd: 00 00 00 | Uitleg: | Info:



Extra option
(only by bike)

13. Willemsbrug

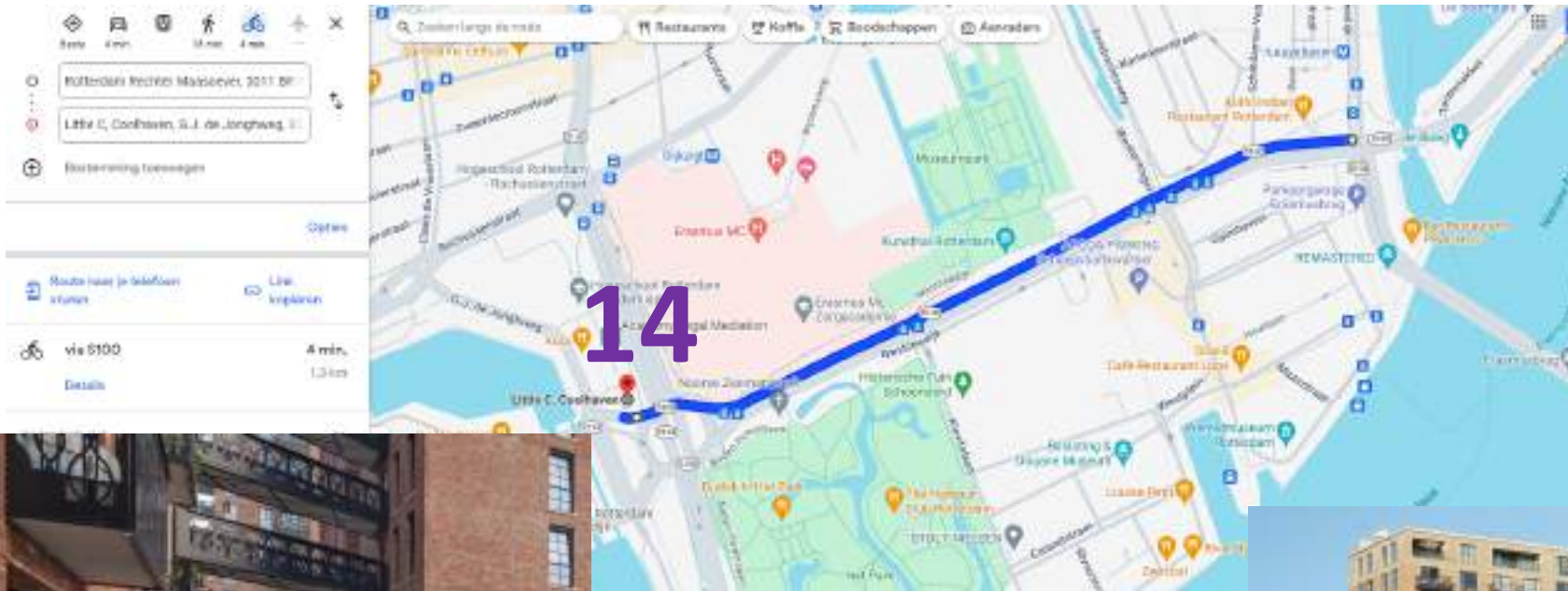
East side: experiment to take 1 lane for cars to make extra cycle lane
(by succes we make it permanent)



Extra option
(only by bike)

14. Little C

Newly developed area.
Inner area: just walking
and cycling, no cars.
Car parking garages
Good bike lane, walking path,
green area at the waterside



Extra option
(only by bike)

15. Rijnhaven

New development area
(new land is being made right now)



15

View from bridge to Katendrecht



Impression from the future





Sustainable Cities

May 23 – delegation Florida

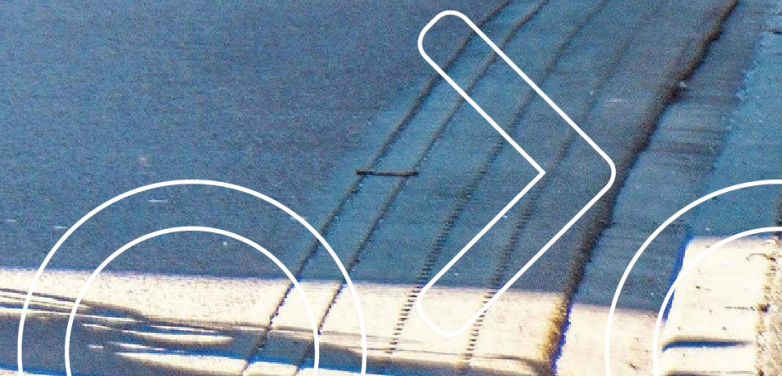




Goudappel

MOBILITY MOVES US

For a healthy and
bicycle-friendly planet.



Goudappel

MOBILITY MOVES US

Richard ter Avest

Think bike workshops in the USA

- 2011: Los Angeles / San Francisco
- 2012 + 2022: Austin Texas
- 2015: Houston Texas
- 2016: Washington DC
- 2023: Fort Collins
- 2024: Broward County, Opa-locka, Hialeah



Pleased to meet you

- Goudappel has 60 years of experience in mobility engineering, since 1963
- Leading position in mobility in the Netherlands
 - Traffic modelling and data analytics
 - Consultancy and design
- 280 experts to cover all aspects of mobility (Planners, designers, psychologists, researchers, IT-professionals, data scientists, etc)
- Employee-owned

Our mission is to use proven Dutch solutions on mobility to create sustainable, accessible, liveable and economic flourishing cities'

Awards Goudappel

- National Award Sustainable Road-Safety (1994)
- Best Bicycle Highway fietsnelweg F35, together with County Overijssel
- Integrated Transit systems, lightrail (vision, modelling)
- SUMP Attractive and Accessible City of Utrecht, European Award (2020)
- Design Guideline Public Space (with FLA - Groningen, Global 2022)

Goudappel international participations/partners

- Fair Spaces – Germany
- MINT – Belgium
- CSS – Italy
- Urbanista – Sweden
- M-Flow, EXP and Kittelson - USA





New York



Zwolle



Rotterdam



Losser



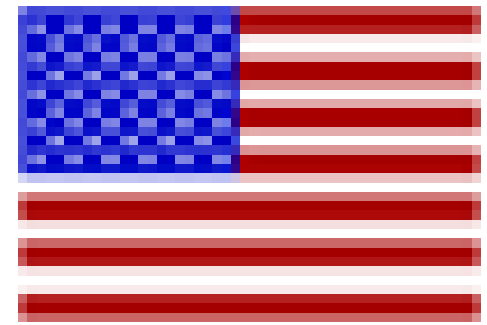
Utrecht



Ommen



Green-lanes project in LA (2011)



Visits in the Netherlands – see and believe



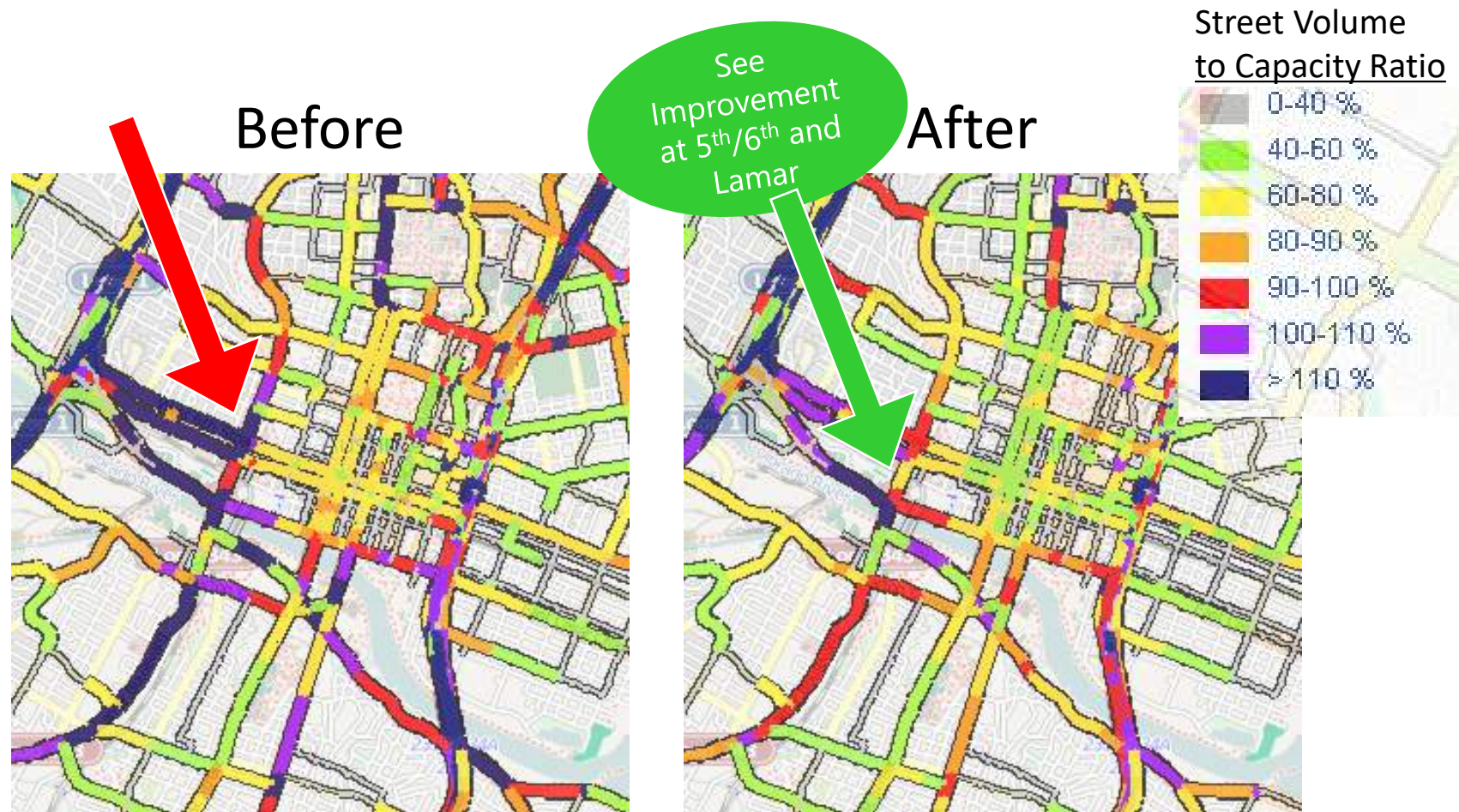
Thinkbike workshops in Austin, fall 2012



Spider Diagram of Short Car-Trips (MOVE meter)



Investing in bike is also good for the car (MOVE meter)



Examples of Dutch junctions in North America



Thinkbike workshop In Miami (2015, DCE)



Thinkbike workshop



Results: The Underline



Results: The Underline



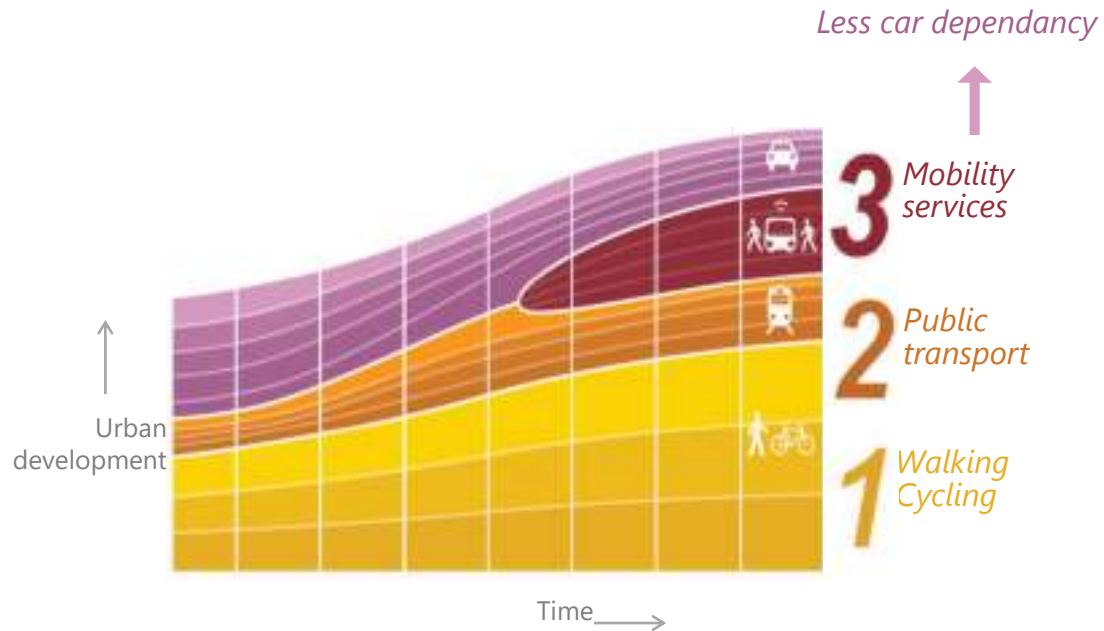
What city or county do you want?

- Why active mobility?
- Dare Able and Invite
- Road Safety
- Zoning and Network-planning



Sustainable Urban Mobility Plan, Goals

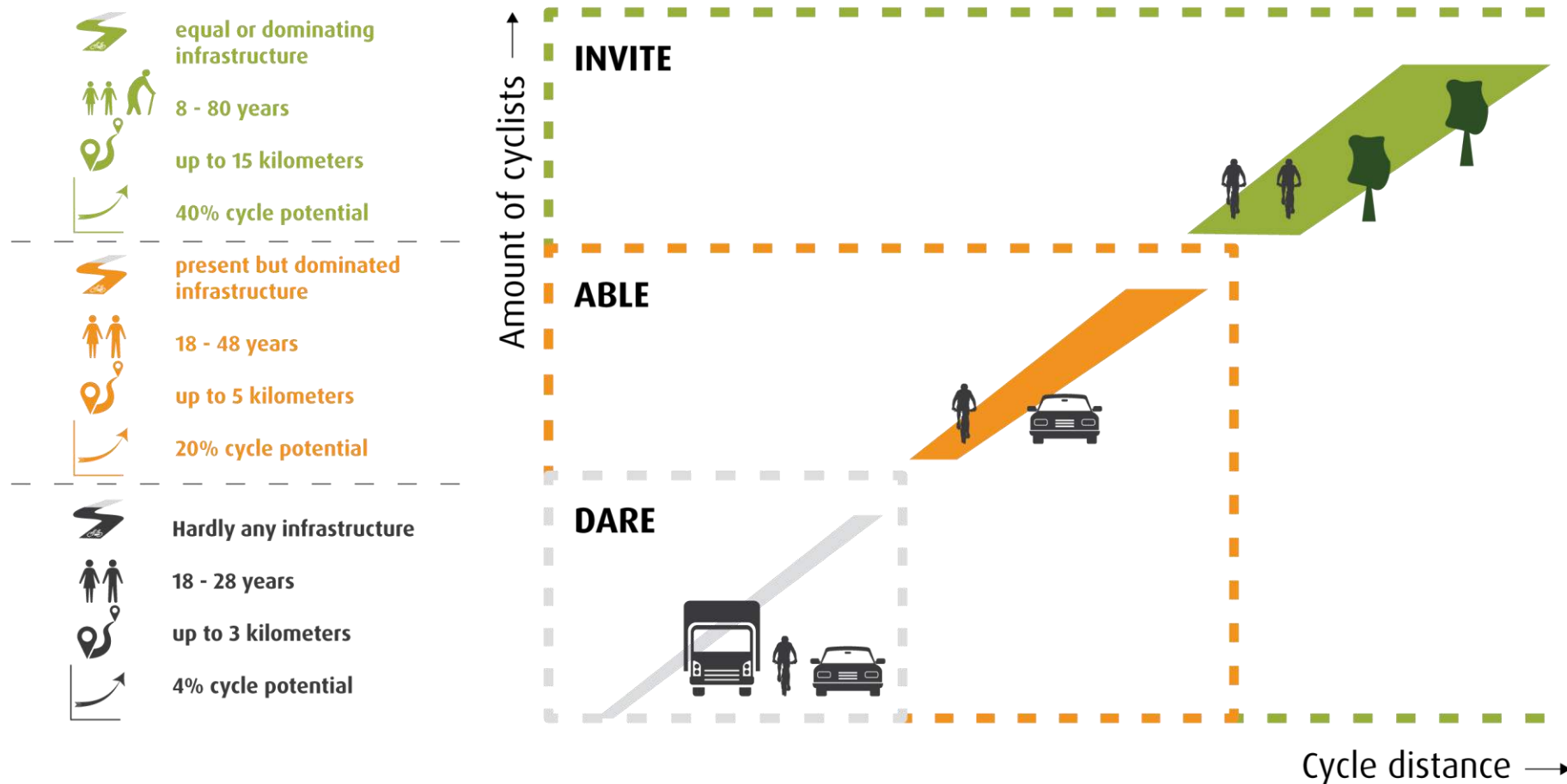
(Goudappel, SUMP Utrecht)



Benefits of cycling



What kind of city do you want?



