



# Rotterdam public transportplan 2040

Building a vital, attractive, social and sustainable city

Bas Govers  
Polis Conference, Bruxelles  
[bgovers@excellent-cities.com](mailto:bgovers@excellent-cities.com)



# Excellent-cities.com

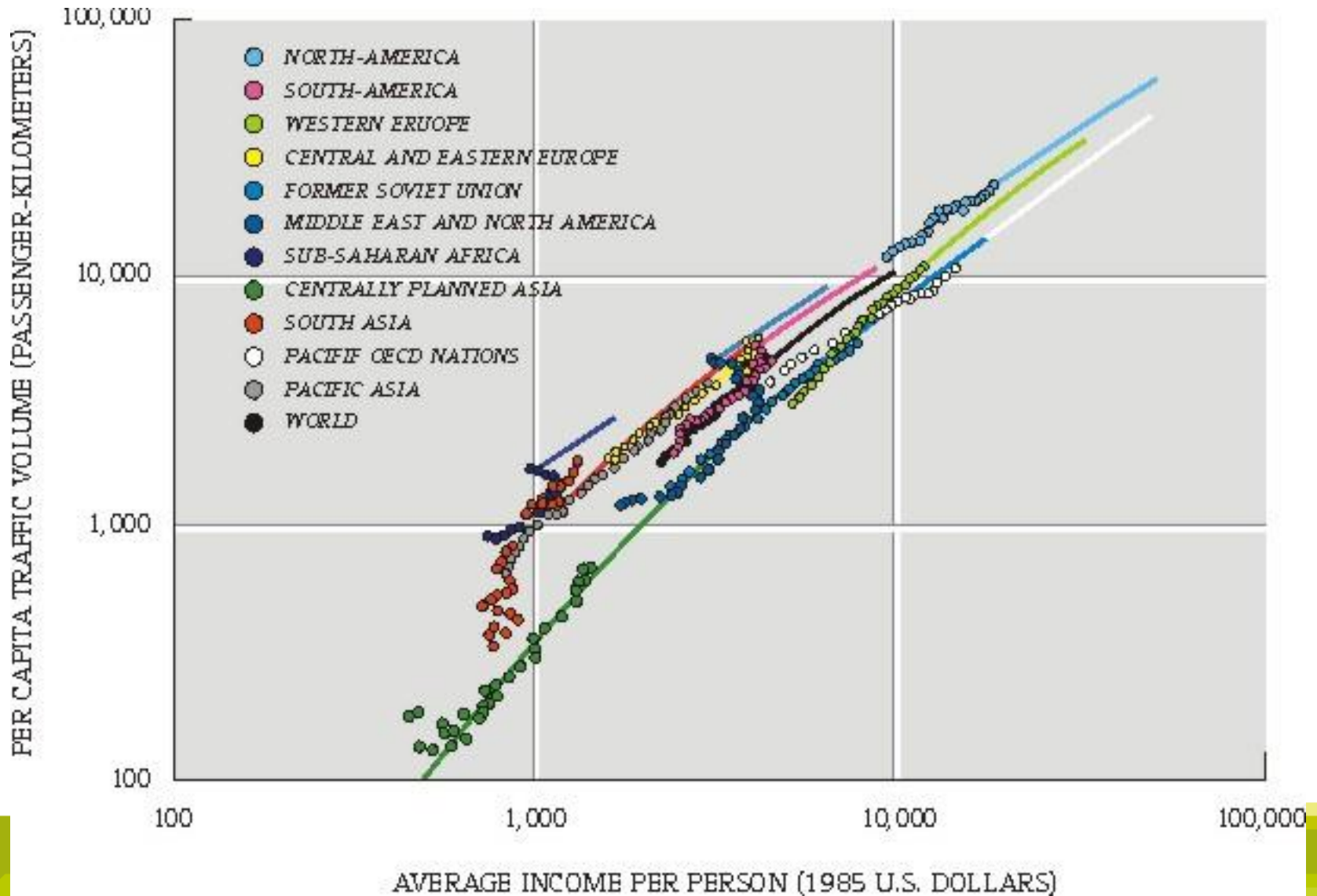


*'Using mobility planning to create healthy, attractive, vital, social and sustainable cities'*



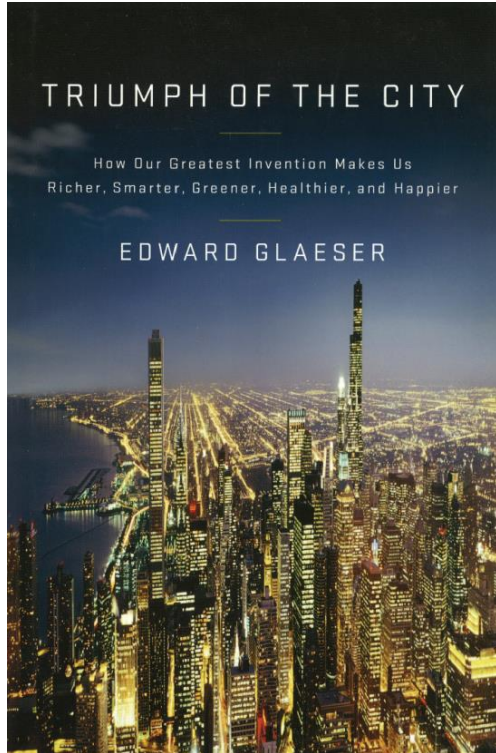


# Economic growth = mobility growth



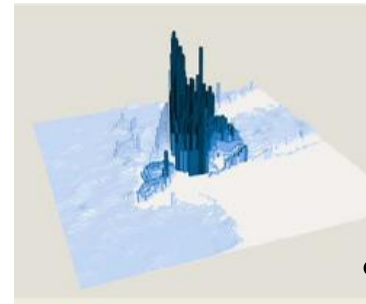


# Economic development: mega city-regions

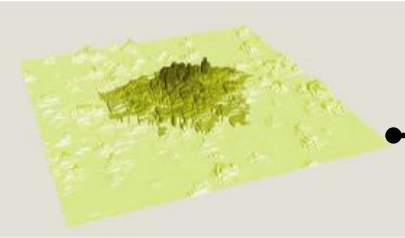




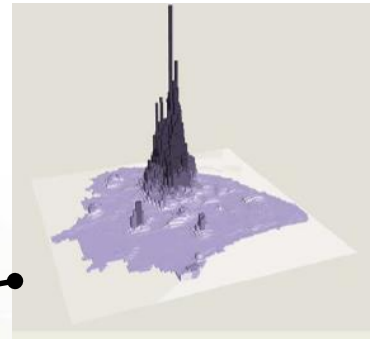
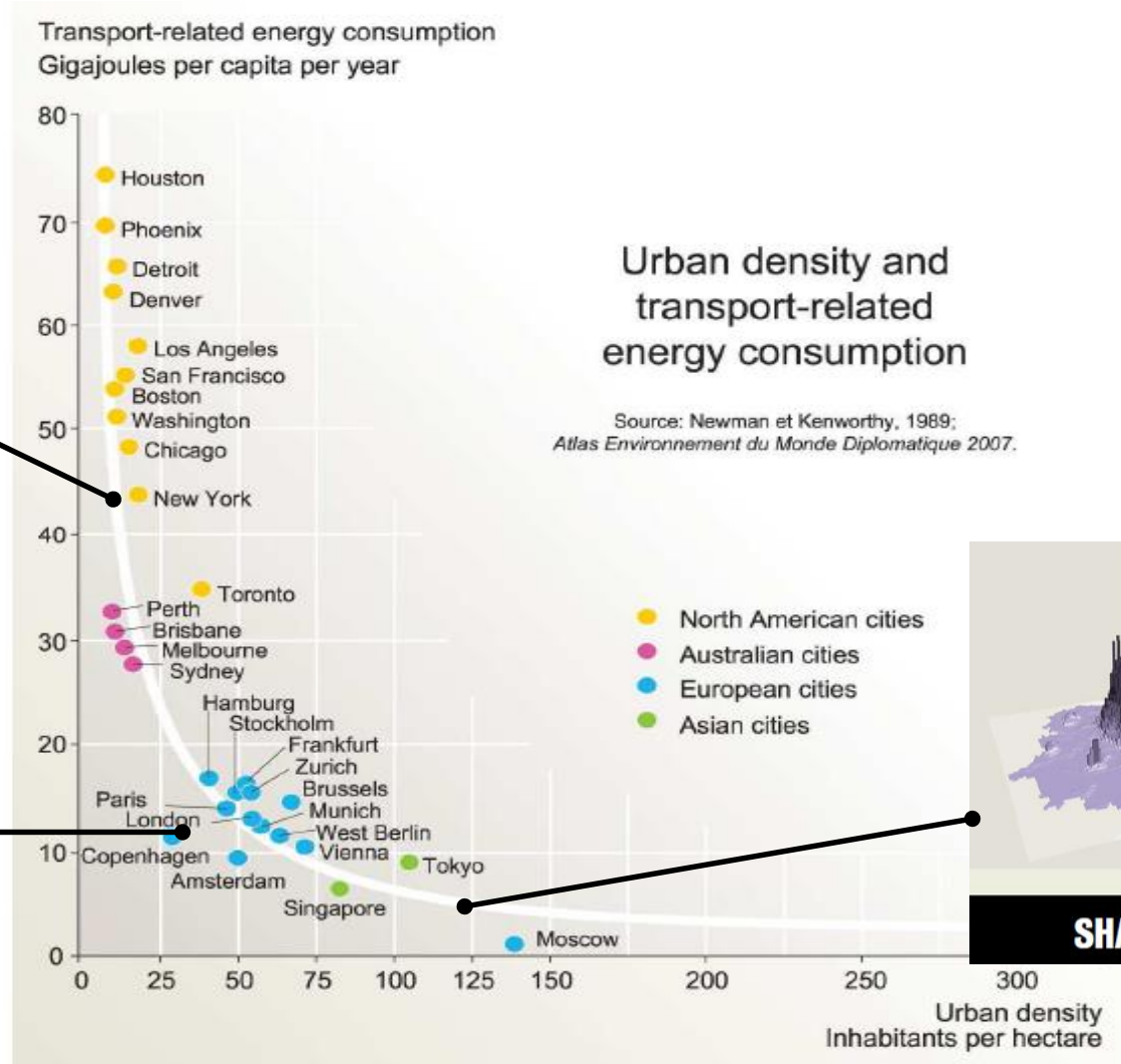
# Urban density and energy consumption



