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**Velkommen
til Den Haag**



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Regional and Urban Public Transport

ir. Jan Termorshuizen
21 september 2015



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HOLLAND





Light Rail



Cycling



Regional and Urban Public Transport

- Public transport planning ⇔ Urban and regional planning
- Some examples
- RandstadRail
- New railway stations

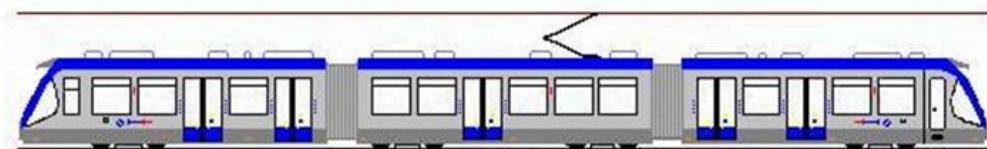




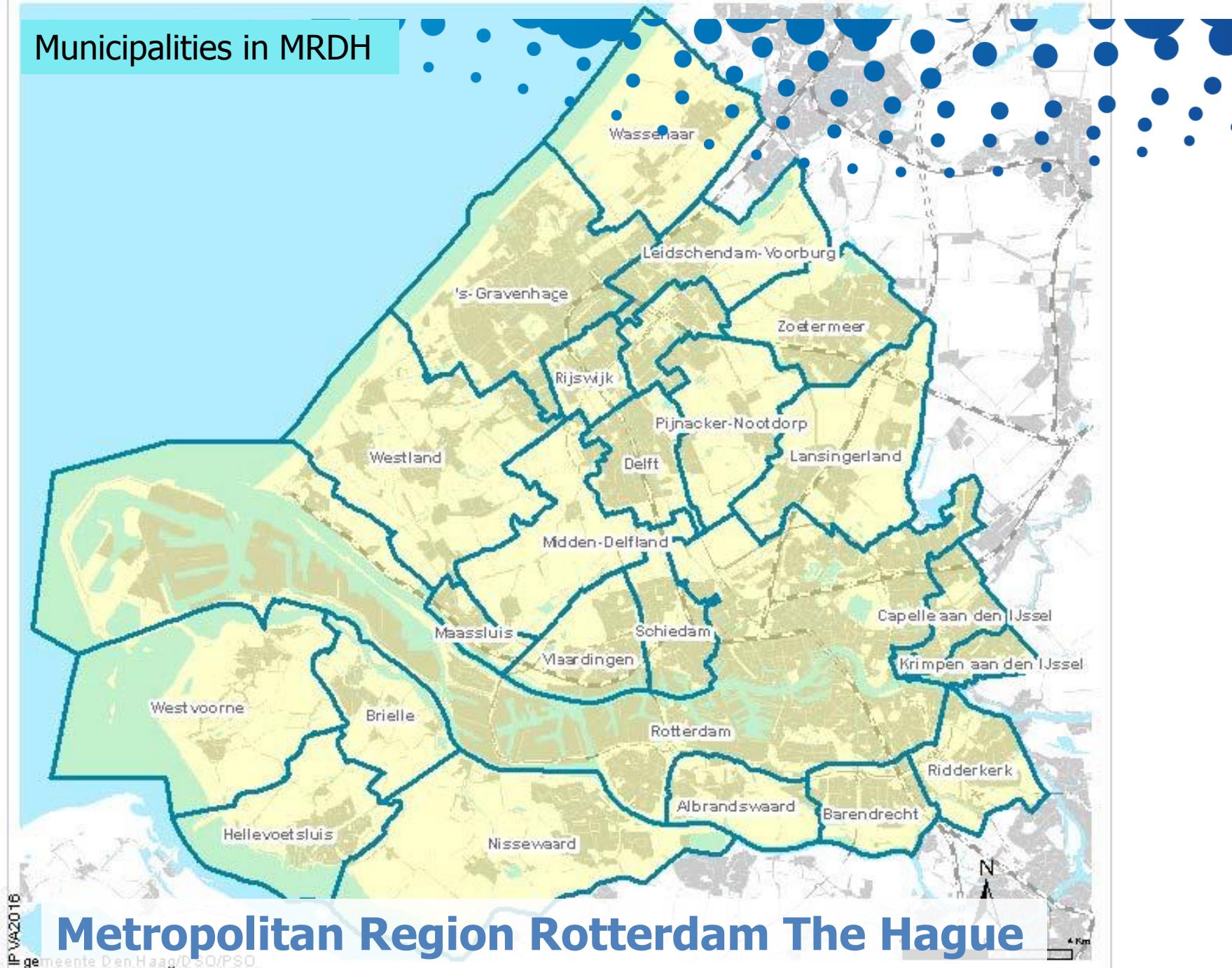
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- 2015 – now senior expert public transport MRDH
- 1995 – 2014 senior expert public transport The Hague Region
- 1981 – 1995 traffic planner City of The Hague
- 1977 – 1980 traffic planner Ministry of Transport
- 1976 Civil Engineer (MSc) Technical University Delft



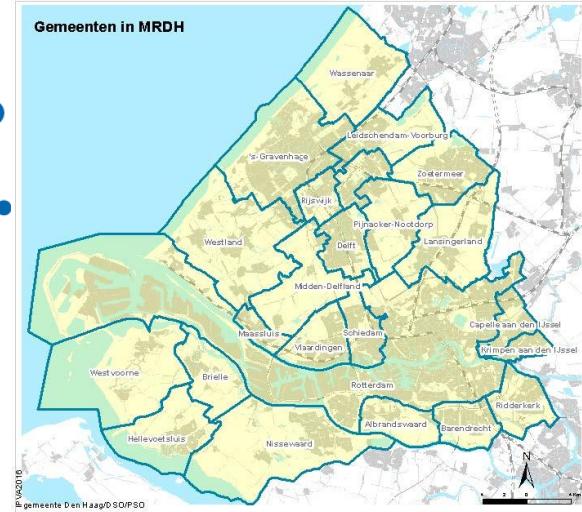
Municipalities in MRDH



Some statistics

Metropolitan Region Rotterdam The Hague

Surface	990 km ²
Municipalities	23
Inhabitants	2.260.000
Residences	1.000.000
Employment	1.000.000
% of Dutch GNP	26