Four groups of cyclists (4 steps evolution)

- Step 1: Recreation (US is on top!)
- Step 2: Commuting
- Step 3: Cycling to school
- First teenagers and later children
- Step 4: Whole families



E-bikes:
With support :
Great fun for all

World champion road safety



Killed cyclists
per 100 million km

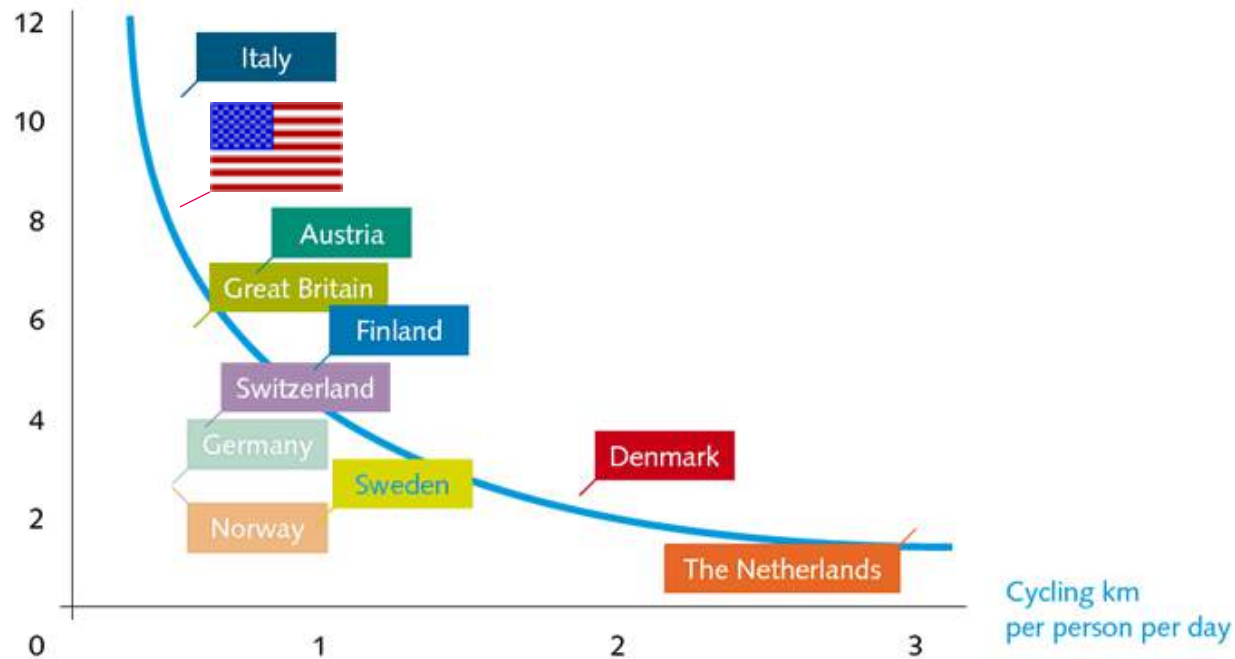
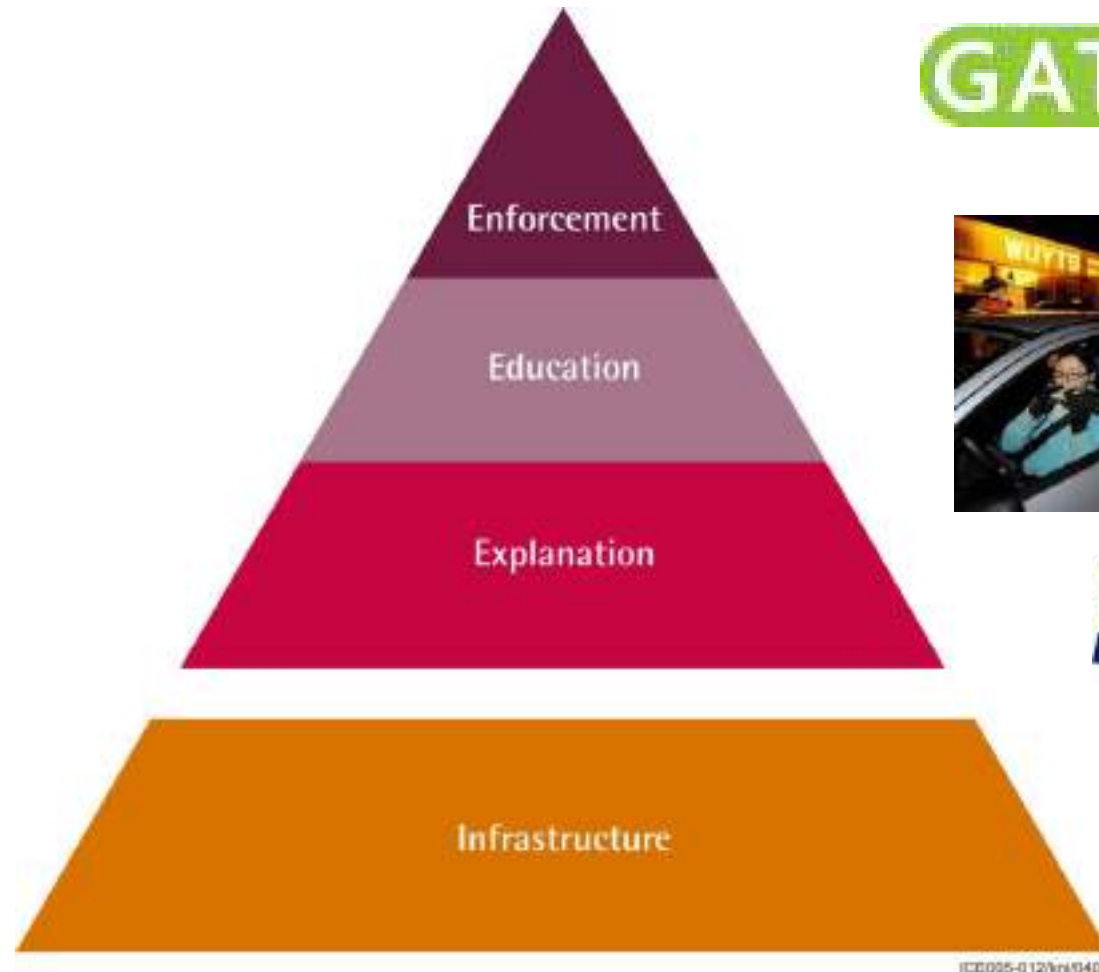


Figure 8: Relation between accidents and bicycle usage



Integrated thinking and acting road safety



GATSO

BOB-campaign



SWOV
INSTITUTE FOR
ROAD SAFETY RESEARCH

PHILIPS
sense and simplicity

3 design principles Sustainable Road Safety

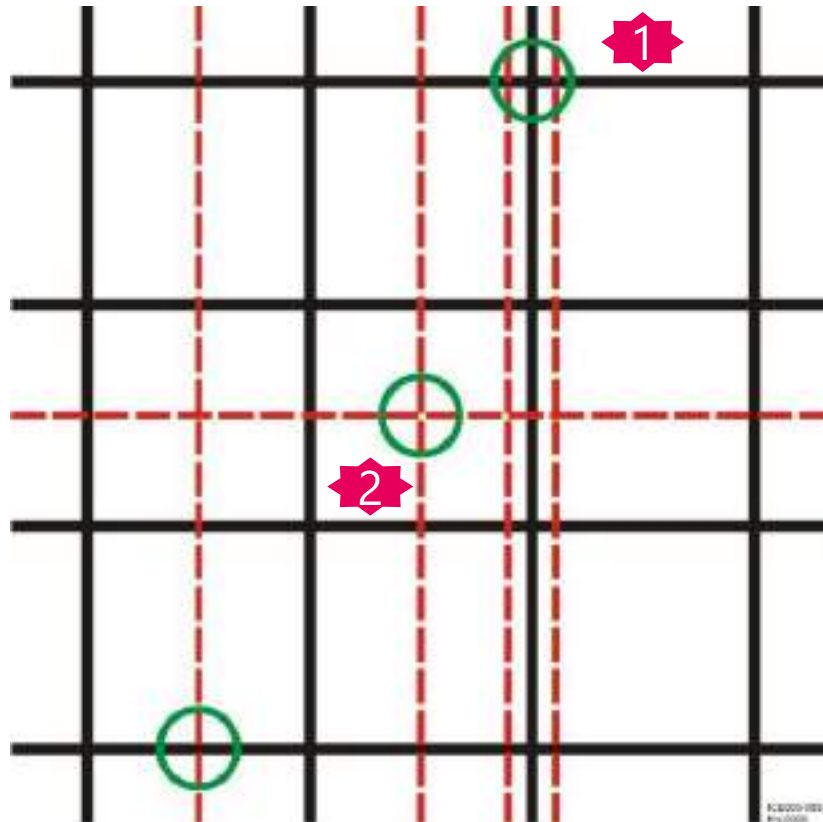
1. Avoid differences in speed, mass and direction (> 30 miles/hour separated bike-lanes).
2. Avoid through traffic in neighborhoods
3. Avoid uncertain behavior (by redesigning/planning 'self explaining roads')

Balance between function usage and form



car-network and bike-network

Solutions (green) in network car (black) and bike (red)



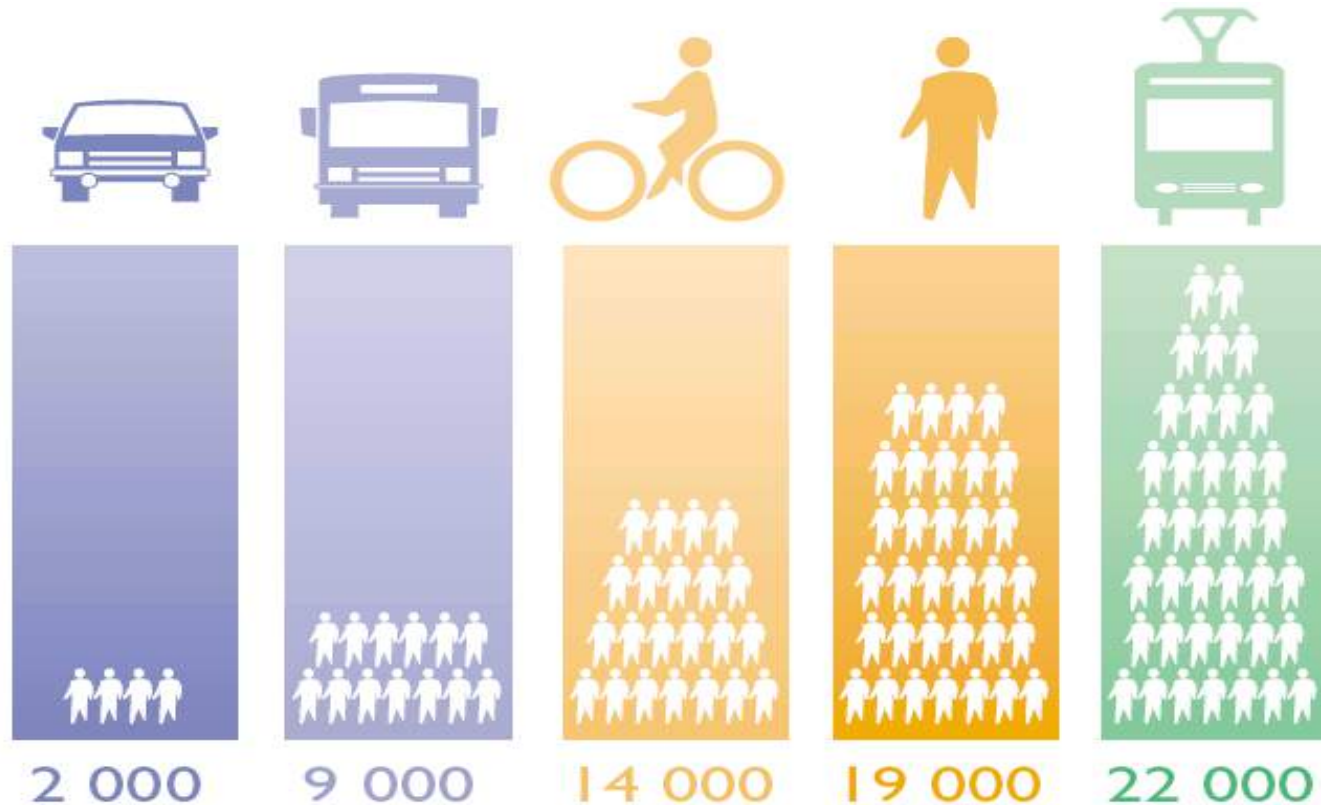
1



2

More people in the street

Road capacity (people per hour on 3.5 m / 10 feet width in the city)