**NEW YORK**



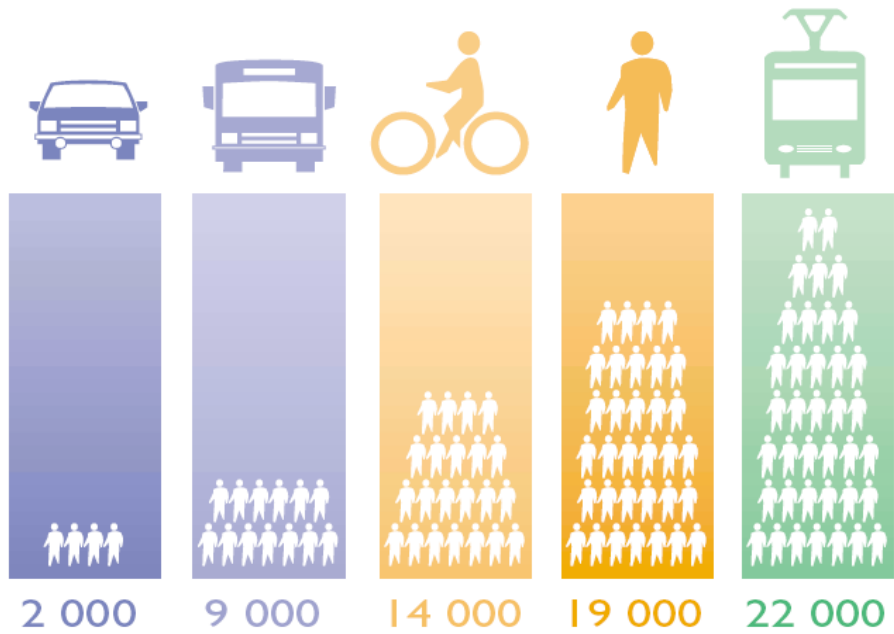
**LONDON**



**SHANGHAI**



# Urban mobility: # of people / m<sup>2</sup> infrastructure





# Attractive and liveable cities are vital cities!



1985



2017





## Conclusion: There is a need for public transport- and bicycle-oriented mobility planning

- The world-wide economy is urbanising
- Mobility in and between city-regions is growing
- Density is most energy-efficient
- Cities must be attractive
- Less room for cars in public space

But how do you do it?

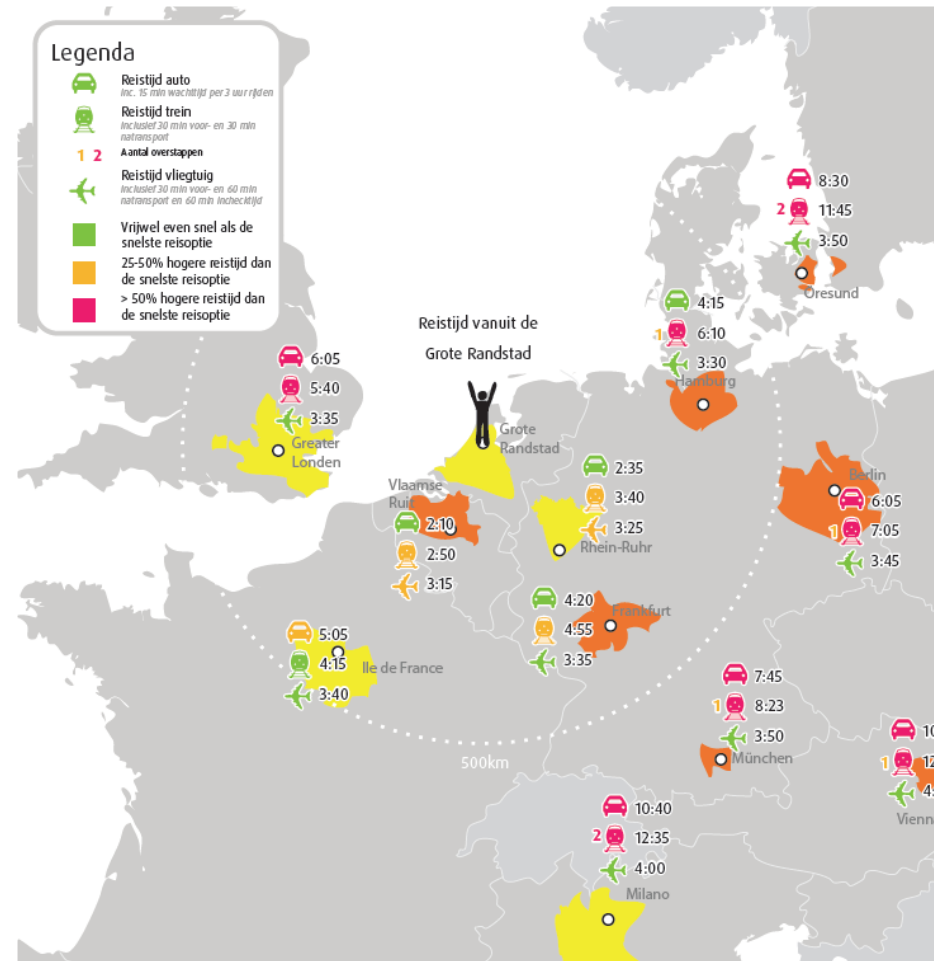
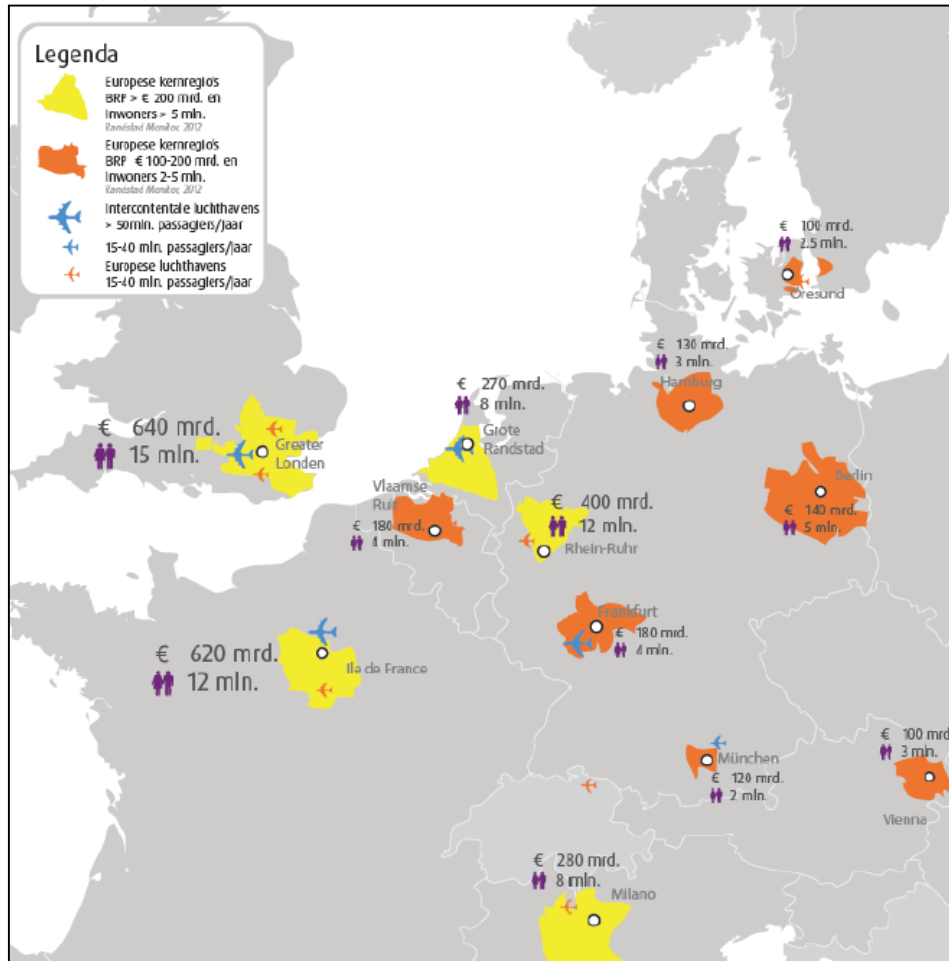