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Transport Authority

All traffic modes

- Tendering concessions
- Regional networks
- Subsidies



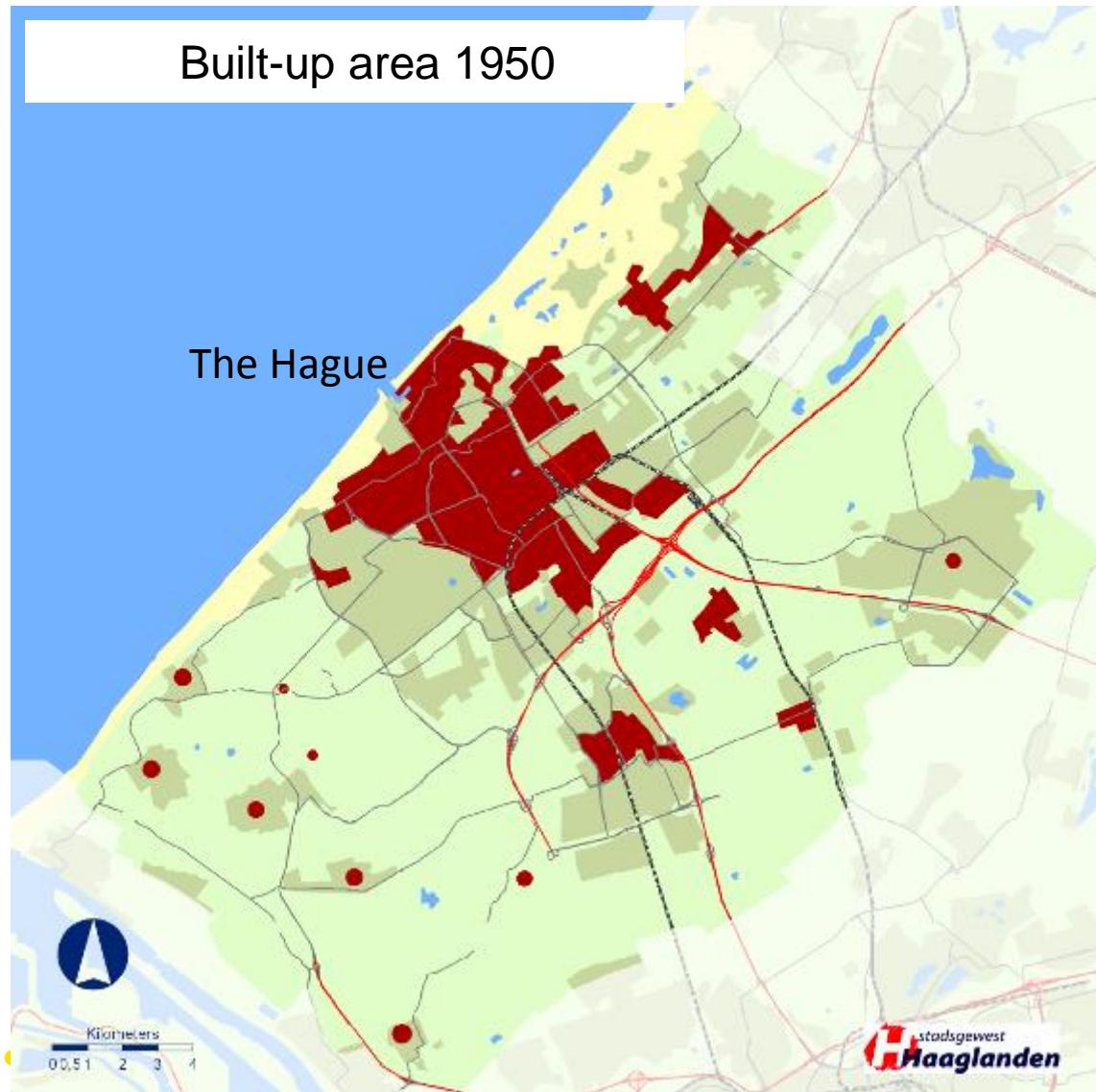
Short history of planning in The Netherlands

- Central planning in the 50's
- Decentralisation in the 90's
- From 'plan' to 'vision'
- Environmental issues vs. the economy
- Car ownership and use vs. bicycles and public transport