Sustainable Safe



Flow



Distribution



Access



Function	Section	Intersection
Flow		
Distribution		
Access		

ICE005-006/Kmi/0408



Safe Speed limits

Stopping distances key

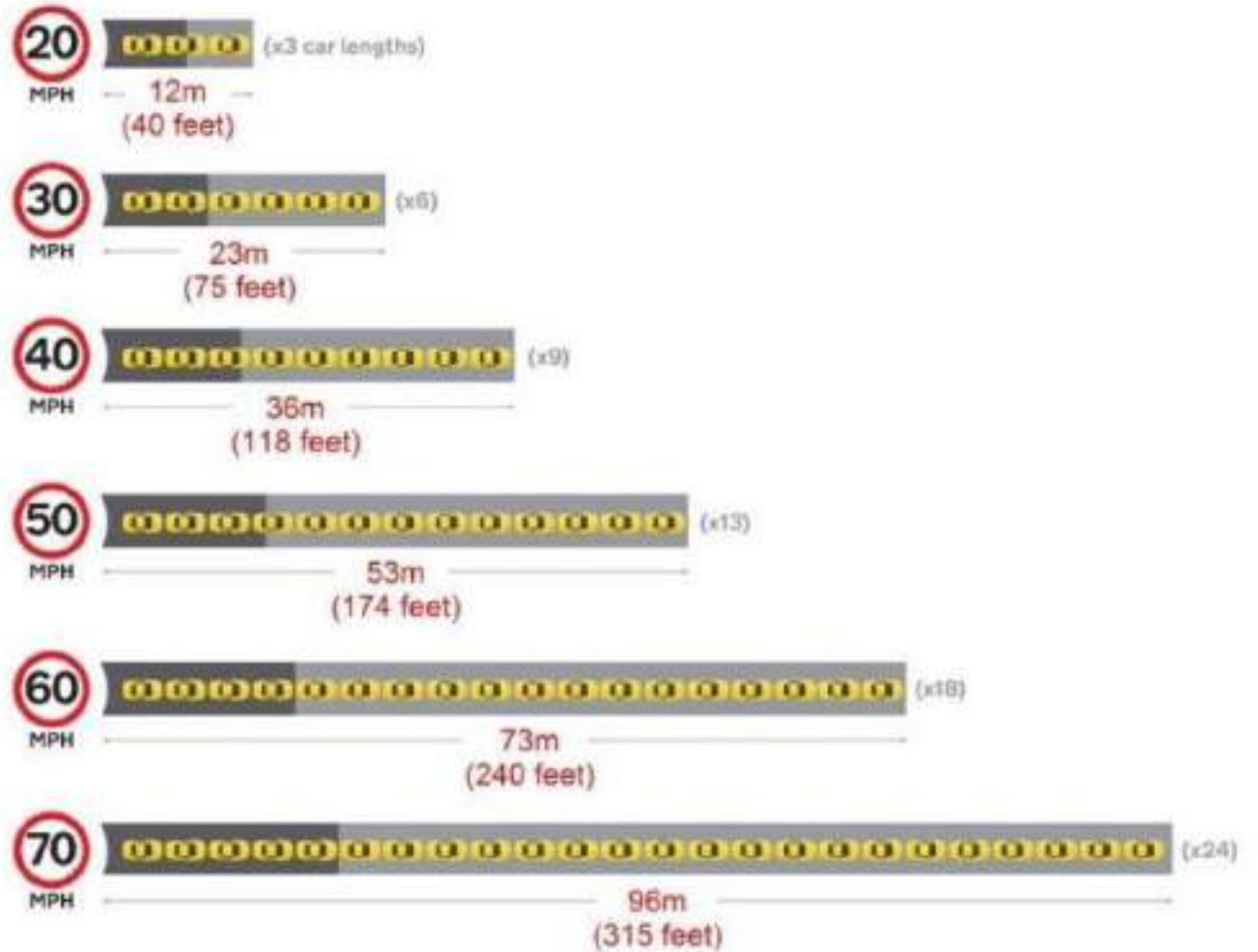
Thinking distance

Braking distance



Formula

Thinking distance + Braking distance = Stopping distance



Utrecht ABC-zoning: Urban planning and mobility policy



A-zone: inner city, densifying, TOD-areas, priority walking, no parking, shared space



B-zone: mixed city, parking policy, traffic ground level, new balance between modes



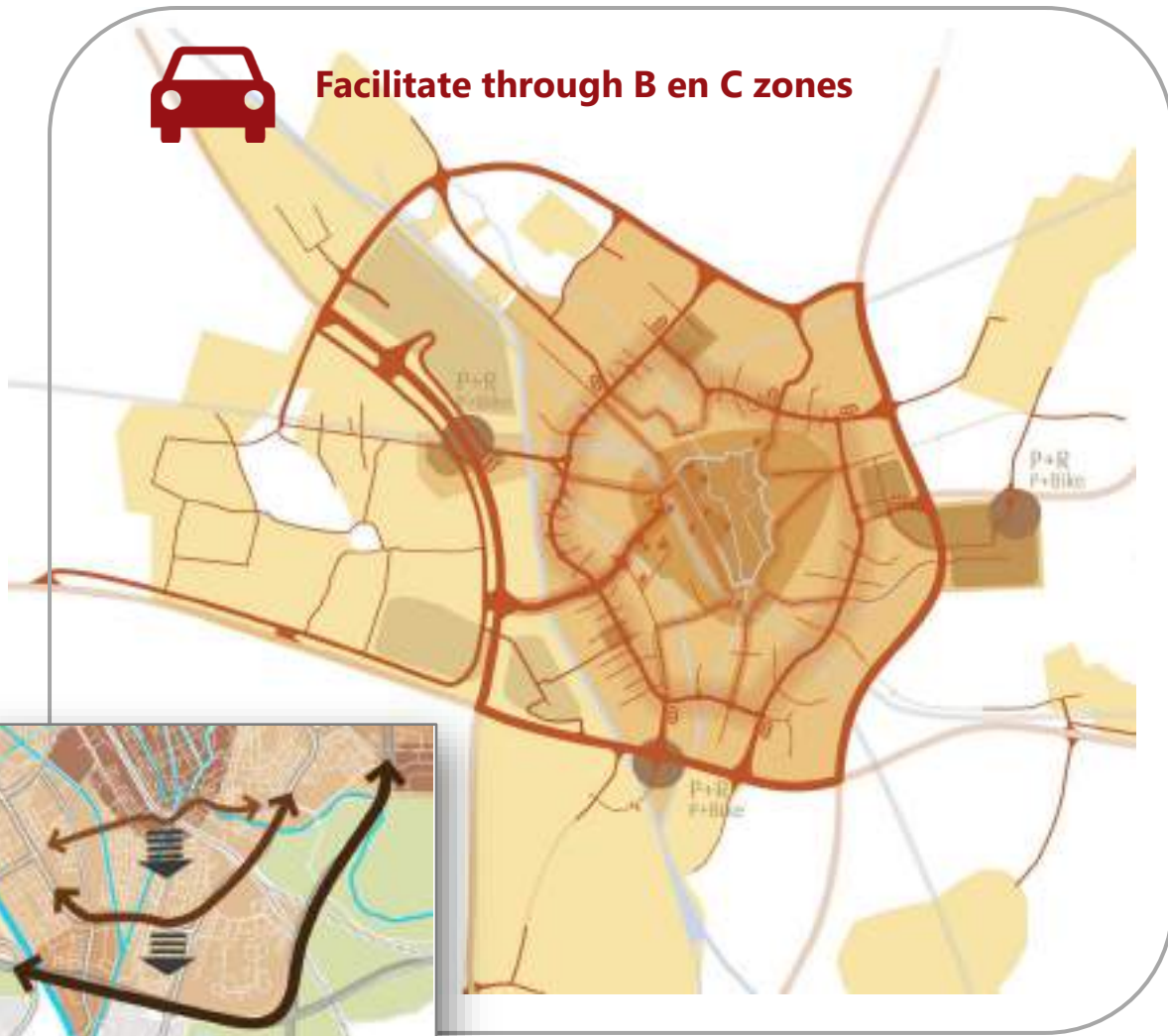
C-zone: suburbia, lower densities, facilitate mobility in separated structures, free parking



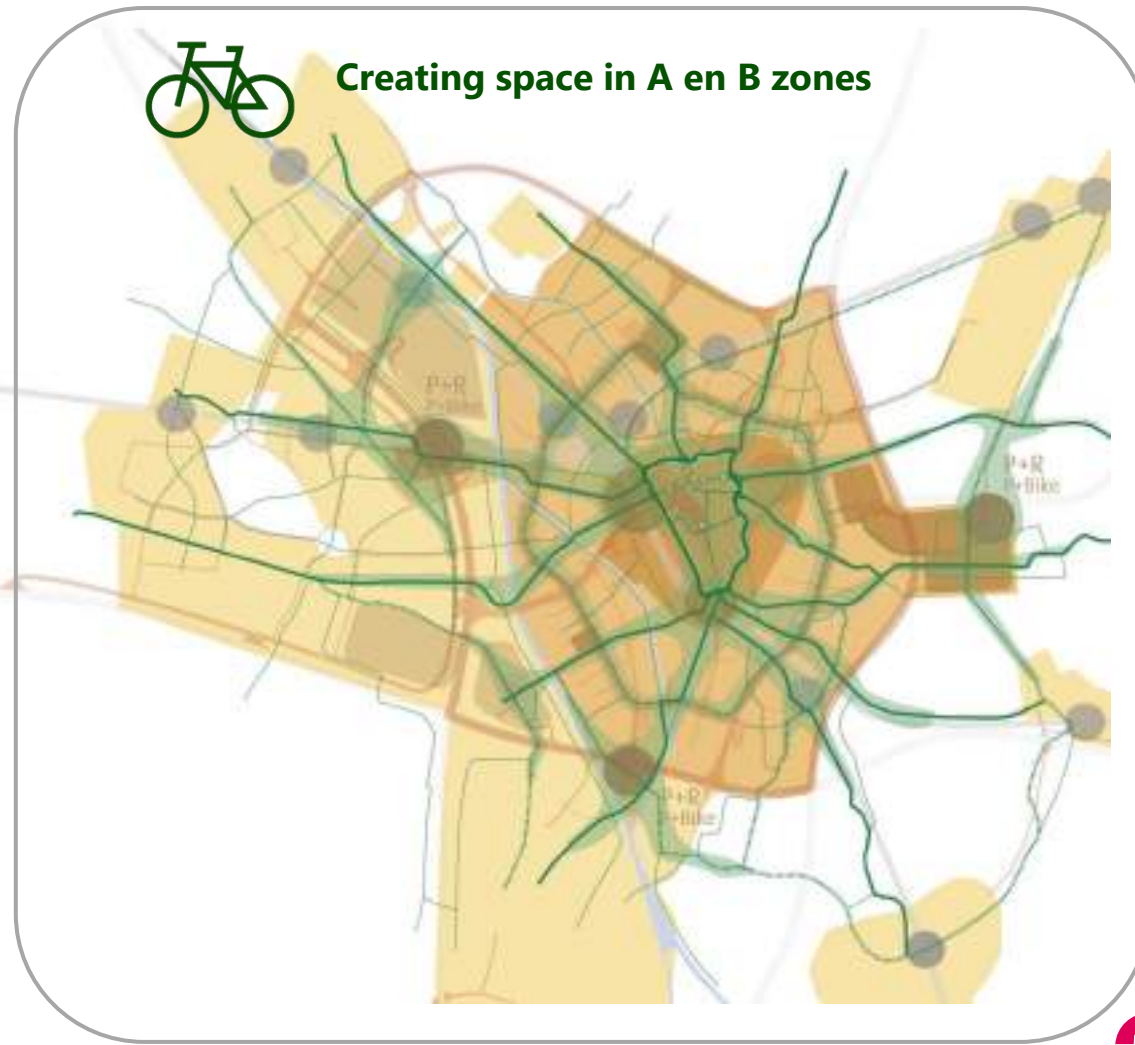
“A” - zones (low speed): Downtown (centre) and University area (eastern Utrecht) – 10 minutes areas



Facilitate through B en C zones

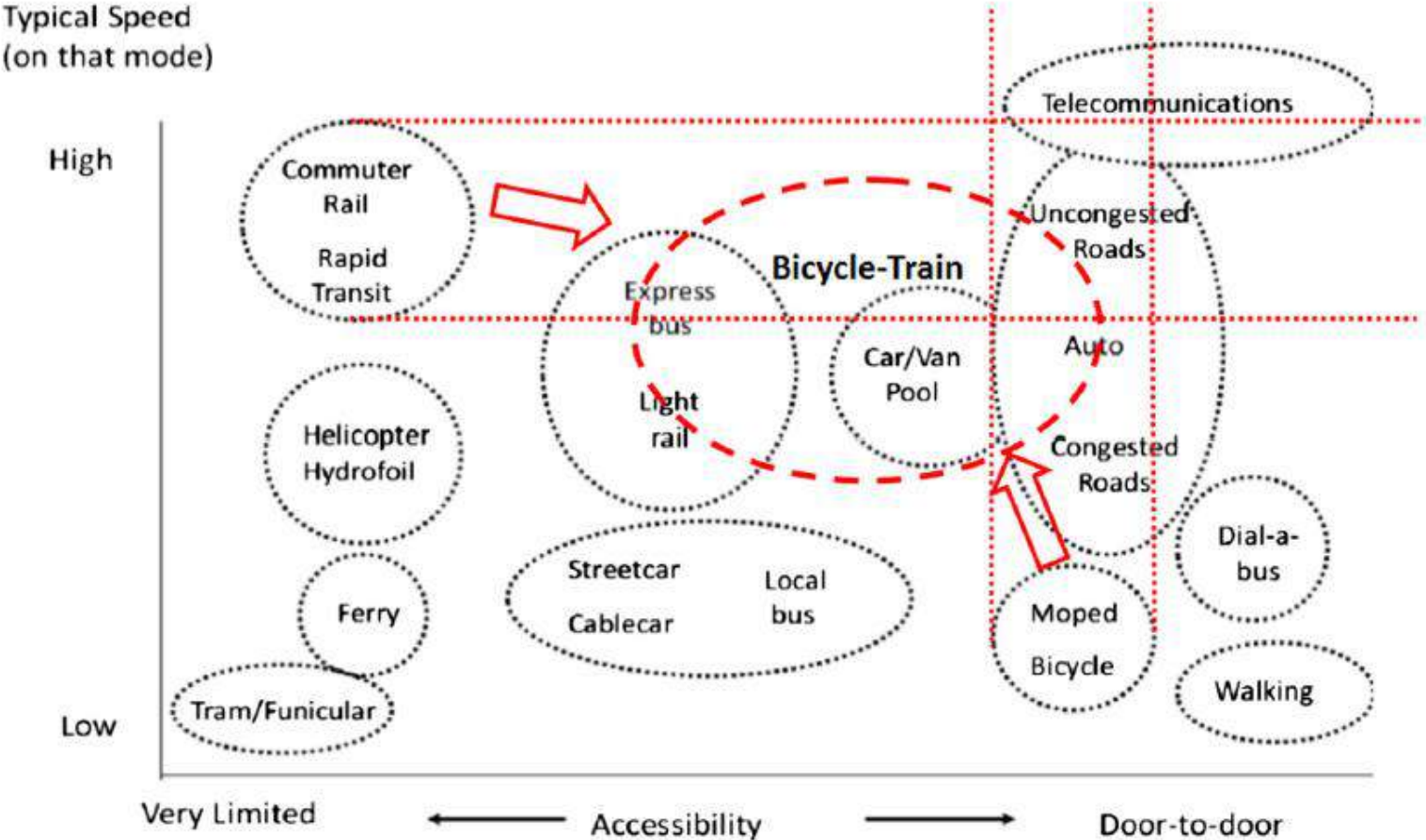


Creating space in A en B zones





Bike + Transit: Best of both worlds



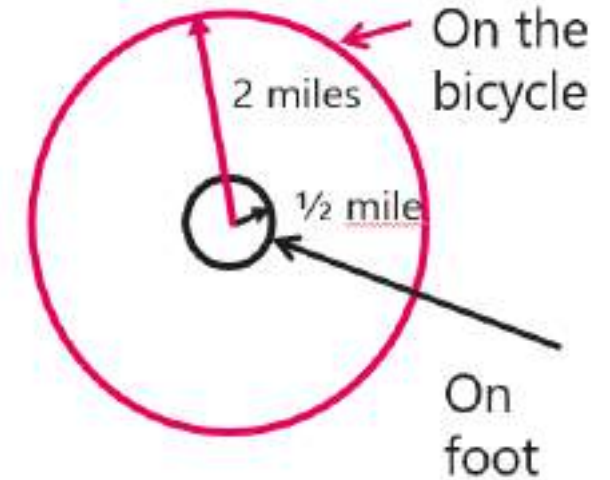
Source: Kager 2016 adapted from Meyer and Miller