# A coherent system in different scales

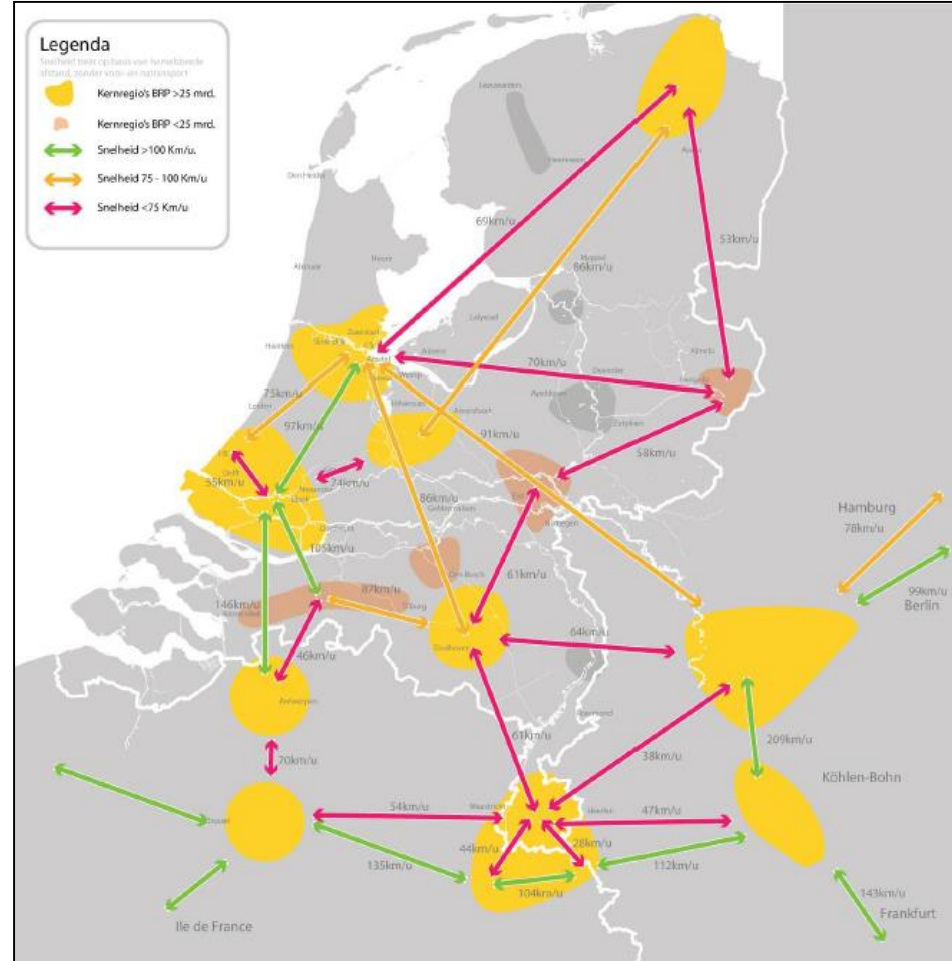
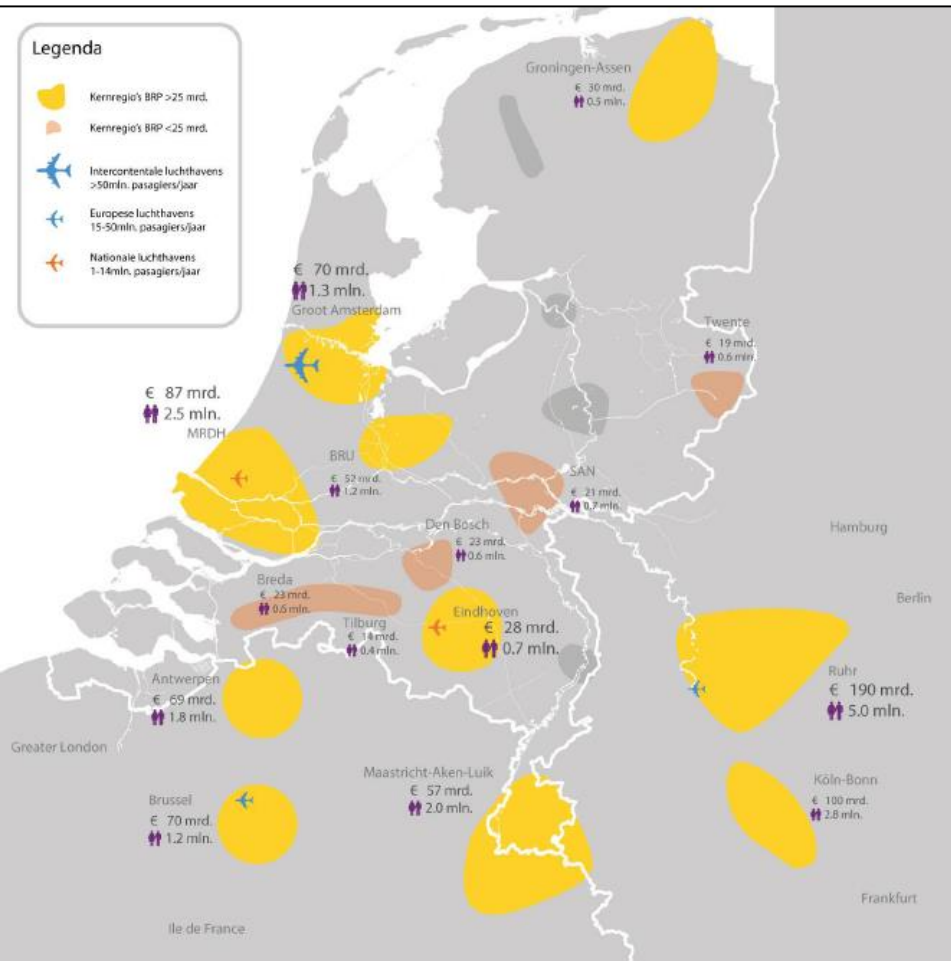
<b>Public transit</b>	<u>Travel distance</u>	<u>Competition</u>	<u>Operational speed</u>	<u>frequency</u>
High-speed	< 500 km	<u>Airplane, Cars</u> <u>Competative</u>	200+	1x per uur
<u>(Inter-) Nationaal</u>	80 -150 km	<u>Equal in speed hart-to-hart</u>	100 -150 km/u	1 a 2x/u
Interregionaal	30- 80 km	<u>Faster in peak hart-to-hart</u>	80 km/u	2 a 4x/u
<u>Metropolitan region</u>	3 - 30 km	<u>Competative incl cycling</u>	40 km/u in <u>regional areas</u> 25 km/h in <u>urban areas</u>	4x in <u>region</u> 8x in <u>urban area</u>
<u>Local</u>	1 – 3 km	- <u>In addition to cycling</u>	<u>Serviceconcepts</u> 20 km/h in <u>rgional area</u> 15 km/h in <u>urban area</u>	<u>On demand</u> 1/2x in <u>region.</u> 2/4x in <u>urban</u>