Urban growth

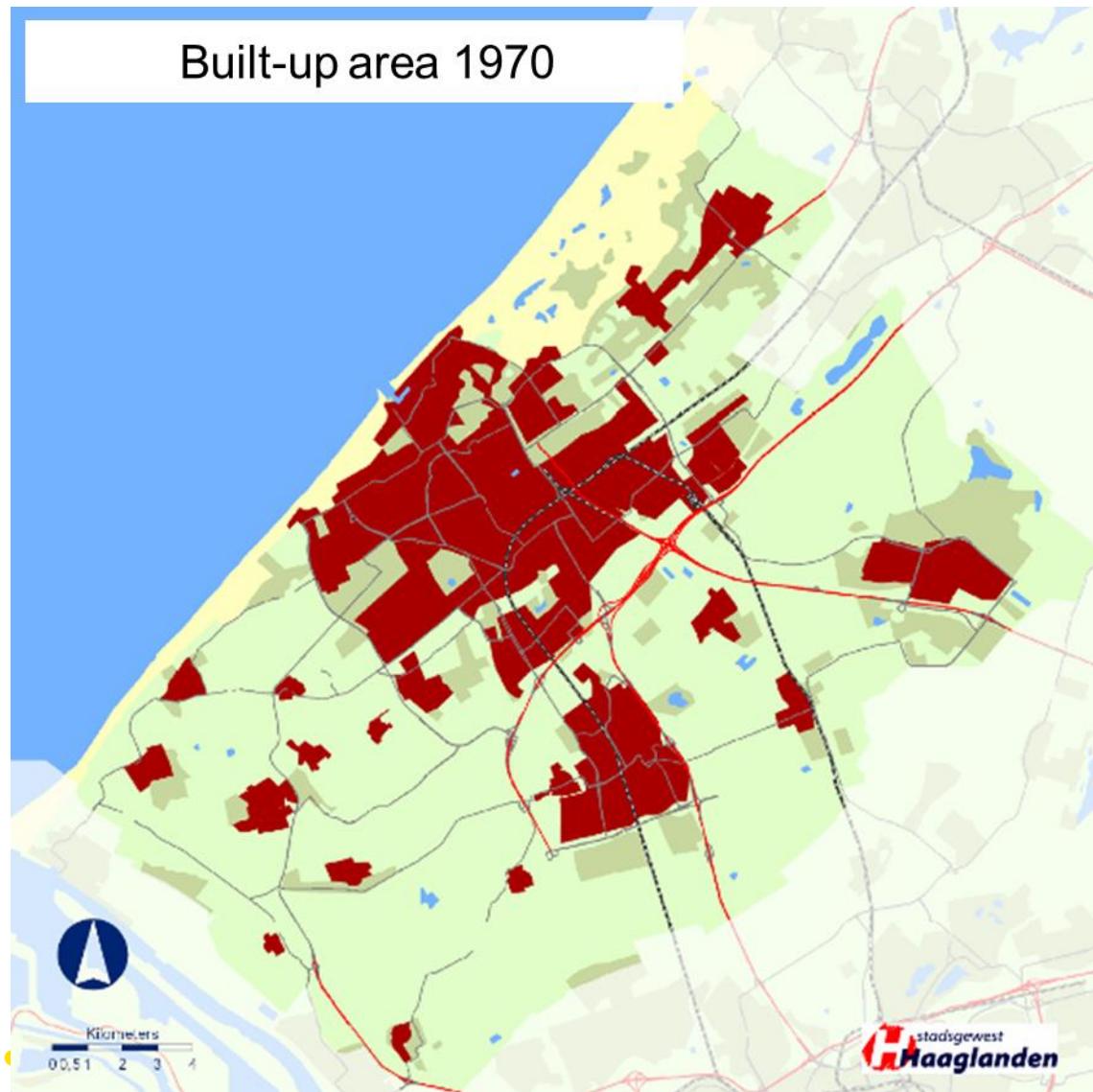
Decreasing
household size,
effects of WW2:
new houses
necessary