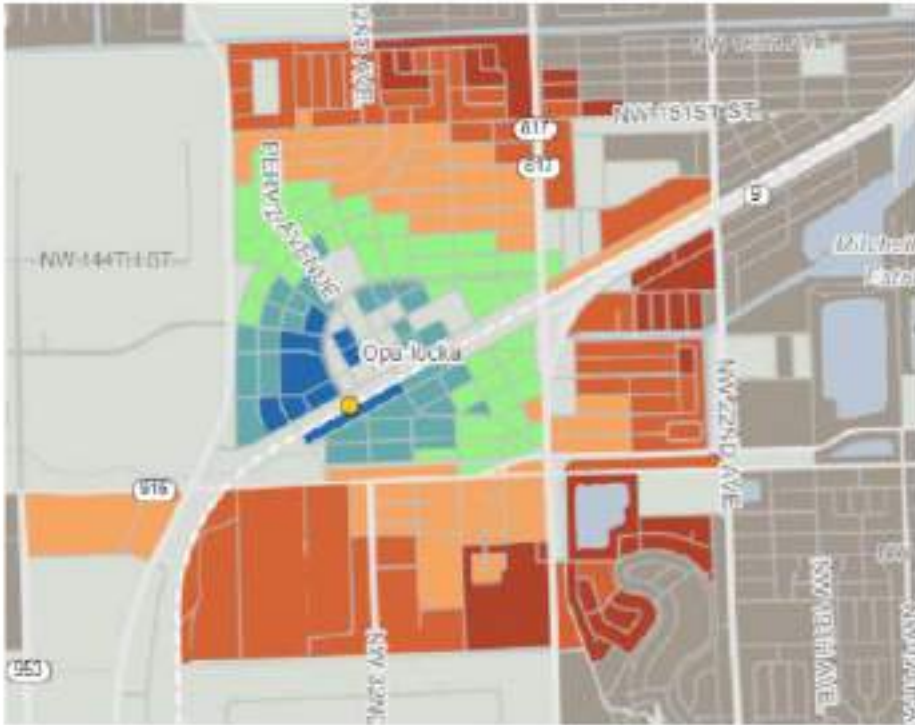
Cycling even more than doubling

- Rail and BRT is good bases
- integrated planning: network for Active Transportation, Car-network en **Public Transport network**
- 2 miles for local city-trips by bike
- 5 miles for longer, metropolitan bike / e-bike to station
- Catchment area bike 2 miles: **16 x bigger** than 0,5 mile on foot

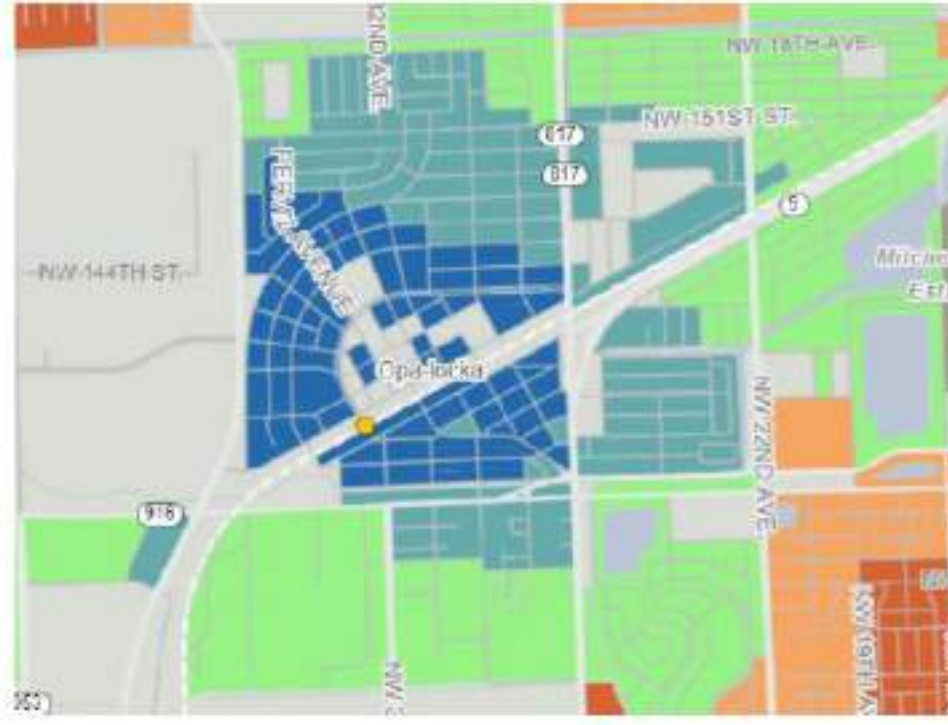
Example Houten (NL): bike parking under train-station



Bike + Transit: example Opa-locka



Tri-Rail + Walking
TRI RAIL



Tri-Rail + Biking
TRI RAIL

How to improve: 5 requirements

- Densify, connect, enjoy the space, improve, and attract.
- Network level whole city: ABC-zoning.
- Local level: station
- Park & ride HUB



Florida South

Broward County, Fort Lauderdale,
Oakland Park city, Opa-locka,
Hialeah

NACTO Designing Cities in Miami

April 29 – May 10



CTMP SHIFT305

4 Goals

The screenshot shows the top navigation bar of the Miami-Dade County website with the following menu items: Services & Information, News & Social Media, Your Government, and Employees. A search icon is located in the top right corner. Below the navigation bar are four goal cards, each with a background image and a 'LEARN MORE' button.

- SAFE**
Promoting a culture of safety and security by making Miami-Dade streets, paths and transportation services accessible to all and driven by data to ensure the highest quality of service.
- CLEAN**
Delivering transportation in Miami-Dade that is resilient to climate impacts now and sustainable for future generations.
- EFFICIENT**
Committed to utilizing Miami-Dade County's street space, data and operations to minimize travel time and cost, and to maximize quality of life.
- CONNECTED**
Providing Miami-Dade residents, workers and visitors a transportation network that allows them to readily get to the places they choose to work, play and learn.

Safe



Clean



Efficient



Connected



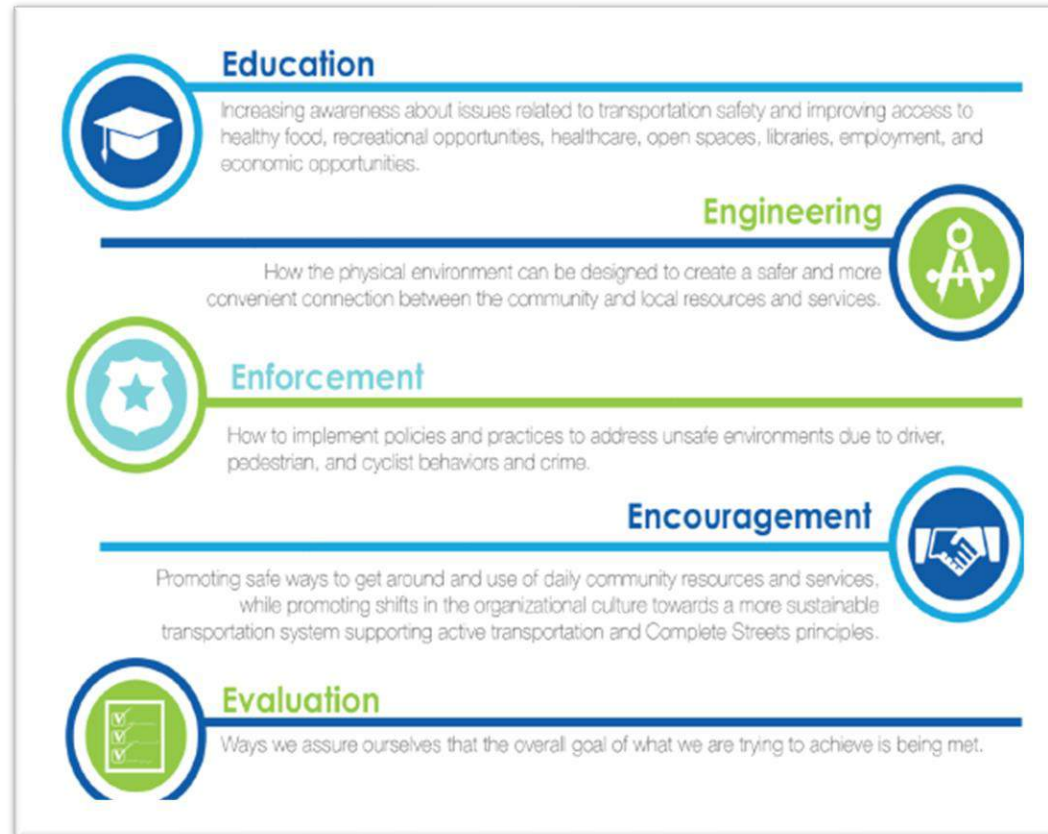
TB Broward County

ThinkBike Workshop Local Case Study



5 E's (infra) Broward County

- Education
- Engineering
- Enforcement
- Encouragement
- Evaluation



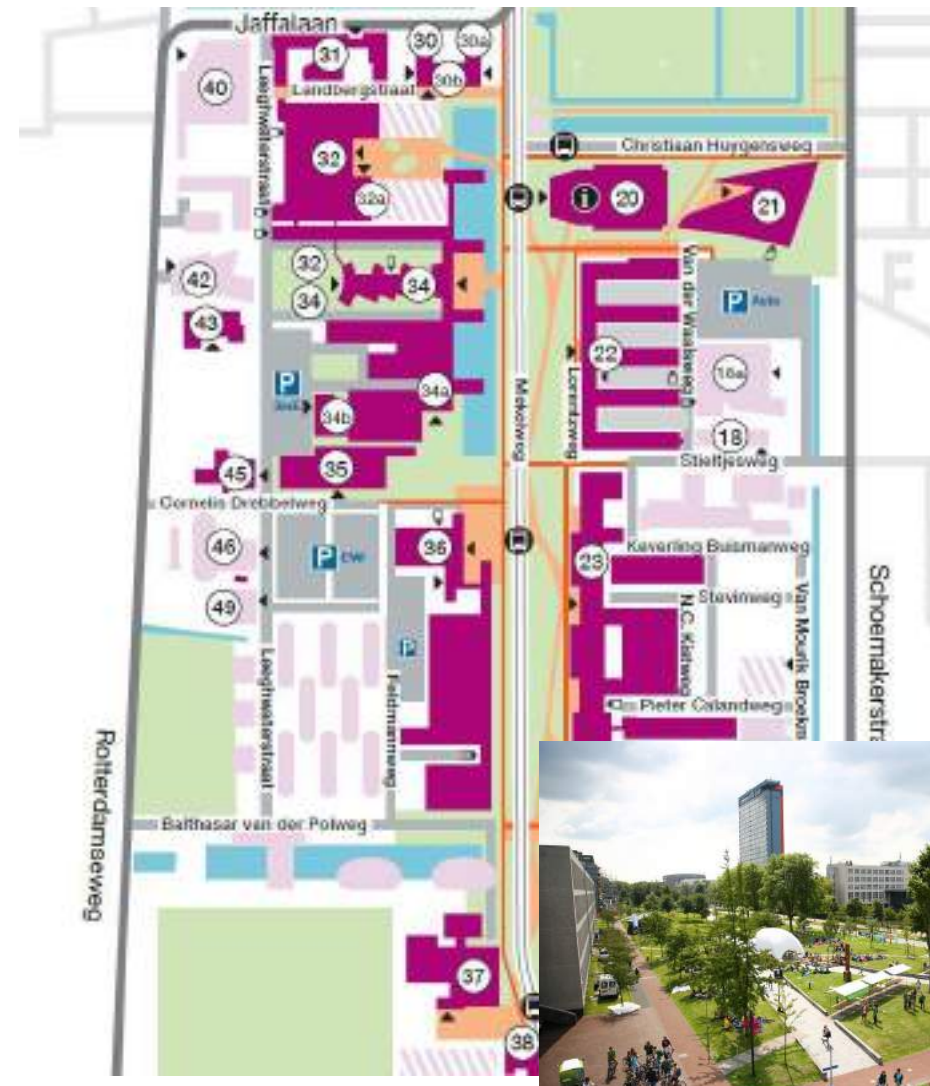
Dare to cycle



Able to cycle – 2 Roads in Florida South



USA versus NL college/campus



USA versus NL college/campus



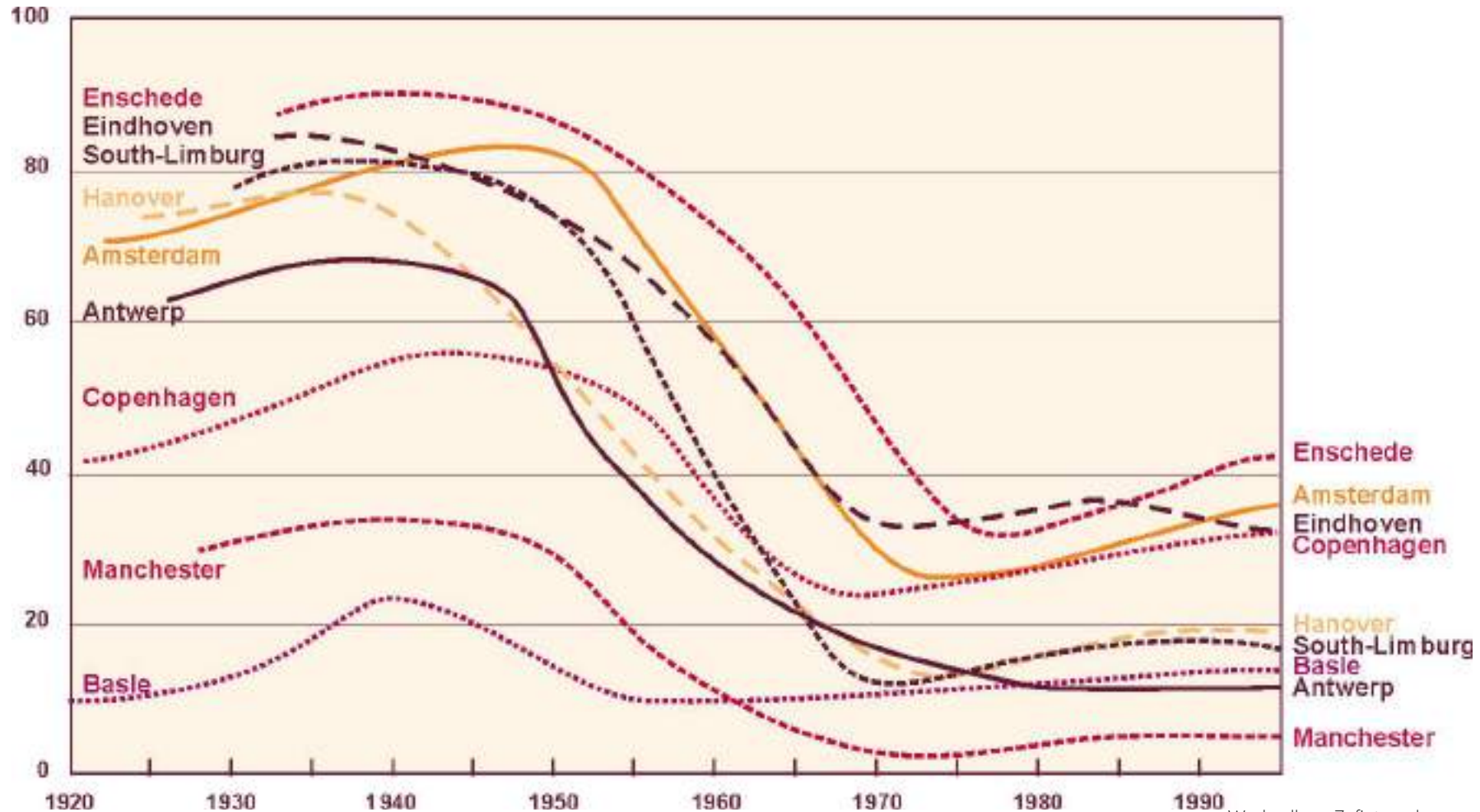
USA: a lot of cycling California Cycle highway