# The northwest European level: missing links

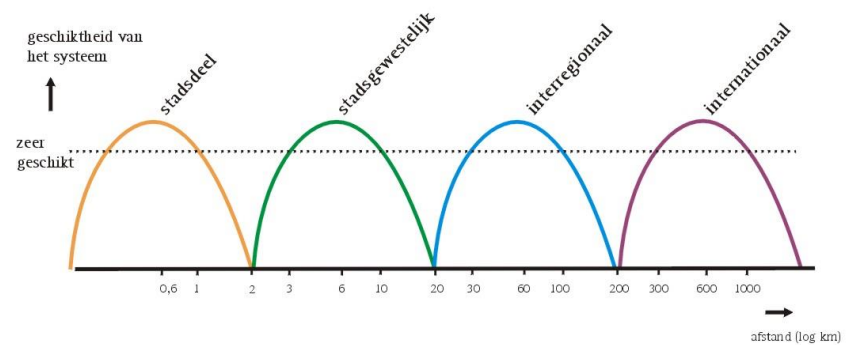
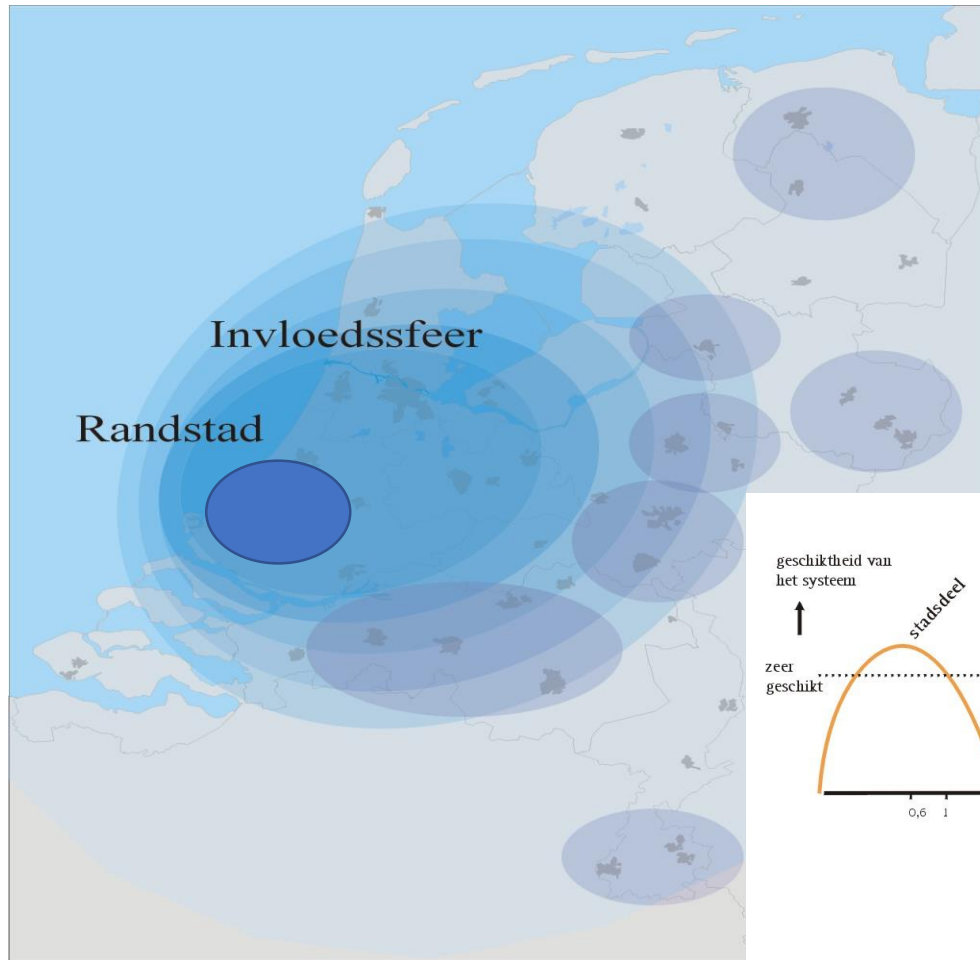




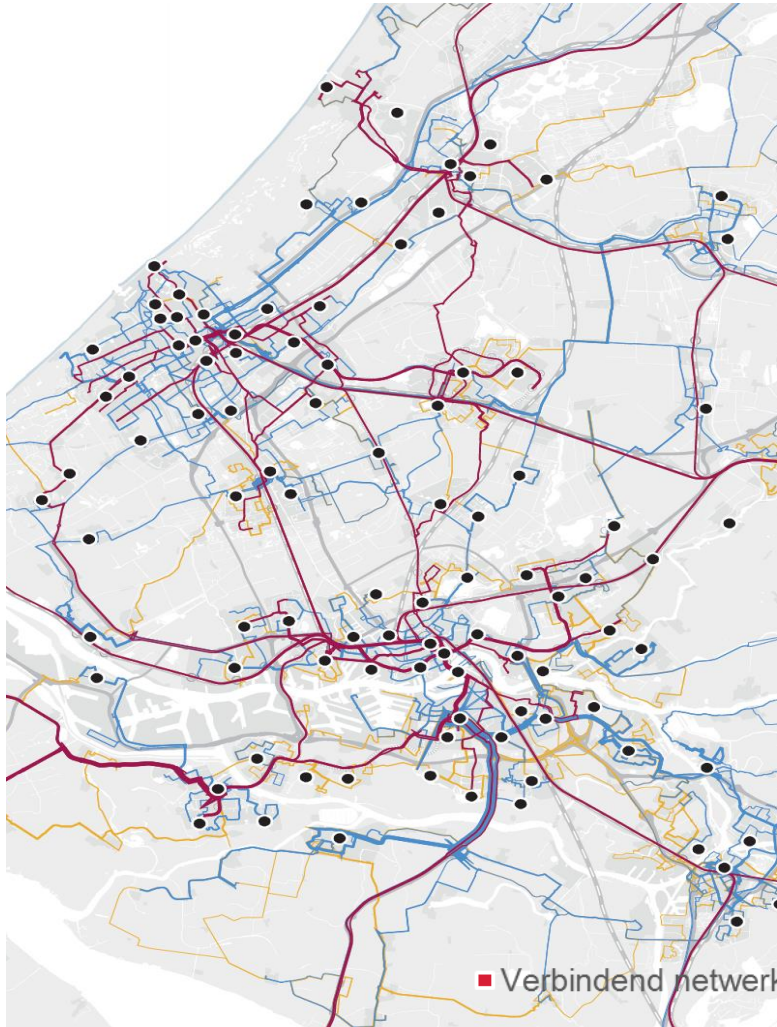
# The Delta-level: slow travel speeds



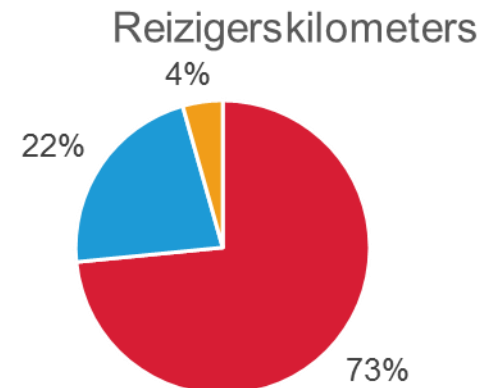
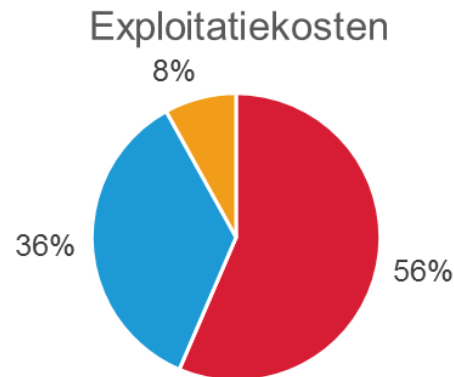
# Daily Urban System: complex interaction of transport levels



# Better performance of metropolitan networks

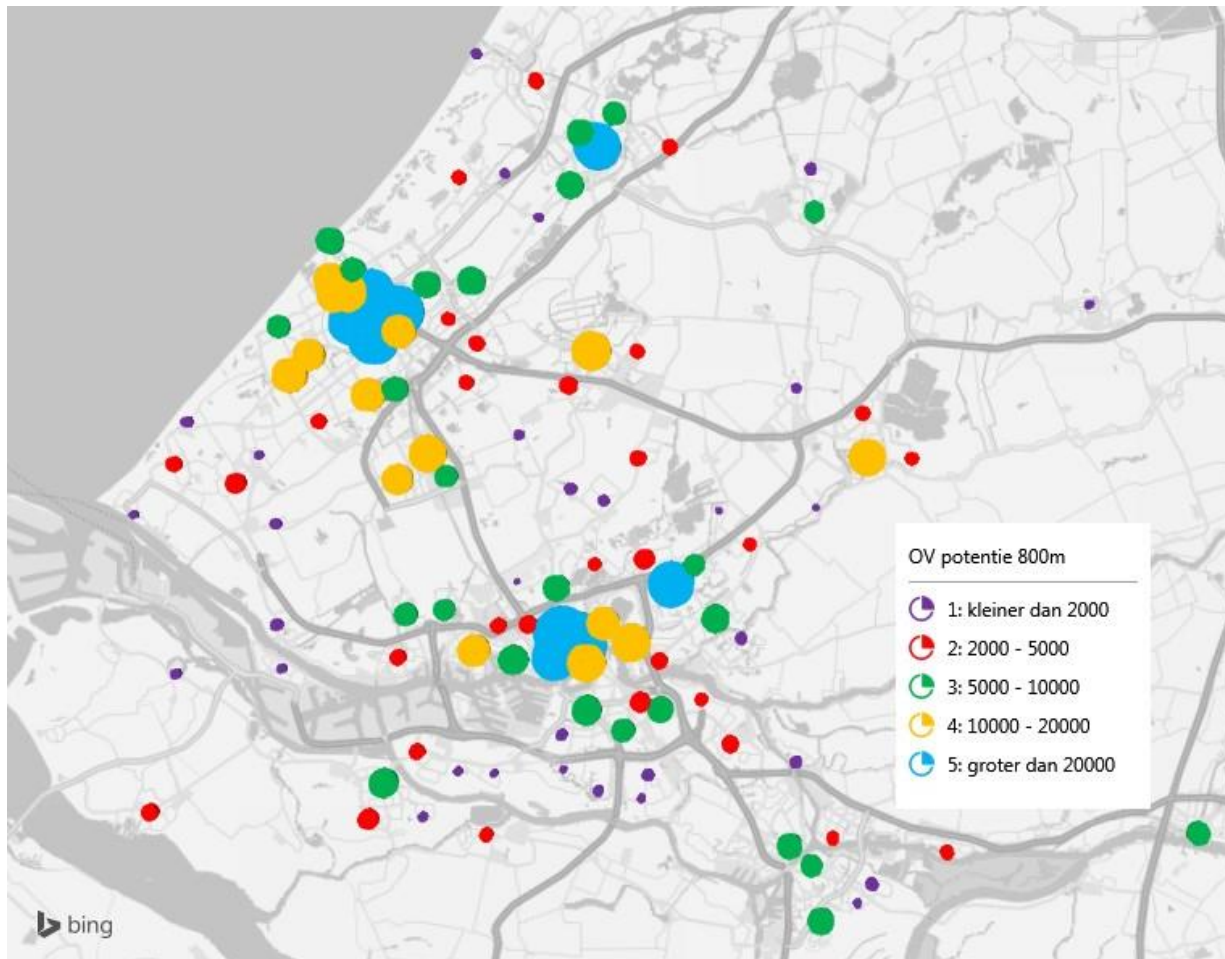


- 2.800 million passengerskilometers/ year
- 350 million passengers/ year
- 880 miljoen euro yearly costs
  - 720 miljoen euro exploitation
  - 160 miljoen euro maintenance