Built-up area 1950



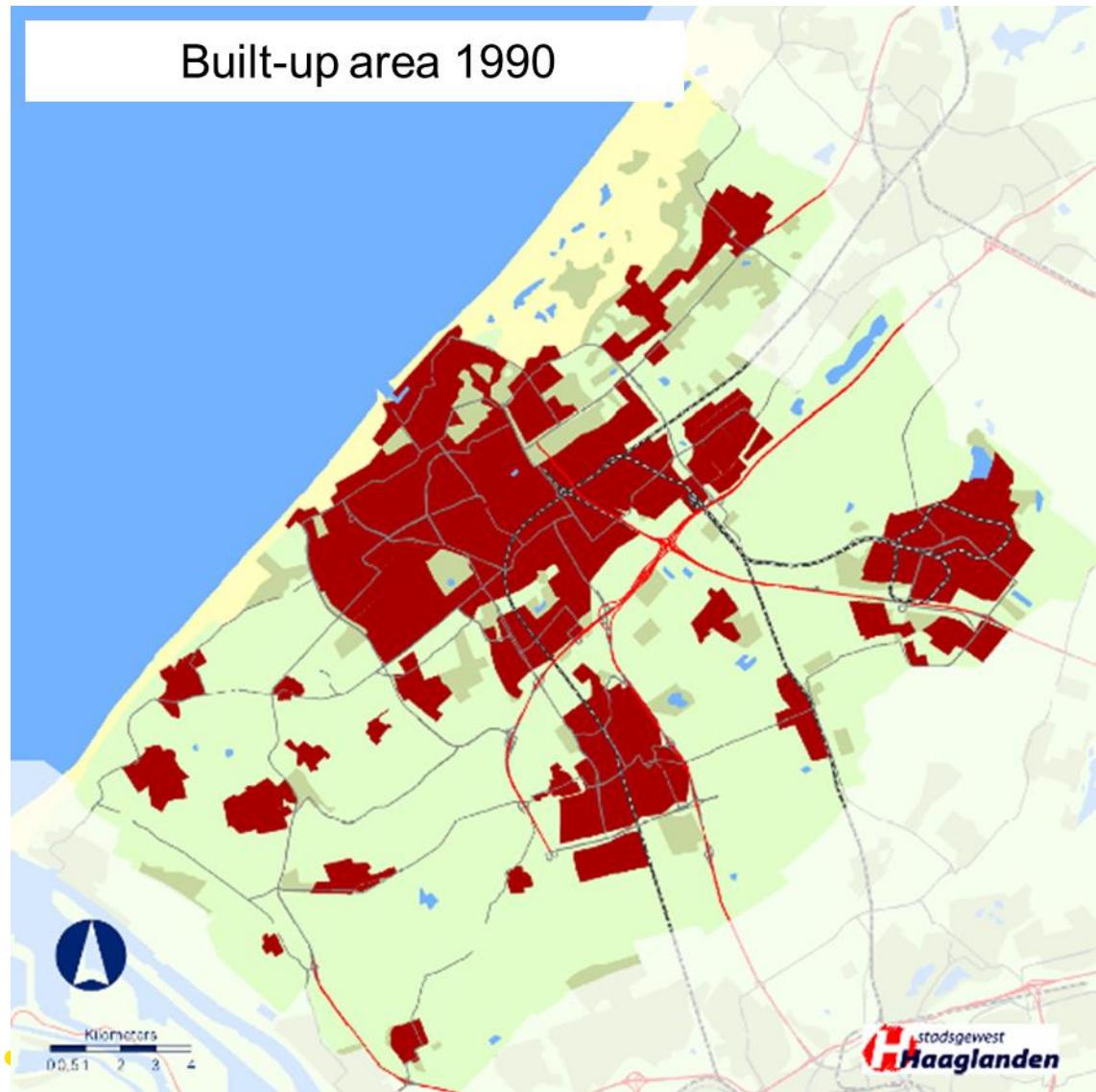
'New towns'
concept
introduced

Built-up area 1970



- Growth of car traffic
- Relation urban development and public transport
- Environmental issues

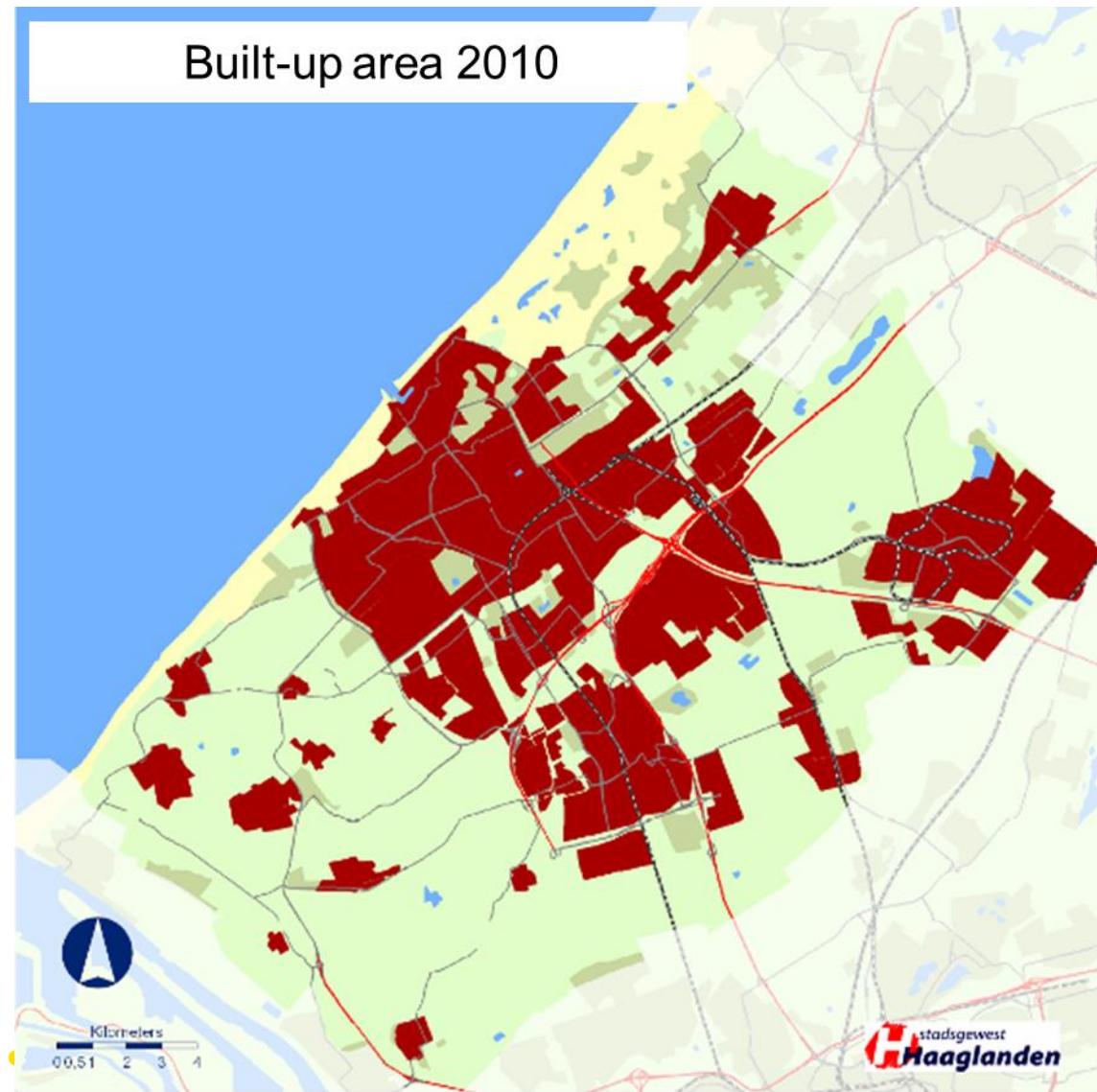
Built-up area 1990





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- New dwellings near city, easily connected by extension of existing lines
- Higher quality public transport