1896, Horace Dobbins, California Cycleway Company
bron: www.lowtechmagazine.be (11/01/2010)



% of Trips by Bike in Europe (1920-1995)

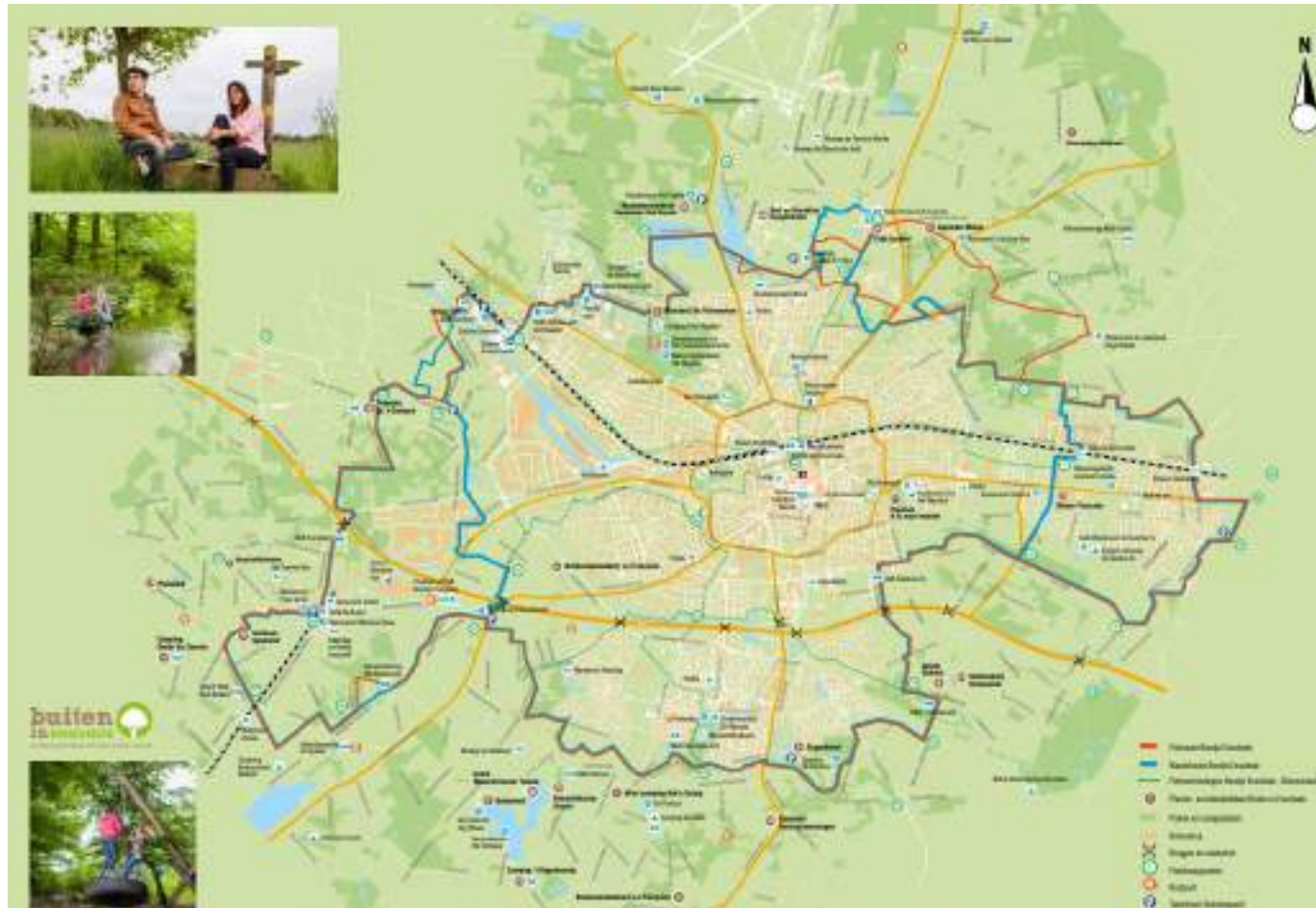


Regional Bicycle highway F35 – Trails in US cities

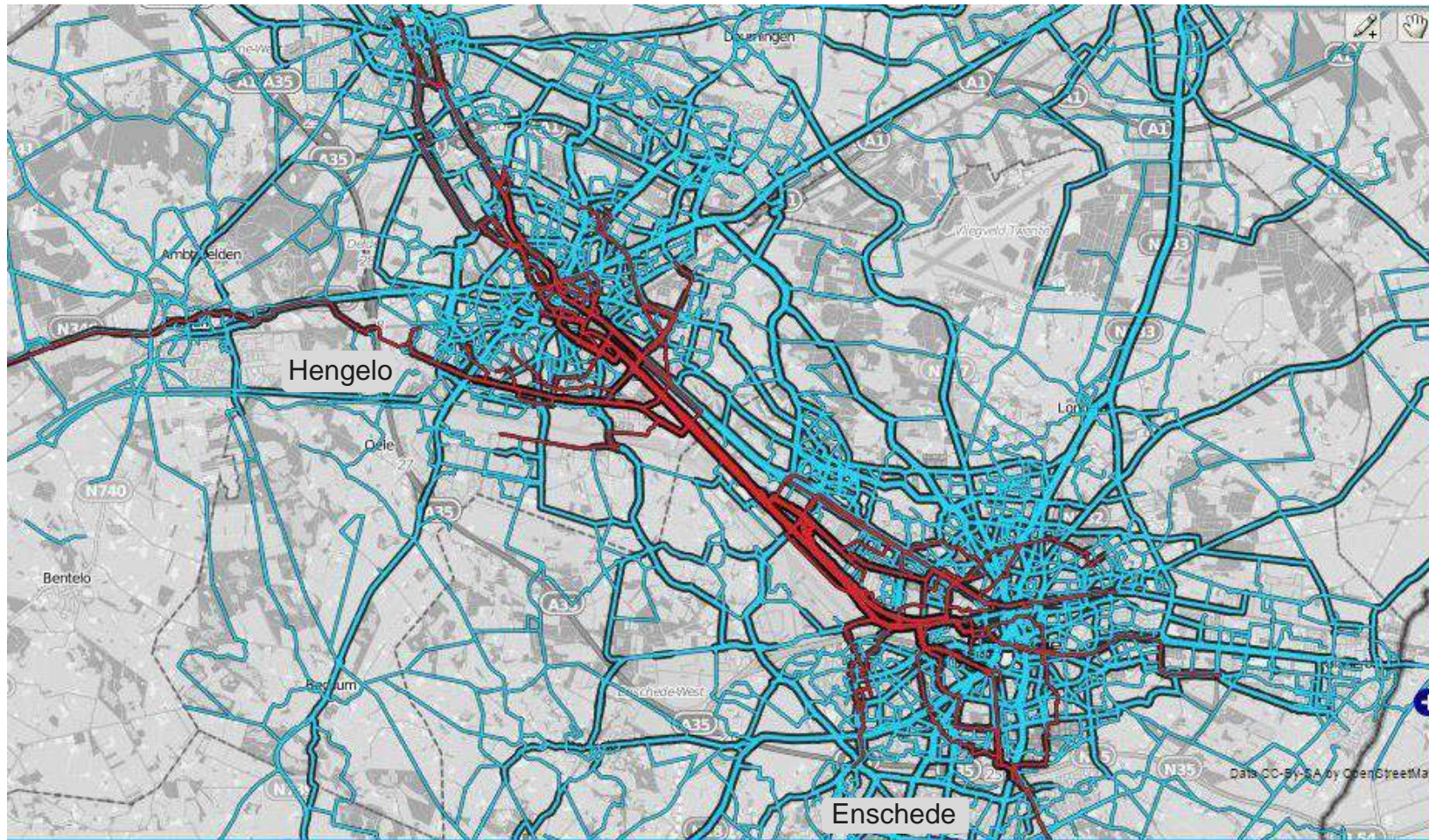


Kommunalpolitiker aus dem Kreis Borken waren gestern auf dem F 35 zwischen Enschede und Hengelo unterwegs. Barnekamp

Recreational bike network ('circle')



Bike users of the F35 near Enschede (GPS-data)



Bikers come from far away to choose the attractive Cycle highway

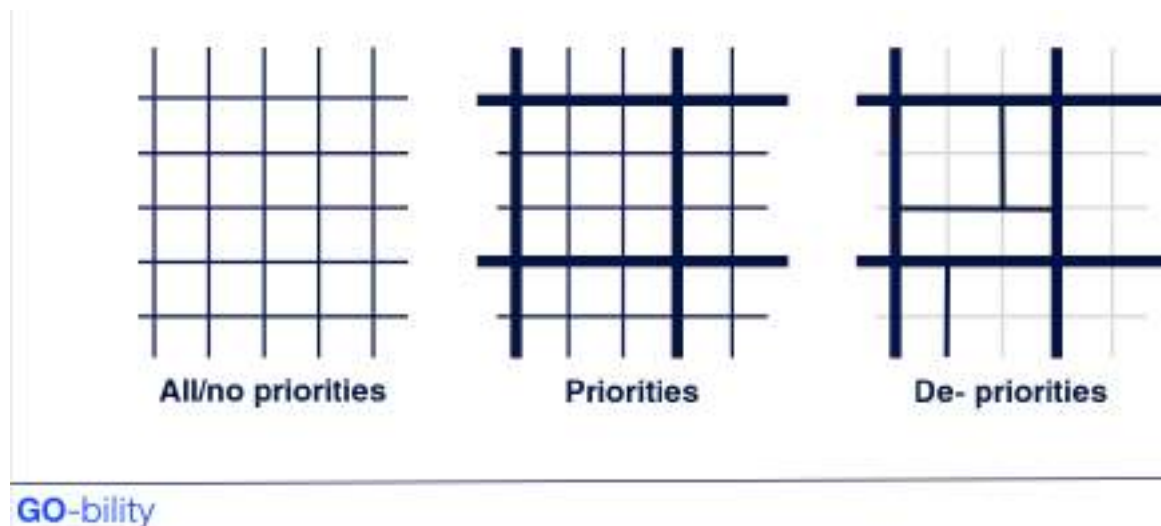


Recommendations



Recommendations Hardware, Software, Orgware

- Develop Bike and Walk network, based on destinations and 5 requirements
- Combine Bike with Transit for the longer trips
- Car-management – livable neighborhoods (see Houten and below)
- Promote /educate cycling and (in general) road safety



Invest in protected bikeways and promotion cycling



CICLO-LEAH BIKE Saturday, May 4, 2024 @ 11:00 A.M.



Bring your bike, helmet, water bottle, and enthusiasm. We'll provide the audit materials. Bikes will be available on loan for the duration of the event.

We are thrilled to invite you to our Community Bike Audit in Downtown Hialeah. This is a chance for cyclists, pedestrians, and all stakeholders to come together, explore our streets, and parks and identify ways to make them safer and more enjoyable for everyone.

A bike audit is an event where stakeholders ride through the neighborhood to assess the condition of our bike facilities. We'll look at road surface quality, signage, lighting, and more. Your local knowledge and experience can help shape future improvements in our community. Plus, it's a great way to meet fellow cyclists and advocates in your area!

MEETING POINT:
BABCOCK PARK
851 East 4th Avenue,
Hialeah, FL 33010

We will ride to Shoma Village where there will be Food Trucks & activities for the whole family!

SHOMA VILLAGE

3 MILES 30 MINUTES

Follow us on Instagram @Hialeah2050

www.hialeah2050.com #hialeah2050

Scan QR to receive the QR code



Recommendation: Orgware

" I never want to build another traditional intersection ever again."

- Dillon Willett, Capital Projects Engineer





Thank you

Rtavest@goudappel.nl





URBAN-RURAL CONNECTIONS

23 mei 2024

Miami Dade TPO

Christien Rodenburg, bicycle expert

Content

- Background
- Context of Utrecht
- Utrecht's bicycle policy over the years and what we learn from it
- Rural and urban connections
- Preview of cycling route Utrecht

Utrecht in the region

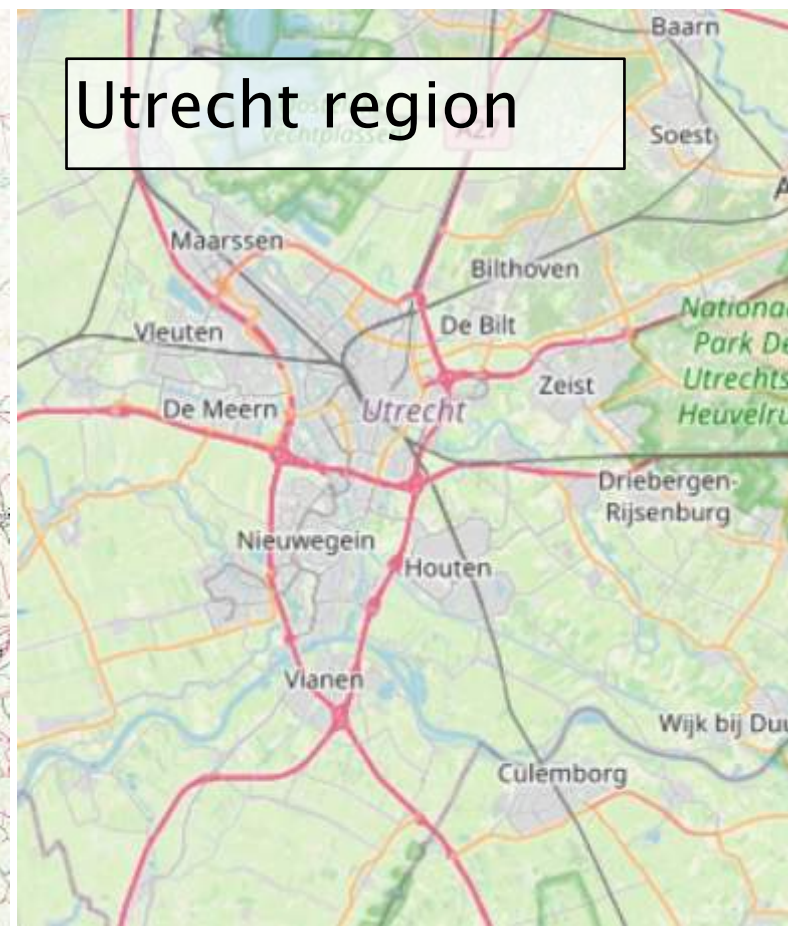
The Netherlands



Utrecht province



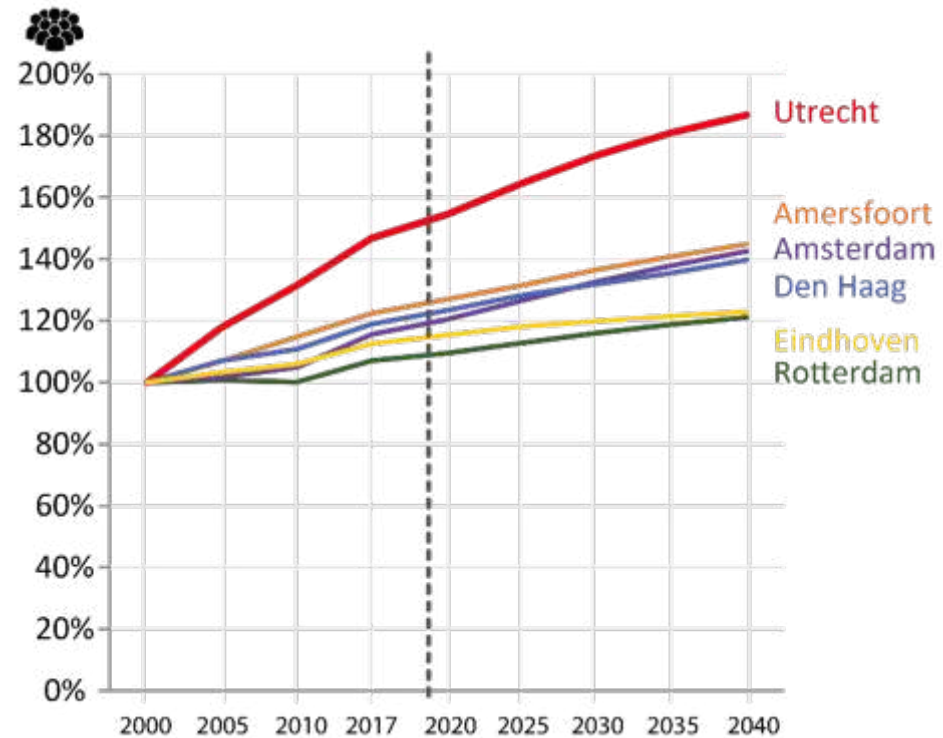
Utrecht region



Utrecht facts and figures

- Medieval city, originally a Roman fortress
- 368,000 inhabitants in the city, and 712,000 inhabitants in the region
- Fastest growing city: in 2040 471,000 inh.
- University highly regarded worldwide. Almost 70.000 students university and college
- Junction of main roads and railways.
- Pre corona 200,000 passengers daily, in 2021 87,000/day (> pass./day Schiphol Airport)
- Most competitive region in Europe (RCI 2022)