■ Verbindend netwerk ■ Hoogfrequent ontsluitend netwerk ■ Laagfrequent ontsluitend netwerk

# The PT-potential is in metropolitan area's



inhabitants, workers and students in 800 m radius X average PT-use related to urbanisation

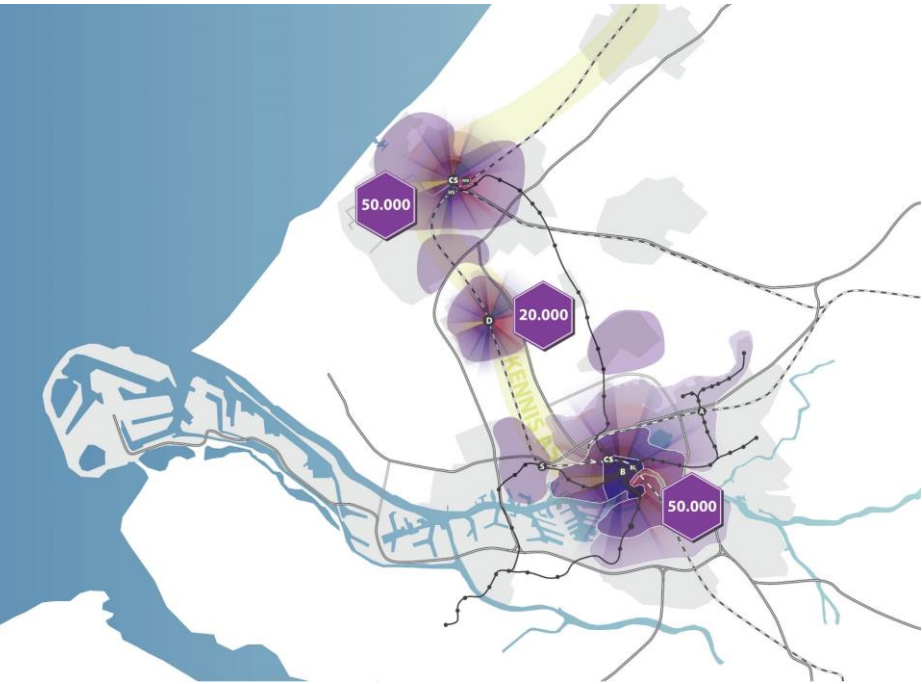


# An integrated proces

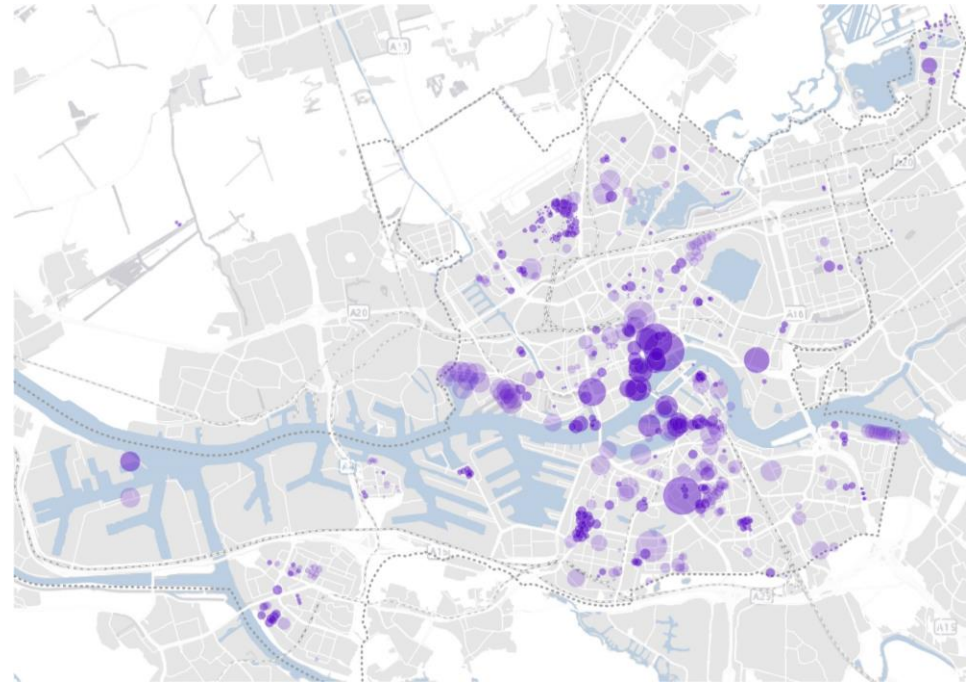




# Urban densification: need for a mobility-change



Regional planning of housing:  
50000 extra in Rotterdam



Local planning of housing:  
Mainly in central areas



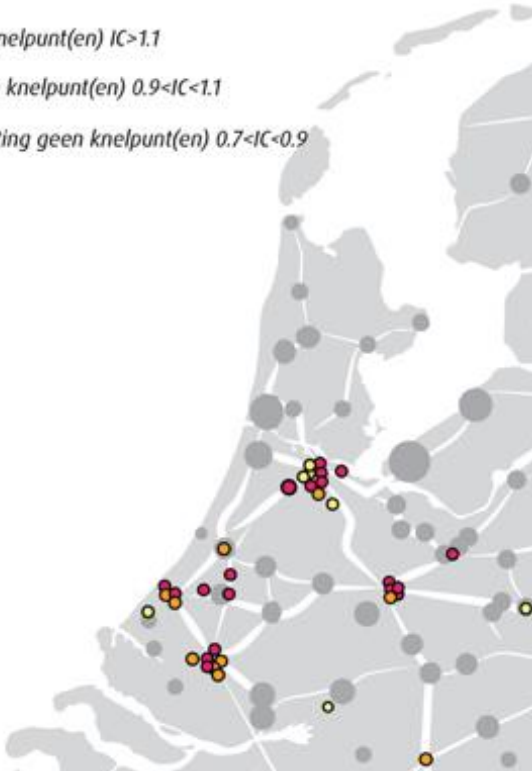


# But metropolitan systems are overcrowded

Hoog

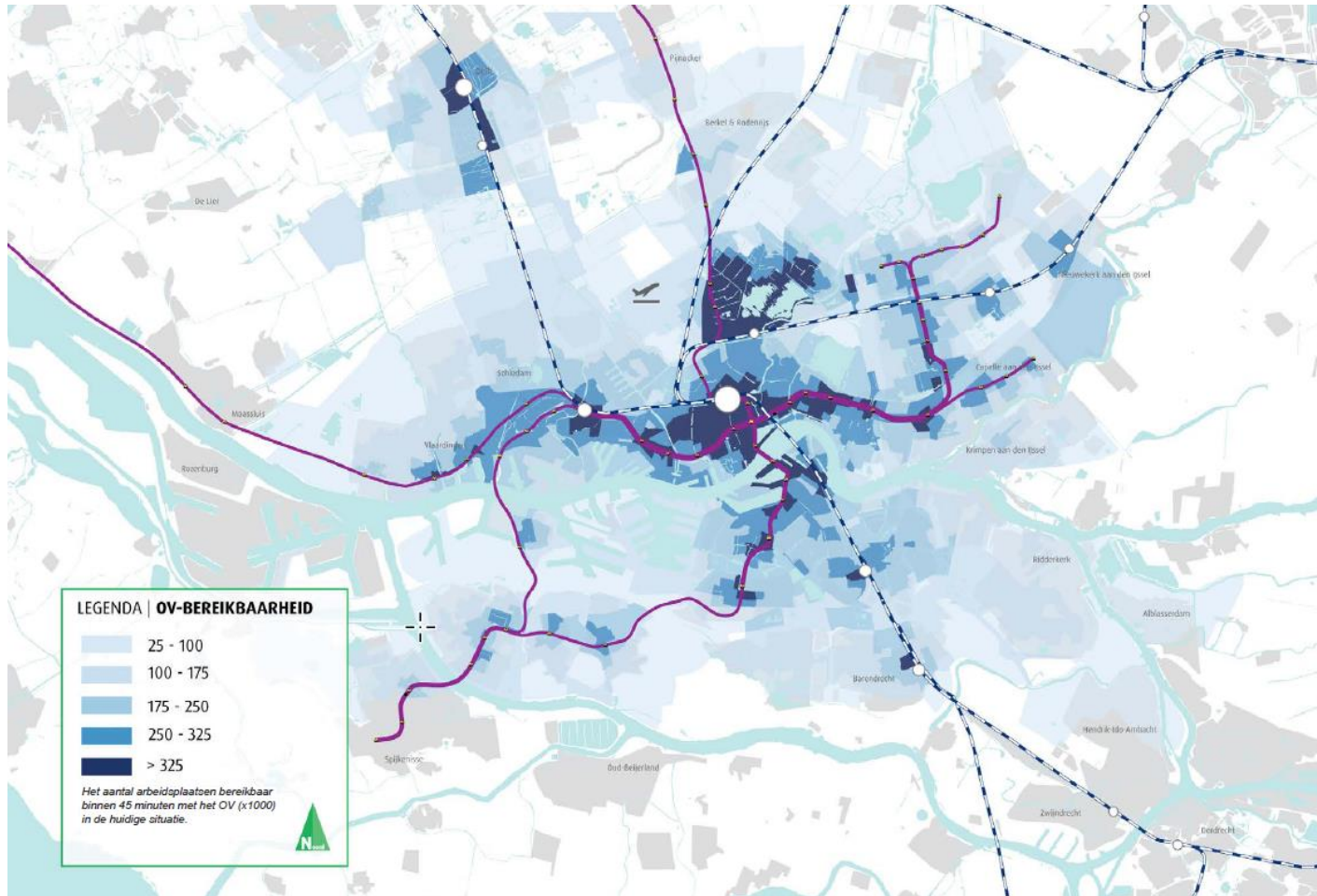
Legenda

- Verwacht(e) knelpunt(en)  $IC > 1.1$
- Potentie(e)l(e) knelpunt(en)  $0.9 < IC < 1.1$
- Naar verwachting geen knelpunt(en)  $0.7 < IC < 0.9$



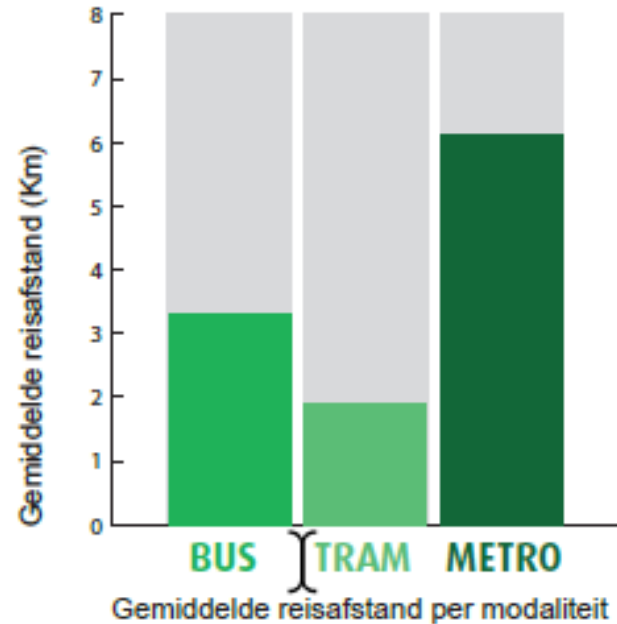
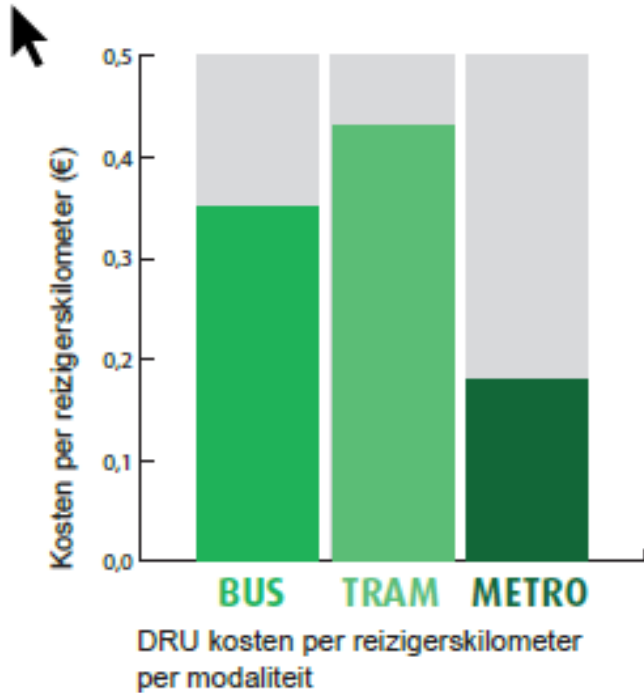


# Job- accesibility for disfavored areas is low





# Financial issues: tramsystem is inefficient





# New forms of transport and services





# 8 Key issues for the city



1. OV en verstedelijking gaan hand in hand