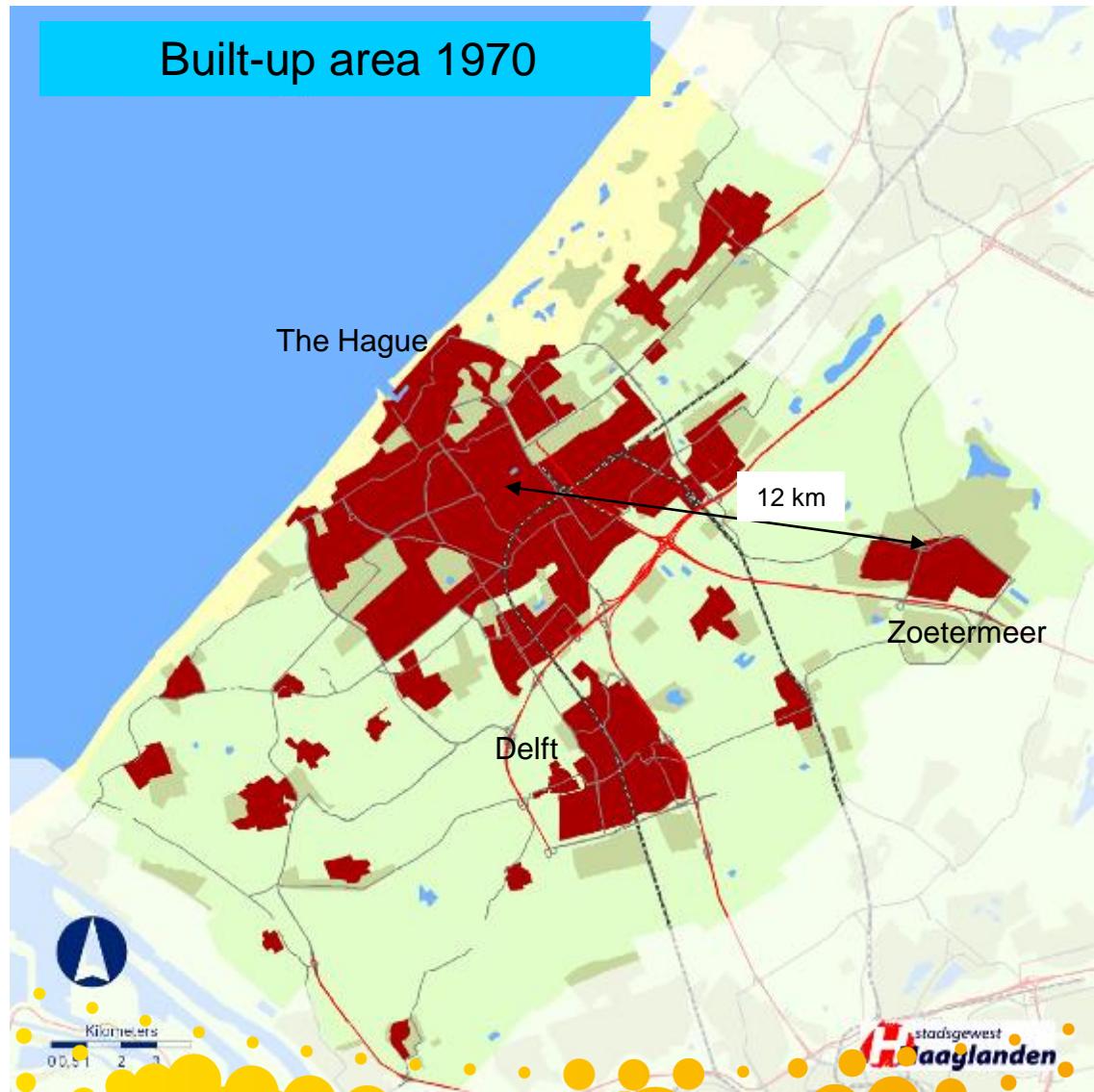


Transport policy: Not so good example (1)

Case:

Zoetermeer
New town (1965)

- Distance to
The Hague: 12 km
- New train
connection built



Transport policy: Not so good example (2)

Problems:

- Not all inhabitants work in The Hague
- Train only connects with The Hague Central Station, so many people go by car to other parts of the city
- Too far for cycling for most people