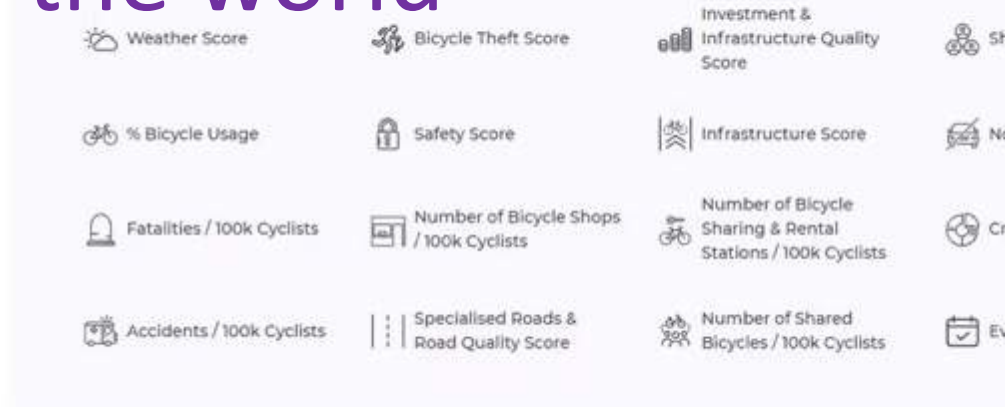
....so it's getting crowded



Index Scores

Bike capital of the world

- For what it's worth it....



#	City	Country	Size	☀️	🚲	👮	🔒	🛒	🏗️	👁️	🚲	🚲	👤	👤	🗑️	
1	Utrecht	Netherlands	S	65.83	51.00%	1.94	279.88	78.99	82.46	37.78	60.78	98.87	87.61	21.77	12.07	17
2	Munster	Germany	S	58.74	39.10%	0.53	445.58	83.04	88.43	28.15	53.05	88.04	81.23	35.52	26	31



Utrecht aangewezen als nummer 1 fietsvakantiestad door Spaanse National Geographic



RANK HISTORY

2011	2013	2015	2017	2019
1. Amsterdam	1. Amsterdam	1. Copenhagen	1. Copenhagen	1. Copenhagen
2. Copenhagen	2. Copenhagen	2. Amsterdam	2. Utrecht	2. Amsterdam
3. Barcelona	3. Utrecht	3. Utrecht	3. Amsterdam	3. Utrecht
4. Berlin	4. Seville	4. Eindhoven	4. Strasbourg	4. Antwerp
5. Tokyo	5. Bordeaux	5. Malmö	5. Malmö	5. Strasbourg

Het rustige ritme, de bewegingsrijheid, het gemiddelde aantal fietsen op de weg en de vele fietsroutes maken Utrecht tot een ideale locatie om voor een fietsstad te kiezen tijdens het onderzoek van de Spaanse National Geographic. En Utrecht is dat uit een vergelijkend onderzoek.

Het onderzoek, dat is uitgevoerd door fietsverzekeringmaatschappij 90 steden wereldwijd. Met 16 verschillende pijlers wordt de fietsvriendelijkheid van de steden gemeten.

Utrecht named most bike-friendly city in the world for 2022

According to the Global Bicycle Index 2022, most of the top 10 cities were in Europe, with Germany...

How did Utrecht come to this...

Short review of recent mobility strategies

- A. 70's untill 2000:
- B. GVVP 2005 – 2020:
- C. Utrecht Aantrekkelijk en Bereikbaar (2016)
- D. Ruimtelijke Strategie 2040, Utrecht dichtbij, de 10 minutenstad (2021)

A 70's until approx. 2000

- Emphasis on traffic flow for car and public transport
- Solving safety issues for cycling at several spots spread across the entire city
- Little budget, no dedicated project team
- Result: basic safety for existing cyclists



Voorstraat 1979, Fotodienst GAU,Utrechts archief



Voorstraat 2009, Googlemaps



Jutfaseweg 1987, utrechts archief



Jutfaseweg 2003

B. Making a U-turn in 2010

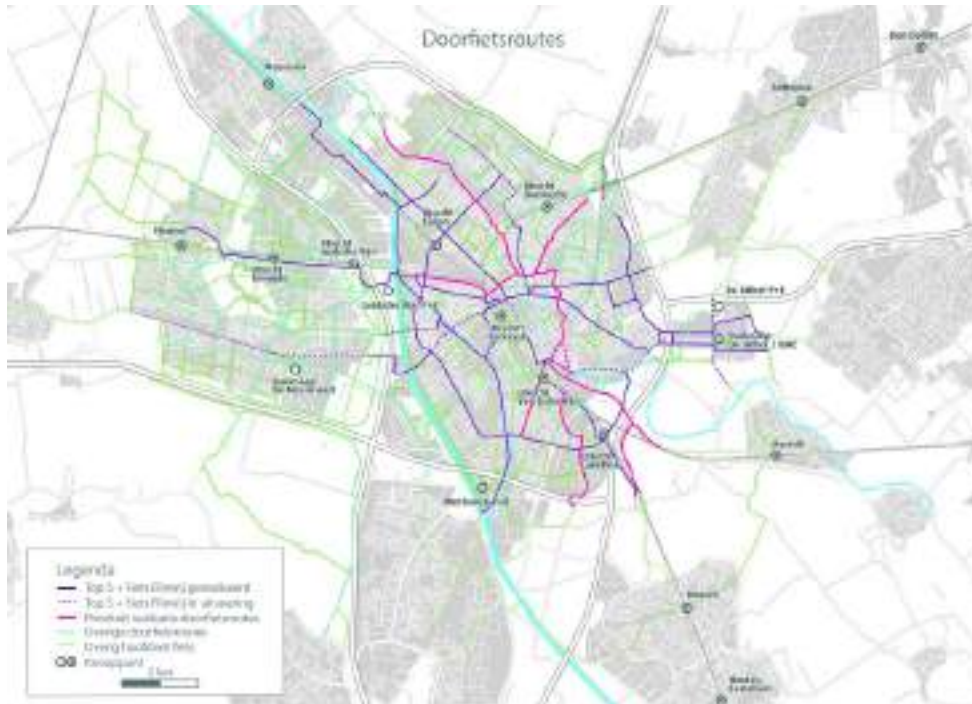
- Better balance between accessibility, safety and environment
- Coherence with major cityprojects ensures investments for cycling:
 - Leidsche Rijn 30,000 houses
 - Stationsgebied CU2030
 - Cycling program
- Result: cyclists use the new routes and making the efforts visible to everyone. Due to the development around the renewed station, worlds biggest bike parking is being build.



Crossing of main routes north/south and east/west (opened in 2014)

C. Utrecht Aantrekkelijk en Bereikbaar

- Further change in thinking.
- The bicycle is given more space at the expense of cars and carparking.
- From the main cycle network to cycle routes around the citycentre.
- Utrecht bicycle plan, with a complete bicycle policy (traffic lights, bicycle parking, bicycle network, bicycle incentives, bike economics, etc).



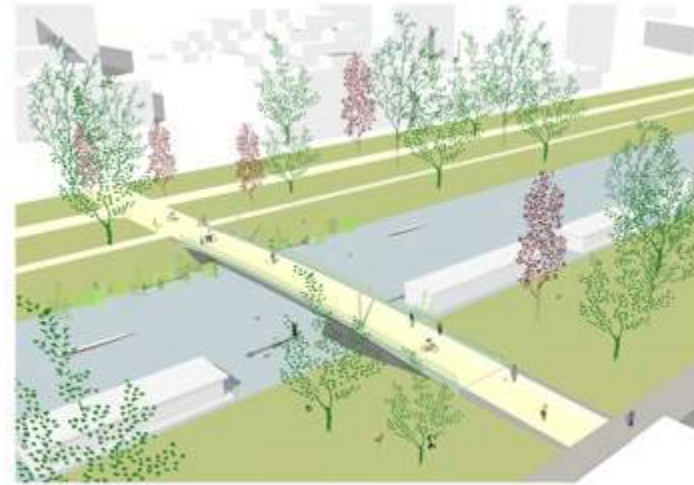
D. 10 minute city

- City residents can find everything they require within a 10-minute walk or by bike
- Crucial factors





Verdichting Zijdebalen, google



Impression Merwedekanaalzone 2, bron, gemeente Utrecht

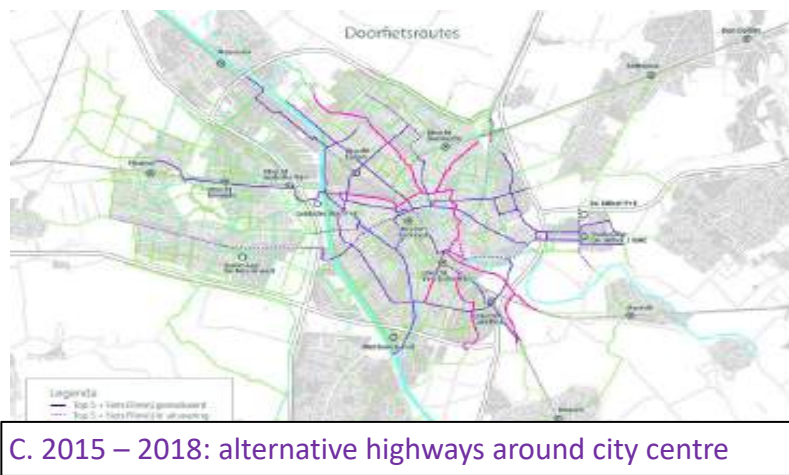
Development Utrecht's Bicycle policy



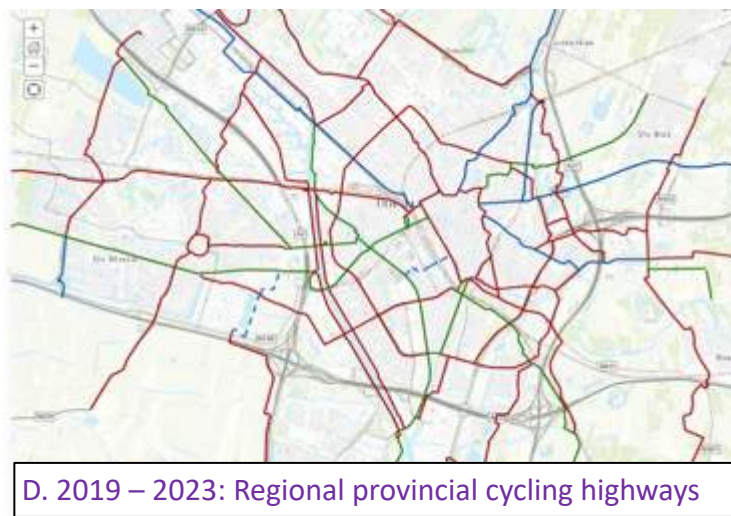
A. Until 2000: improving several unsafe locations



B. 2010 – 2014: Top 5

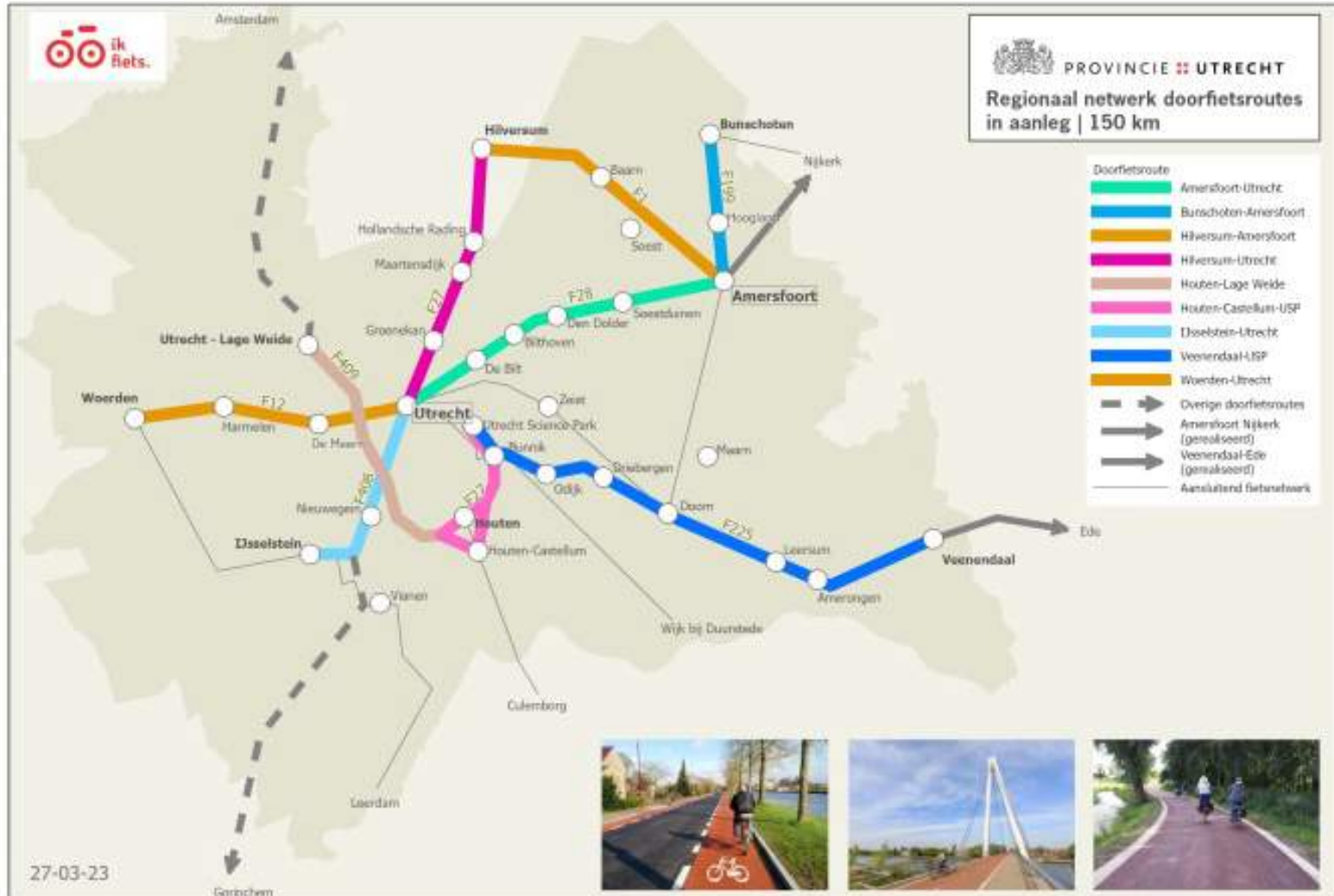


C. 2015 – 2018: alternative highways around city centre



D. 2019 – 2023: Regional provincial cycling highways

Urban – Rural connections



Urban - Rural “Doorfietsroutes”

- Start programme province in 2016
- 9 priority routes
- 150 km
- Connection between residential area's and offices op 10 – 30 km afstand
- Compared with ‘normal’ cycling routes:
 - High quality surface
 - fewer stops,
 - wide enough for all types of cyclists,
 - clear wayfinding based

Governance

- Selection of the 9 routes was based upon a study with the bicycle model BRUTUS
- Start with an letter of intent that contains agreements about everyone's role and financing
- The province is in charge of study's about route variants and the design. The municipality is responsible for construction.
- The province and municipality jointly ensure coordination with stakeholders, residents, Fietzersbond and other municipalities.