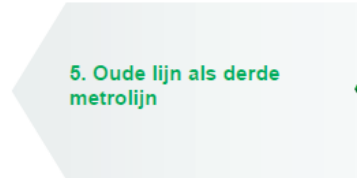
2. Schaa sprong in bereikbaarheid op Zuid



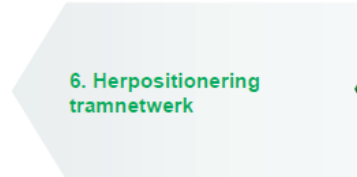
3. Een dragend hoofdnet en transformatie van ontsluitend vervoer



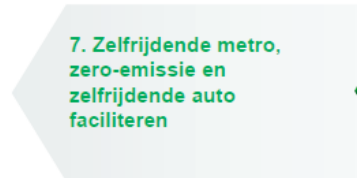
4. Oeververbindingen voor het OV versterken



5. Oude lijn als derde metrolijn



6. Herpositionering tramnetwerk



7. Zelfrijdende metro, zero-emissie en zelfrijdende auto faciliteren



8. Verhogen van de maatschappelijke prestatie



# Three long term perspectives

## I Optimizing

- higher frequencies
- larger vehicles
- better nodes

## II Concentration

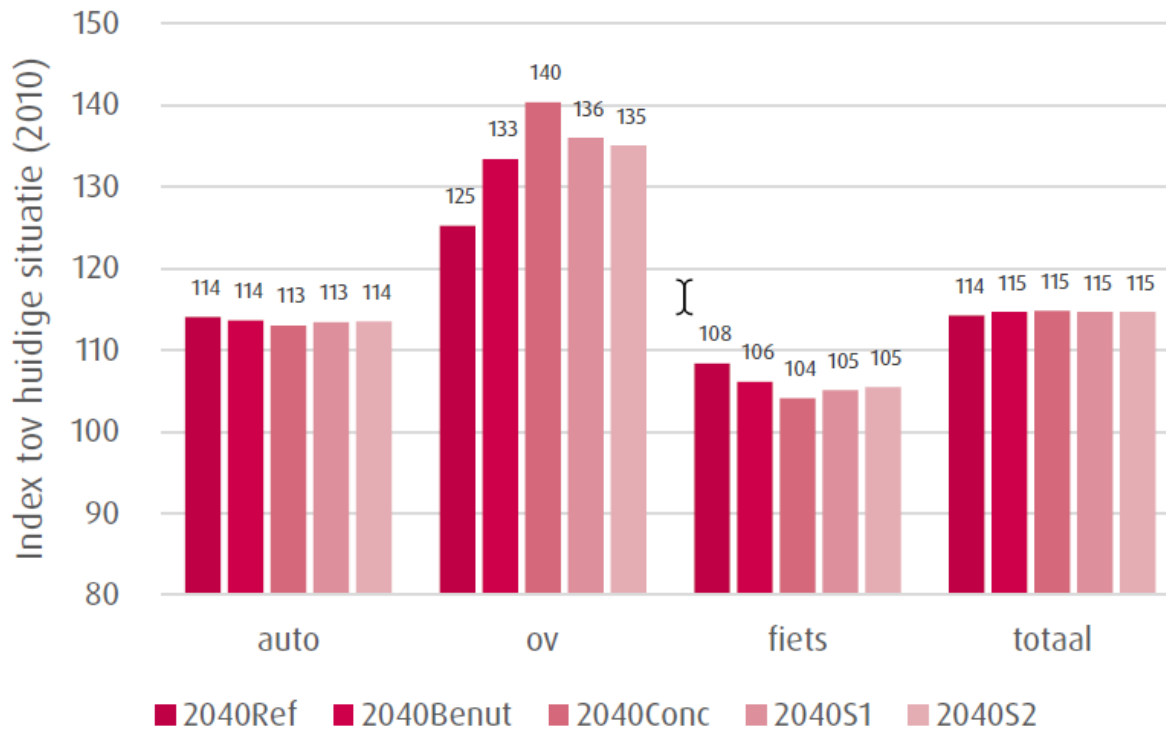
- Rotterdam Central as major hub
- new metrolines, tramways subordinated
- new rivercrossings in the central urban area

## III Dispersion

- Five interregional hubs
- Fast tramlines completing metrolines
- new rivercrossings in the other urban areas



# Number of passenger-trips



Figuur 4.2: Geïndexeerd verschil aantal ritten ten opzichte van de huidige situatie (2010)