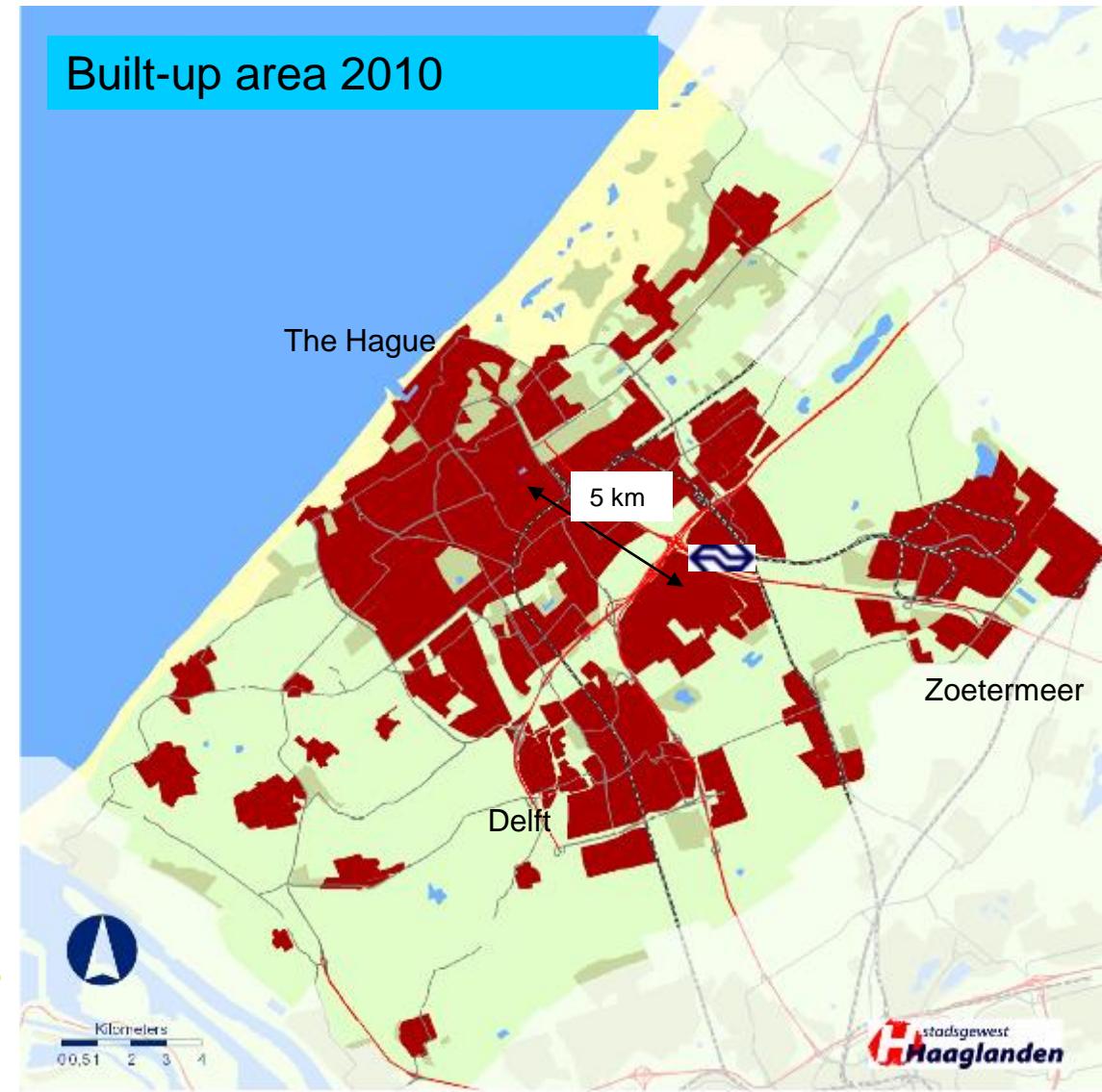
Transport policy: Better example

Case:

Ypenburg (1995)

Former airforce base

- Distance to The Hague: 5 km
- Existing tram system extended, new railway station on line to Utrecht



Transport policy: Comparing examples

Distance to The Hague:
Ypenburg closer than Zoetermeer, so more people
work in The Hague

Shorter trips (5 km instead of 12), cycling

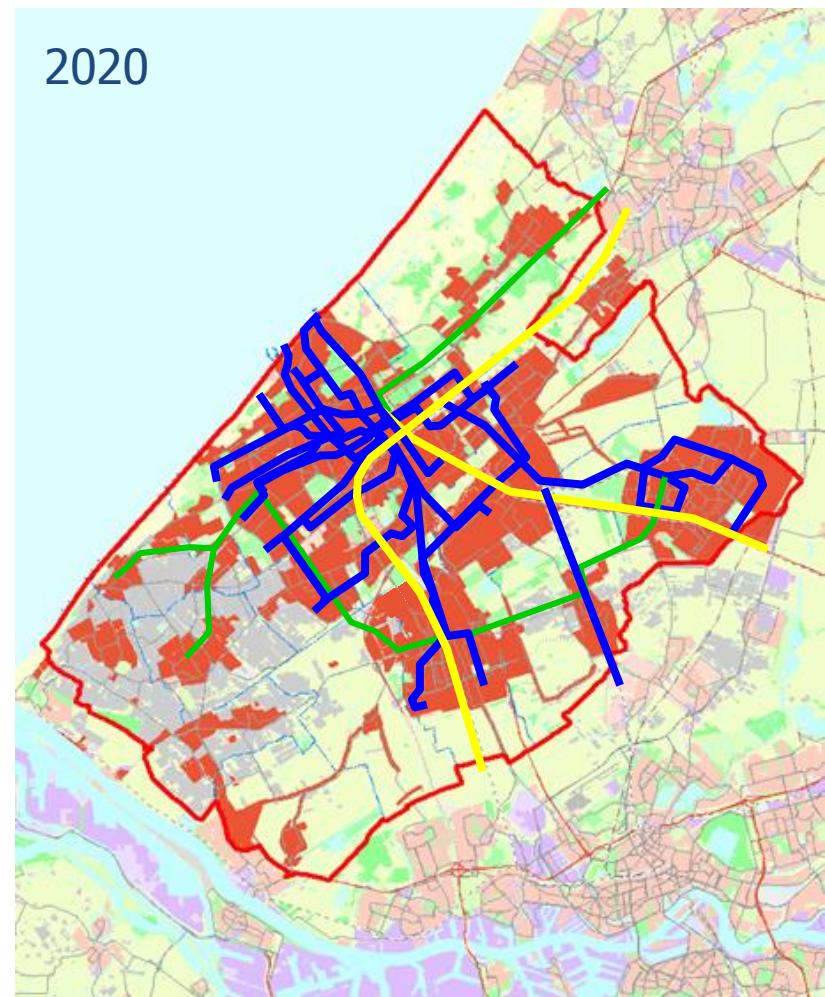
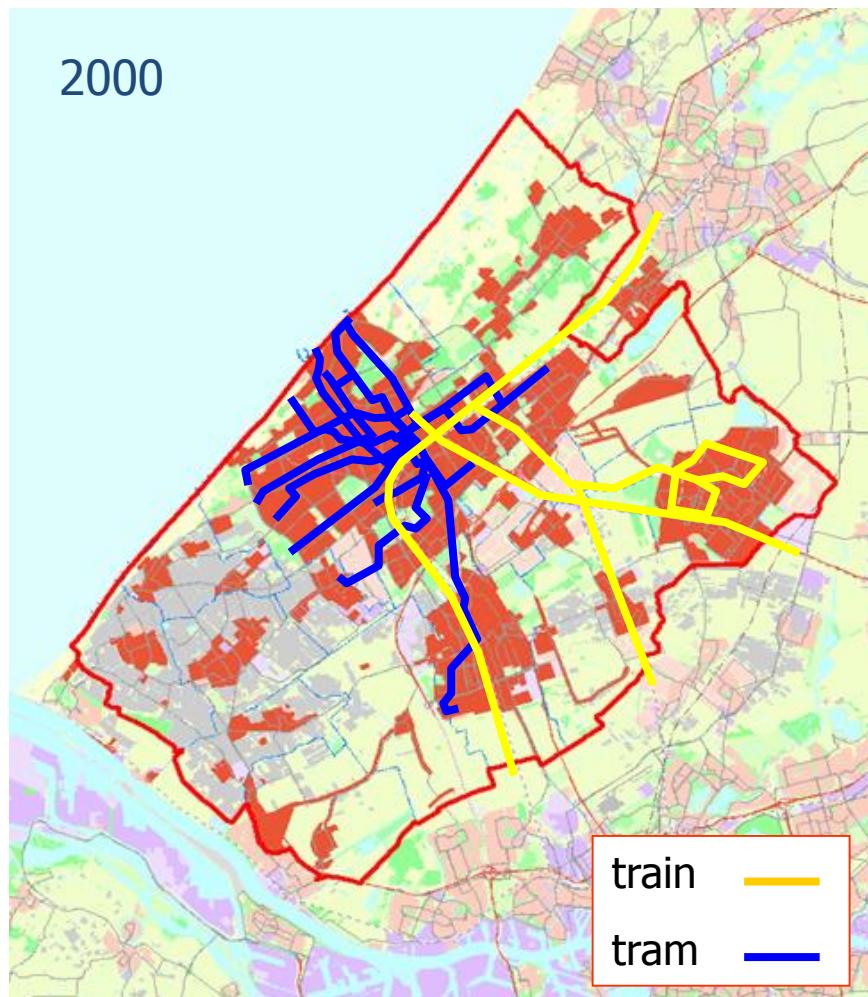
More opportunities for public transport because more
lines are available