Communication

- Project communication and insight into progress via province:
- <https://storymaps.arcgis.com/stories/5eb1c9df6395405594f6d383529e7336>
- Progress until now, about 1/3 realized, 1/3 under construction and 1/3 in study
- Baseline measurement (number of cyclists and opinion about quality) completed for all routes, a measurement will follow

A few highlights Utrecht - Amersfoort



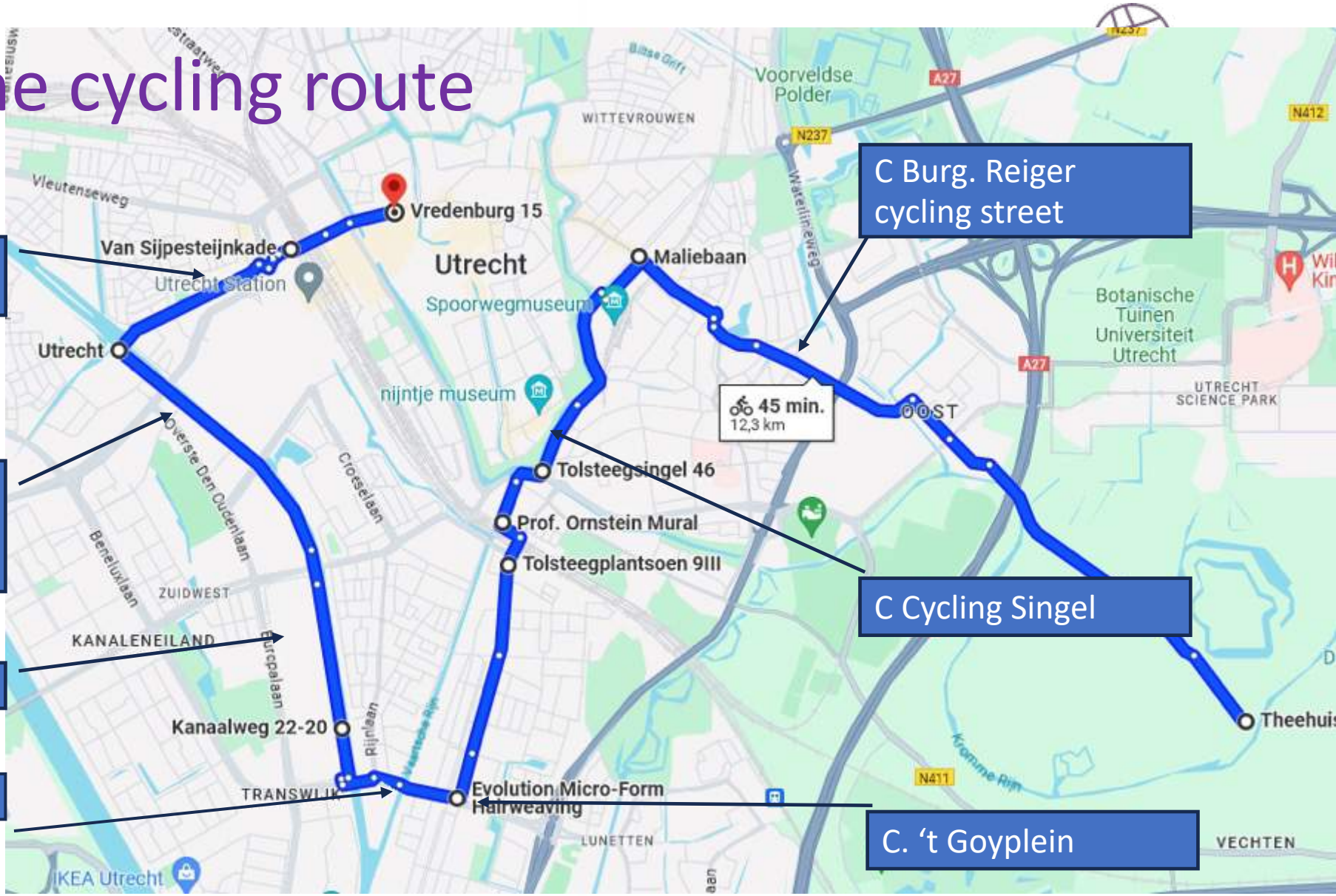
Preview of the cycling route

B Cycling street Leidseweg

D Rural cycling route Nieuwegein - Maarsse

D Merwedekanaalzone

A. Jutfaseweg, bicycle lane



C Burg. Reiger cycling street

C Cycling Singel

C. 't Goyplein

🚲 45 min.
12,3 km



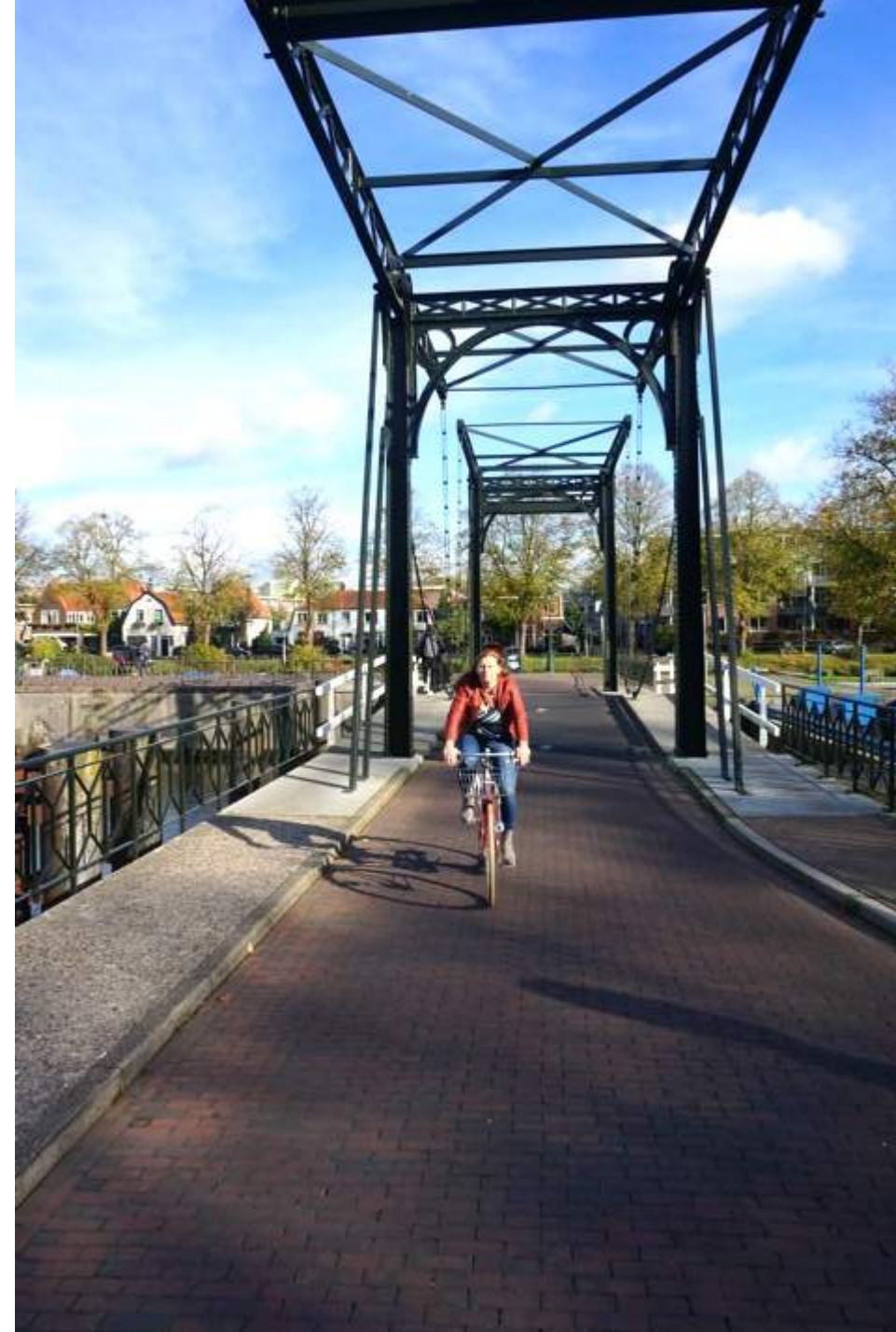
Thank you for your attention!

Please contact me for
further questions



Christien Rodenburg
Senior Advisor Active Mobility

www.newurbanmobility.nl
christien@newurbanmobility.nl
(+31) 6 44 024 044



Welcome in Houten

Perhaps even the best cycling town in the world

Houten

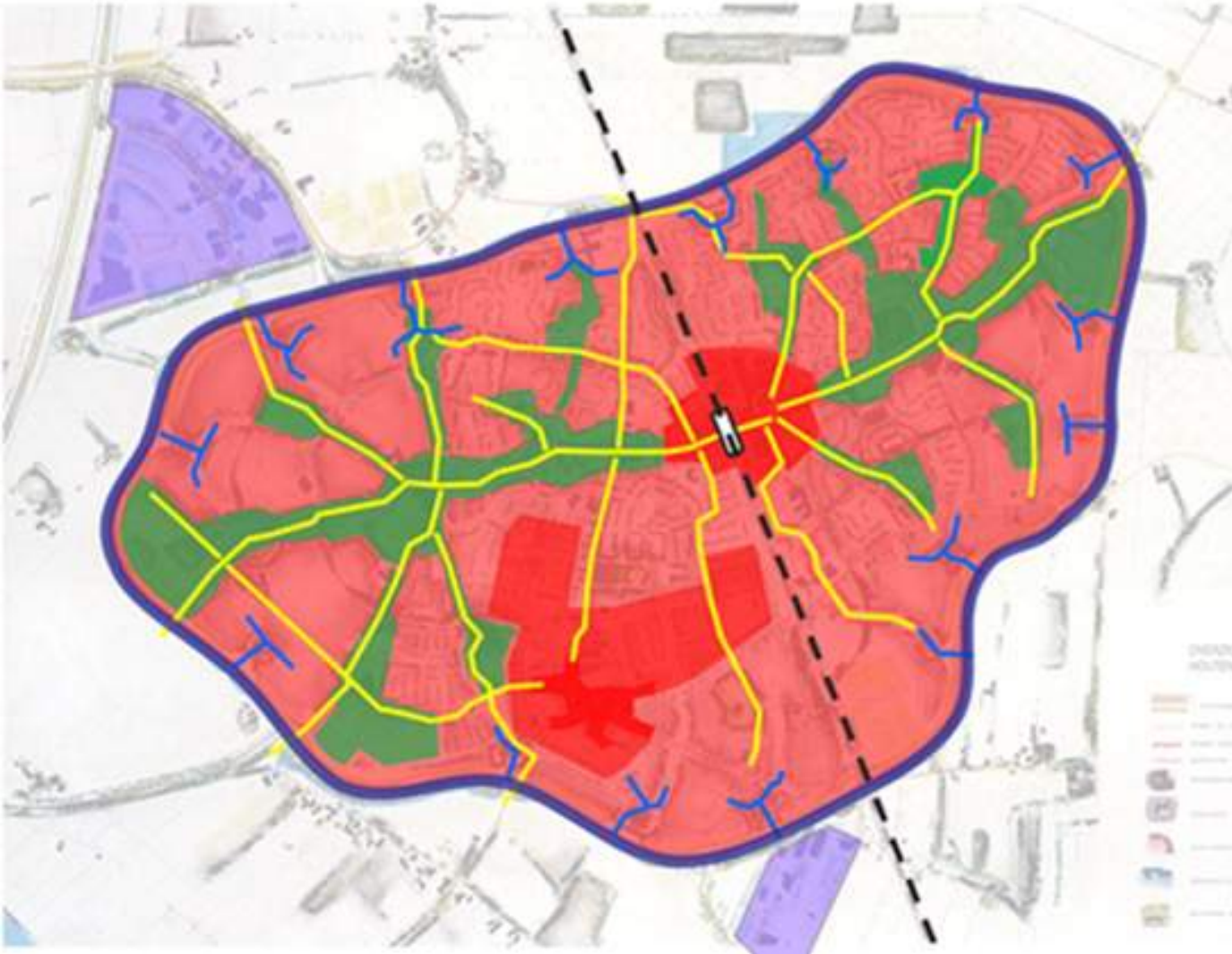
Farmers village - 1970 - Satellite town

4.000 ~~100.000~~ 25.000 30.000 50.000 60.000?









From 30.000 to 50.000 inhabitants



Heatmap of bicycle traffic



On your bicycle 5 minutes



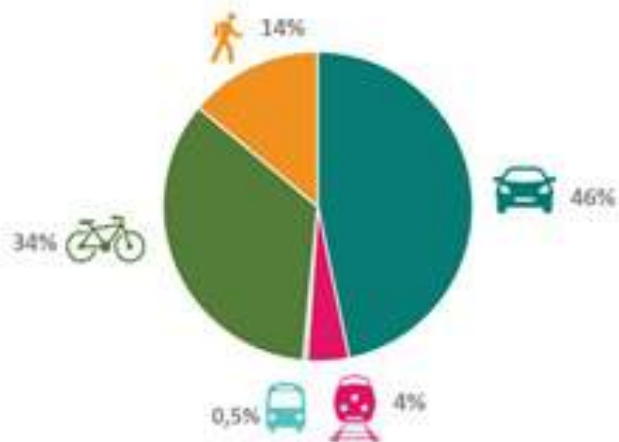
perfectly adjusted for cycling: 5 minutes cycling ...

Traffic in Houten

MODAL SPLIT HOUTEN

OVIN-Data 2013-2017

Alle verplaatsingen



Verplaatsingen tot 7,5 km



Verplaatsingen 7,5 – 15 km

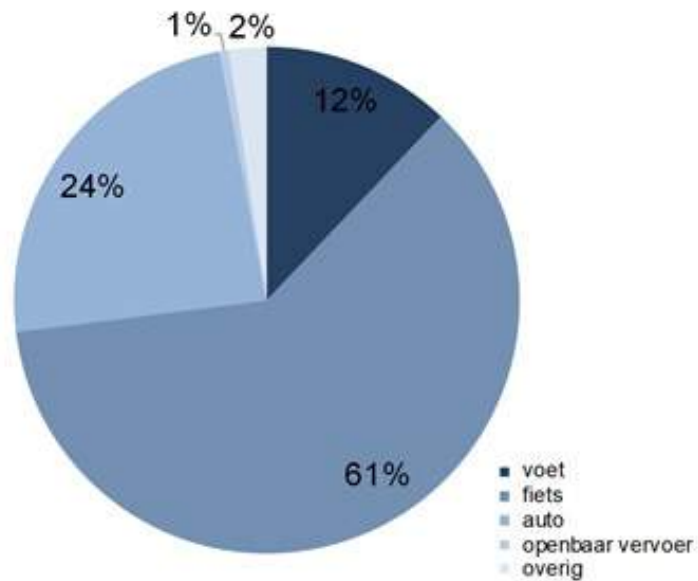


Making the connection between Houten North and South



Traffic to centre

Modal split vervoermiddel winkelcentrum Het Rond (Theeuwen 2018)



modal split vervoermiddel naar centrum

Our most famous view



Bicycle parking...