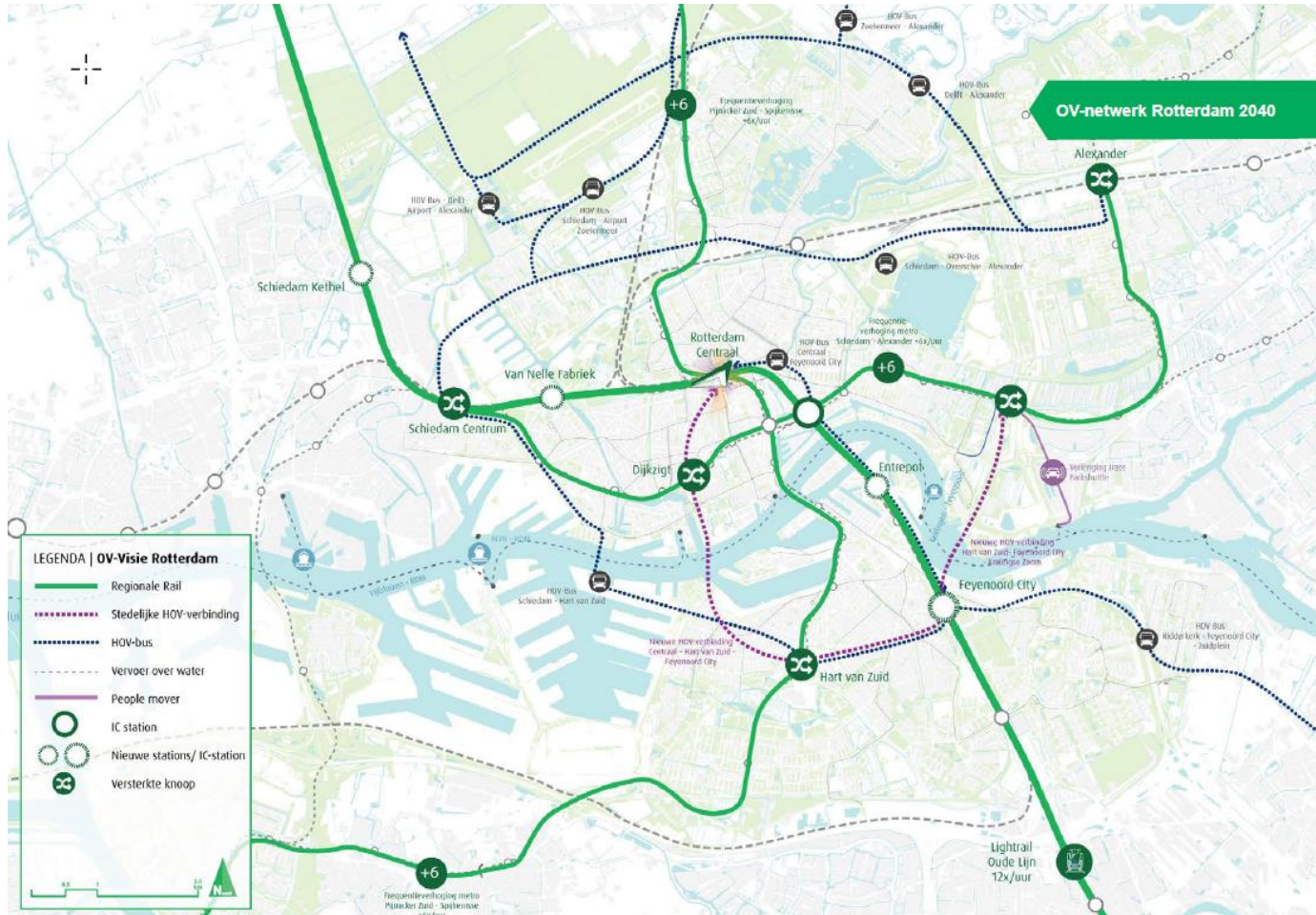
# Accessibility of labor

*tabel 4.12: Toename in het aantal bereikbare arbeidsplaatsen per OV in 45 minuten*

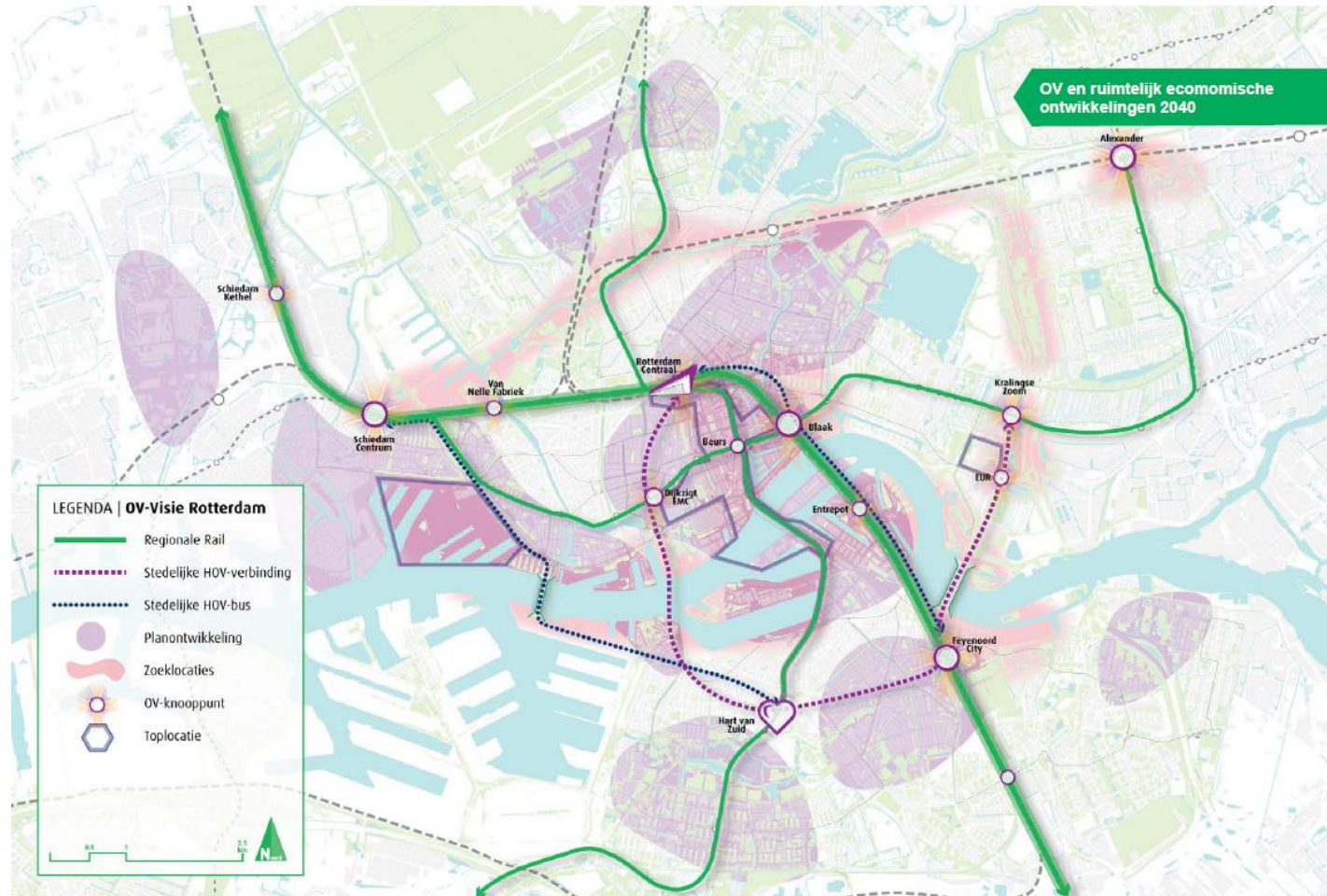
<b>% toename</b>	<b>Aantal arb. Pl.</b>	<b>Tov. 2010</b>	<b>Tov. 2040 Ref</b>
Huidige situatie	607.333	-	-
Referentie	788.318	+30%	-
Benutten	869.438	+41%	+9%
Concentratie	943.027	+55%	+20%
Spreaden 1	879.174	+45%	+12%
Spreaden 2	866.744	+43% ]	+10%