The old village



Our public transport



GO-bility
more than learning...

 Member of
Dutch Cycling Embassy

RECAP, LESSONS LEARNED

Miami-Dade Bike Immersion Program
Utrecht Thursday May 23

Teije Gorris, GO-bility

A group of approximately 12 diverse individuals of various ages and ethnicities are gathered outdoors, likely on a university campus. They are all smiling and holding up white certificates or diplomas with blue and gold accents. Some are standing in the back row, while others are kneeling or sitting in the front. The background shows green trees and a brick building. The entire image has a blue color overlay.

GO-bility

More than learning

Capacity development for professionals and organizations to lead the way in the transition to active and safe mobility.



Dutch Bicycle Infrastructure Training 2024

24-28 June 2024

Full information, fees and enrolment: dtvcapacitybuilding.com

Dutch Bicycle Infrastructure Training is organized by

 **DTV**  **GO-bility**
CAPACITY BUILDING more than learning...

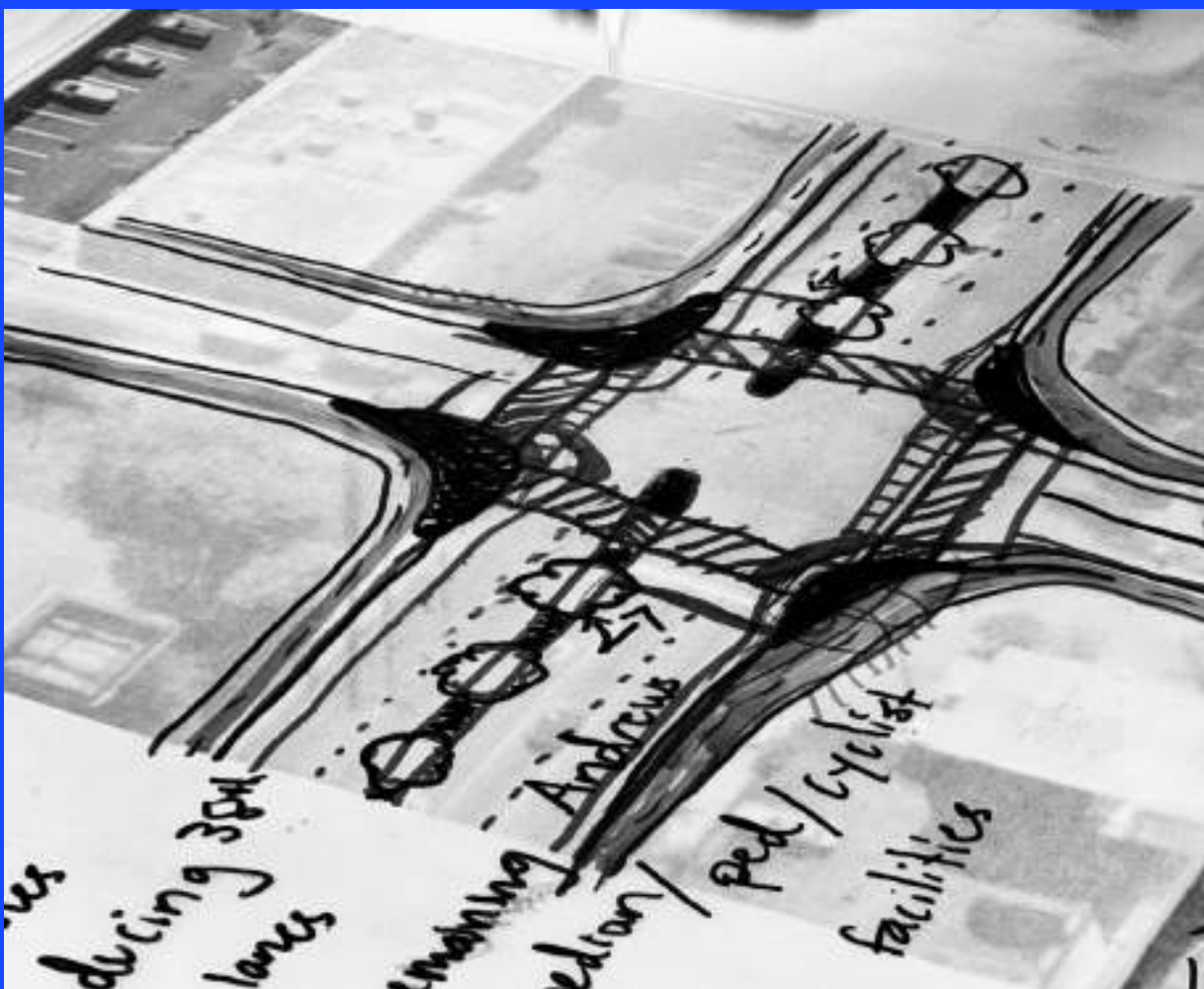


Supported by
Dutch Cycling Embassy



**BACK To The
STREETS**
SAFE STREETS SUMMIT 2023
FEBRUARY 2 & 3, 2023
HOLLYWOOD, FL







HOW DID YOU...

..DO IT?

..DARE IT?

Policies

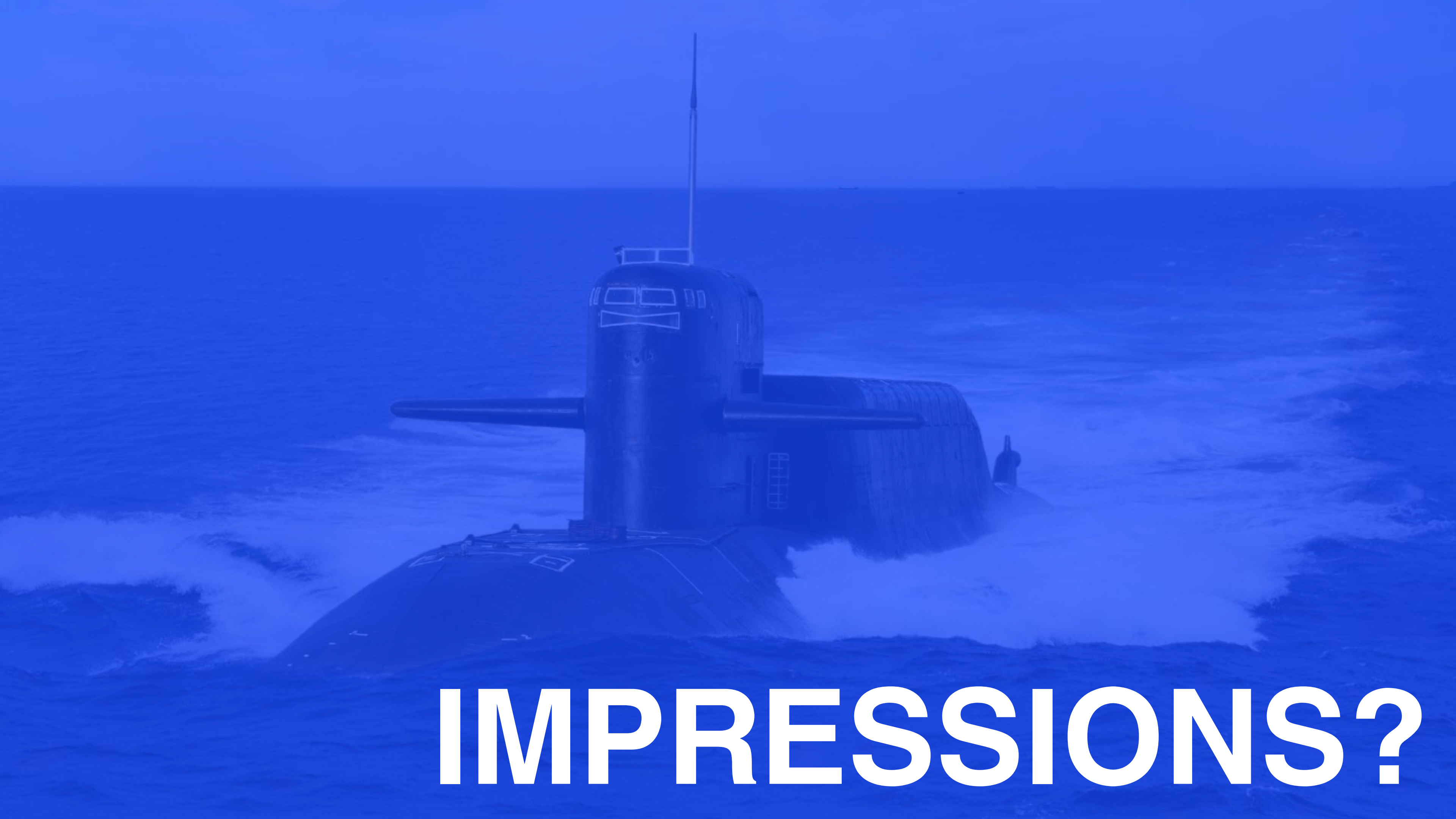
Mobility planning

Networks and design

Urban-rural connections / trails

Multi-modality

30+ miles of cycling



IMPRESSIONS?



**EXAMPLES
IN MY DREAMS.. MAYBE**



EXAMPLES
THAT COULD WORK



MY REFLECTIONS

“A solid basis”

“A wealth of opportunities”

Examples of Bicycle Infrastructure in Florida

Photos: Jesús Fuentes



The Underline, Miami



Neighborhood bike routes,
West Palm Beach



Main Street Bridge,
Jacksonville



El Río Trail, Boca Raton



LauderTrail,
Fort Lauderdale



NE 4 Street,
Fort Lauderdale



NW 6 Street, Miami



S-Line, Jacksonville



Chain of Lakes,
Winter Haven

Examples of Bicycle Infrastructure in Florida



Examples of Bicycle Infrastructure in Florida



Transit+Bike+Walking as one system



Campaigns



Leadership



Aileen Bouclé, AICP • 1st

Executive Director

Reposted from Miami-Dade Transportation Planning Organization • 1w



Welcome #NATCO2024! Miami-Dade Transportation Planning Organization was pleased to present this workshop as part of NACTO (National Association of City Transportation Officials) focus on #pedestrian and #bicycle #safety a ...see more



Valerie Neilson, AICP • 1st

Executive Director @ Palm Beach TPA | AICP Certified

1w • Edited •

Happy National Bike Month! 🚲🌞 Have you joined the [Love to Ride](#) Challenge yet? Had a great time riding on the El Rio Trail in the [City of Boca Raton](#) and logging my ride! We're already halfway th ...see more



with Uyen Dang and 4 others

Leadership





10^c
AIR MAIL

FIRST MAN ON THE MOON

UNITED STATES

Message to myself,

Think about an insight, learning, idea and/or example you acquired during these days, that could be implemented back home.

Write a message to yourself about this idea and what you want to have achieved by the end of 2024. Think about the first steps or actions.

After Summer, you will receive this card, by snail mail. We hope that it will bring up sweet memories and inspire you to continue your positive work on active mobility.



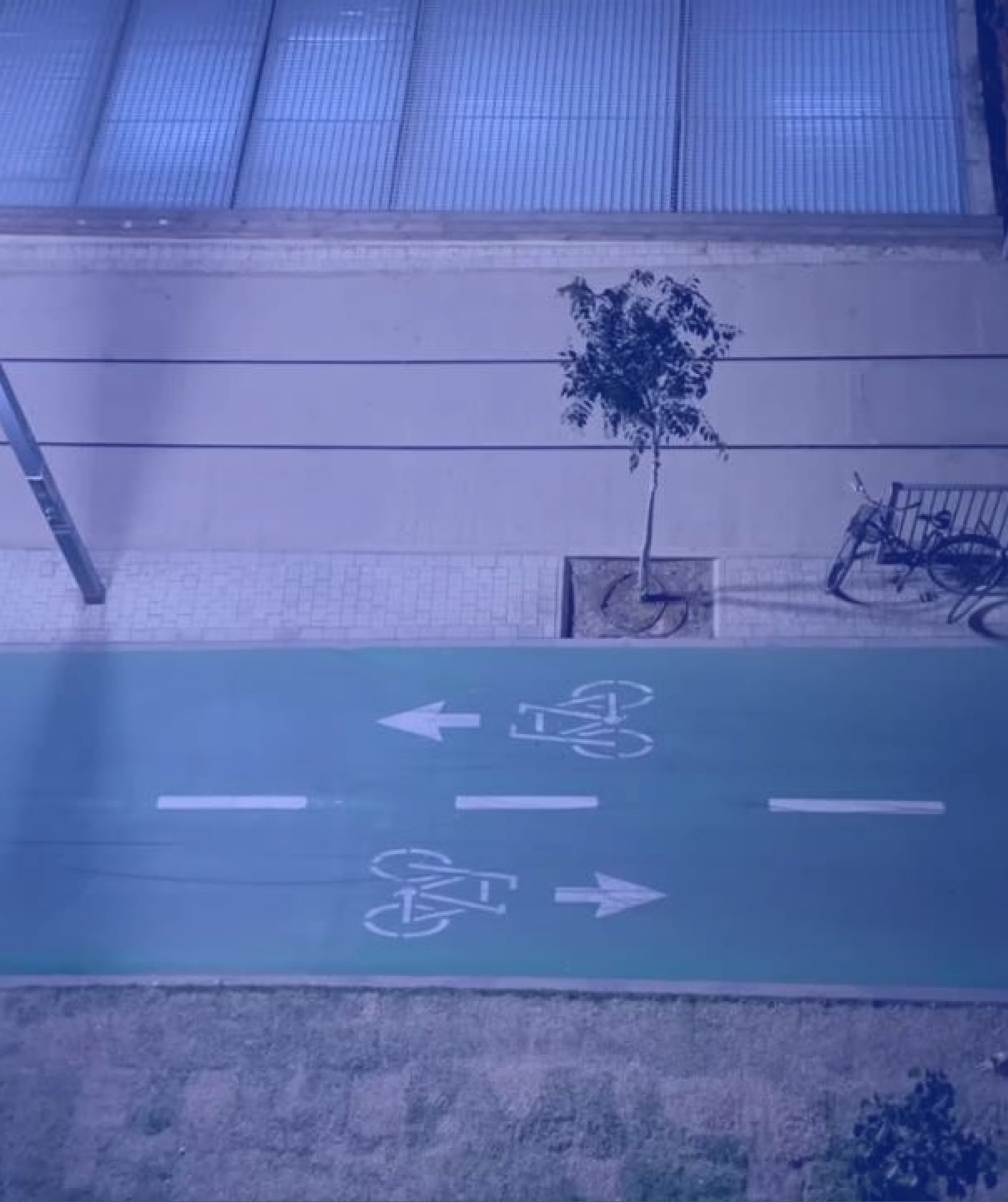
Organisation

Name

Address line 1

Address line 2

U.S.A



Contact

GO-bility
more than learning...



Member of
Dutch Cycling Embassy



Teije Gorris: +31 657726356
Email: info@go-bility.com
GO-bility.com