# The PT Masterplan 2040

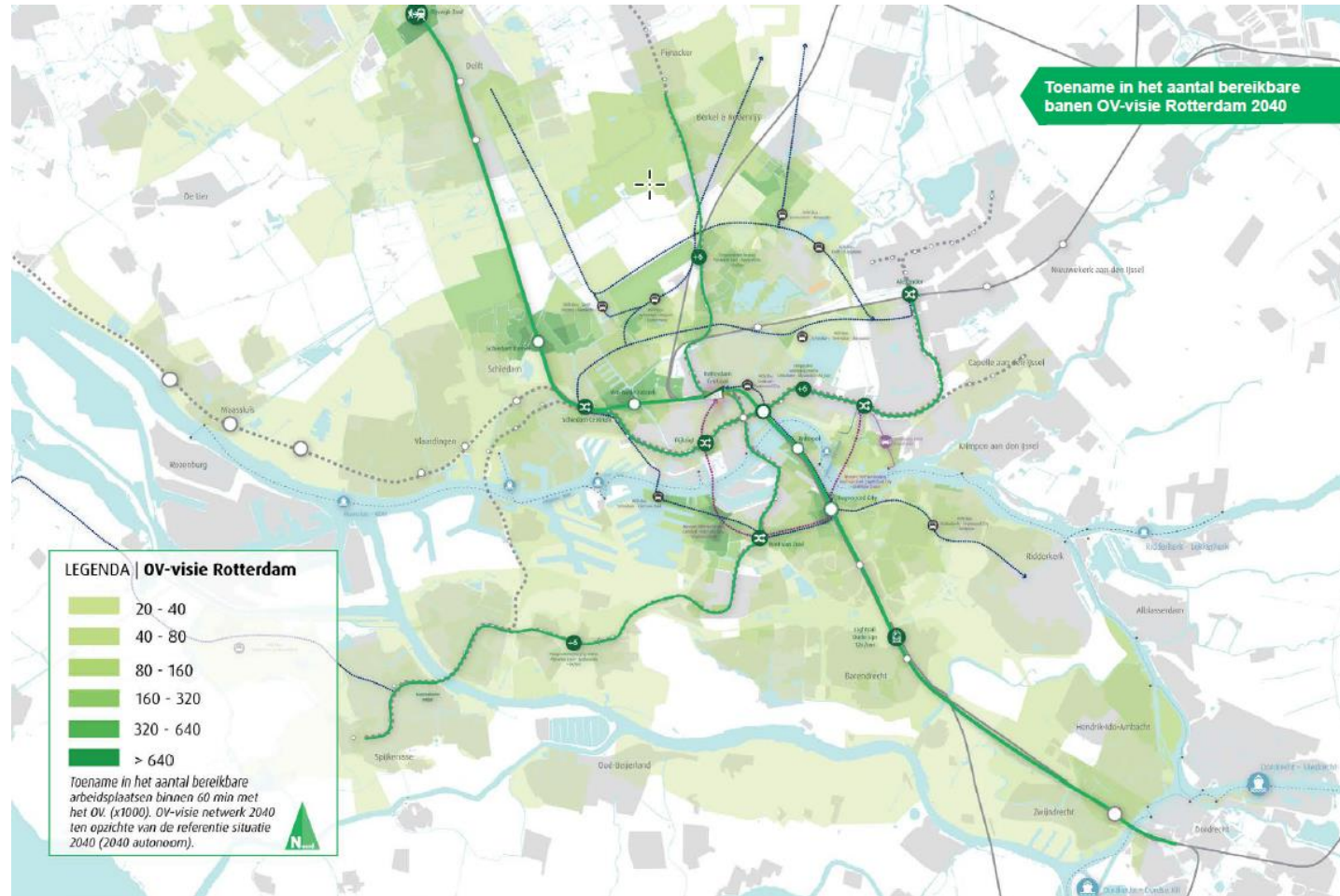


# PT-network in relation to urban development



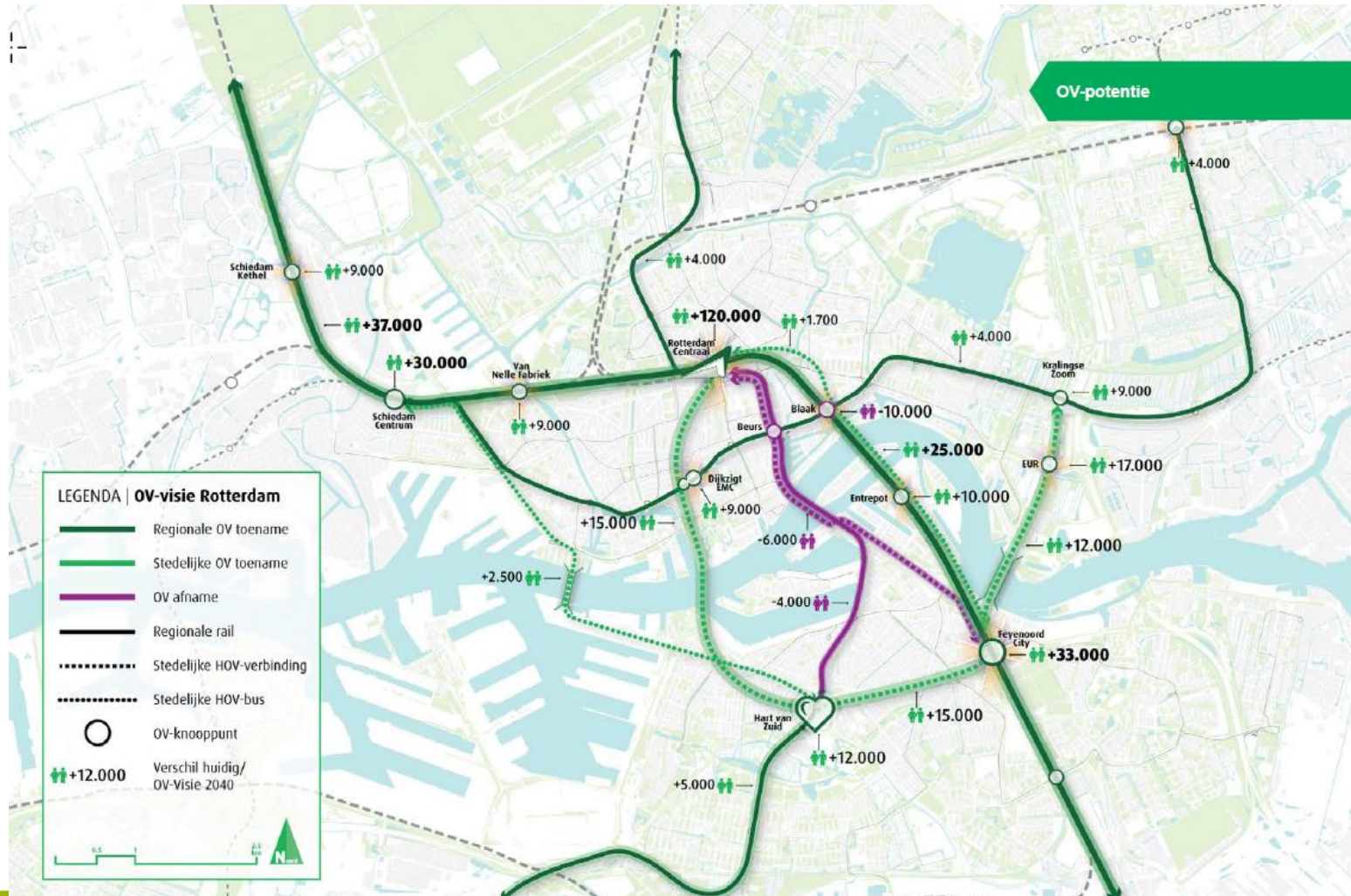


# Growth in job accessibility





# Passenger effects





# New urban development (TOD)





# Road map for every key issue



CAPACITEIT BESTAANDE METRO	01	2018-2022	2023-2029	2030-2040	Na 2040	Kernopgave	Betrokken stakeholders/trajecten
		Pijnacker Zuid-Rotterdam CS (spitsversterking) (N.B. Is referentie)	X				
Maximaal benutten frequenties (keerspoor, beveiligingsmaatregelen) + 6x/u hogere frequentie Rotterdam CS-Spijkenisse en Schiedam-Alexander.			X			1, 3, 8	MRDH, RET
Vervangen metrostellen, automatiseren, windows of opportunity			X	X	X	7, 8	MRDH, RET

BESTAANDE EN NIEUWE OEVERVERBINDINGEN VERSTERKEN	02	2018-2022	2023-2029	2030-2040	Na 2040	Kernopgave	Betrokken stakeholders/trajecten
		HOV-bus Willemsbrug	X				
HOV-bus Maastunnel	X					2, 3, 4	MRDH, RET
Uitbreiding netwerk personenvervoer over water	X		X			2, 3	MRDH, PZH, HbR, Drechtsteden en vervoerders. Uitwerking in de bestaande werkgroep PoW
Nieuwe tramverbinding Hart van Zuid-Feyenoord City ('Coen Mou-lijn')			X			1, 2, 3, 6	MRDH, RET
Nieuwe Oostelijke oeververbinding + HOV-rail Hart van Zuid-Feyenoord City-Kralingse Zoom			X			1, 2, 3, 4, 6	Rijk, reglopartijen, RET. Uitwerking in MIRT gebiedsverkenning oeververbindingen Rotterdam
HOV-verbinding Maastunnel (Hart van Zuid-CS): uitwerken railpotentie				X		2, 3, 4, 6	Rijk, reglopartijen, RET. Uitwerking in MIRT gebiedsverkenning oeververbindingen Rotterdam
Nieuwe Westelijke oeververbinding + HOV-bus Hart van Zuid-M4H-Schiedam				X		1, 2, 3, 4	Rijk, reglopartijen, RET. Uitwerking in MIRT gebiedsverkenning oeververbindingen Rotterdam
Koppeling corridor Goudse Lijn met Maastunnelcorridor					X	2, 3, 4, 6	Rijk, NS, ProRail, reglopartijen, RET. Uitwerking in Toekomstbeeld OV



Bas Govers

[bgovers@excellent-cities.com](mailto:bgovers@excellent-cities.com)

Martin Guit

[ml.guit@rotterdam.nl](mailto:ml.guit@rotterdam.nl)