(We offset part of the problems by changing the train
to Zoetermeer into a light rail system)

Transport policy

- Physical planning influences traffic
- Traffic influences physical planning
- Accessibility is an important issue in developing networks and location of functions
- Only integrated planning gives good results
- Policy today: TOD; use existing opportunities

Regionalisation of public transport





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Public transport gives opportunities for growth

- Accessibility is required for economic growth
- Roads have insufficient capacity
- Cities have no space to build roads everywhere
- Environmental problems limit growth of traffic
- Public transport offers more capacity per lane



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Transport Oriented Development (TOD)

- Use the opportunities of public transport when planning urban and regional development
- Development near railways brings more passengers
- More passengers require higher frequencies
- This makes the area near stations more attractive for development
- Etc.



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Functions of rail system

- Long distance Intercity (NS)
- Regional Sprinter (NS)
 metro, light rail, tram
(tendered by Metropolitan Region)

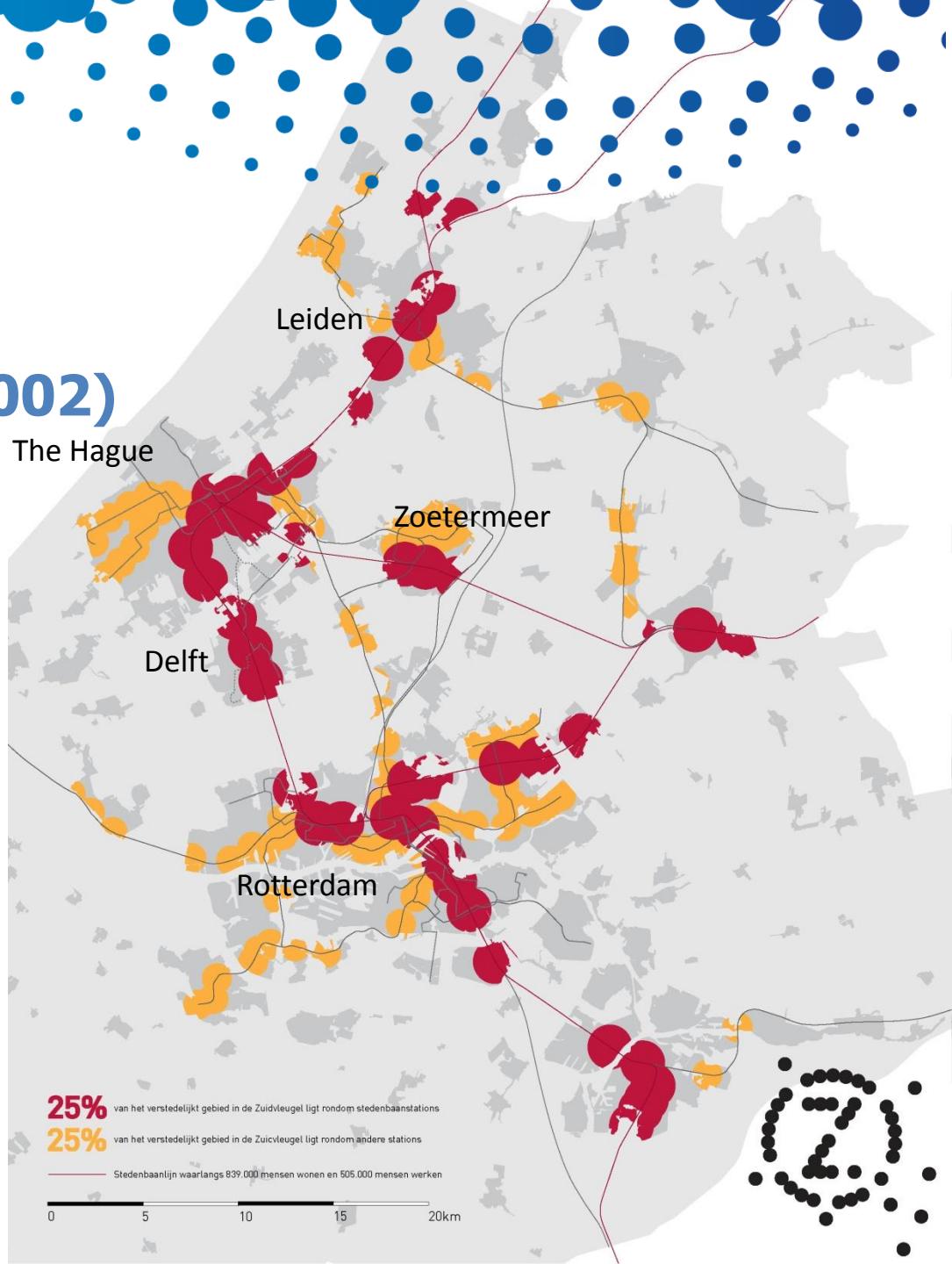


Rail systems are connected at stations
These are nodes for urban development too



Stedenbaan (since 2002)

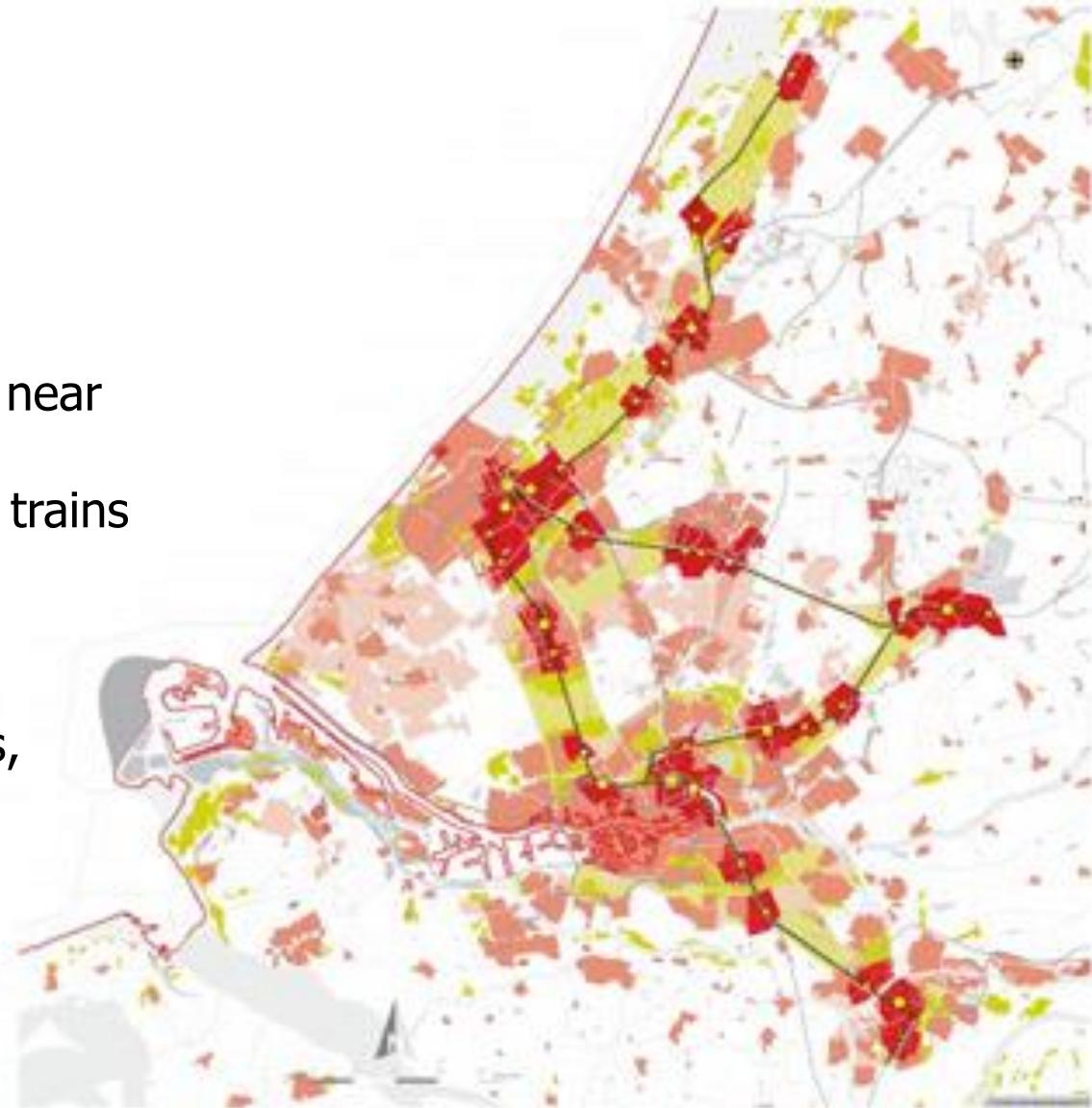
- Sprinters on main railway lines
- Metro and light rail in agglomerations
- Development of districts around stations
- Bicycle road development to and from railway stations
- Park&Ride



Dual goal

- Urban development near stations
- Higher frequency of trains up to 6/h

Cooperation between province, regions, cities, railway company





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Station Den Haag Ypenburg

- Urban development
- Tram stop at 50m from station
- Bicycle parking enlarged
- Park-and-Ride facilities





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Station Rotterdam Alexander

- Intercity and Sprinter
- Metro
- Large regional shopping center
- Schools
- Offices
- Park-and-Ride facilities





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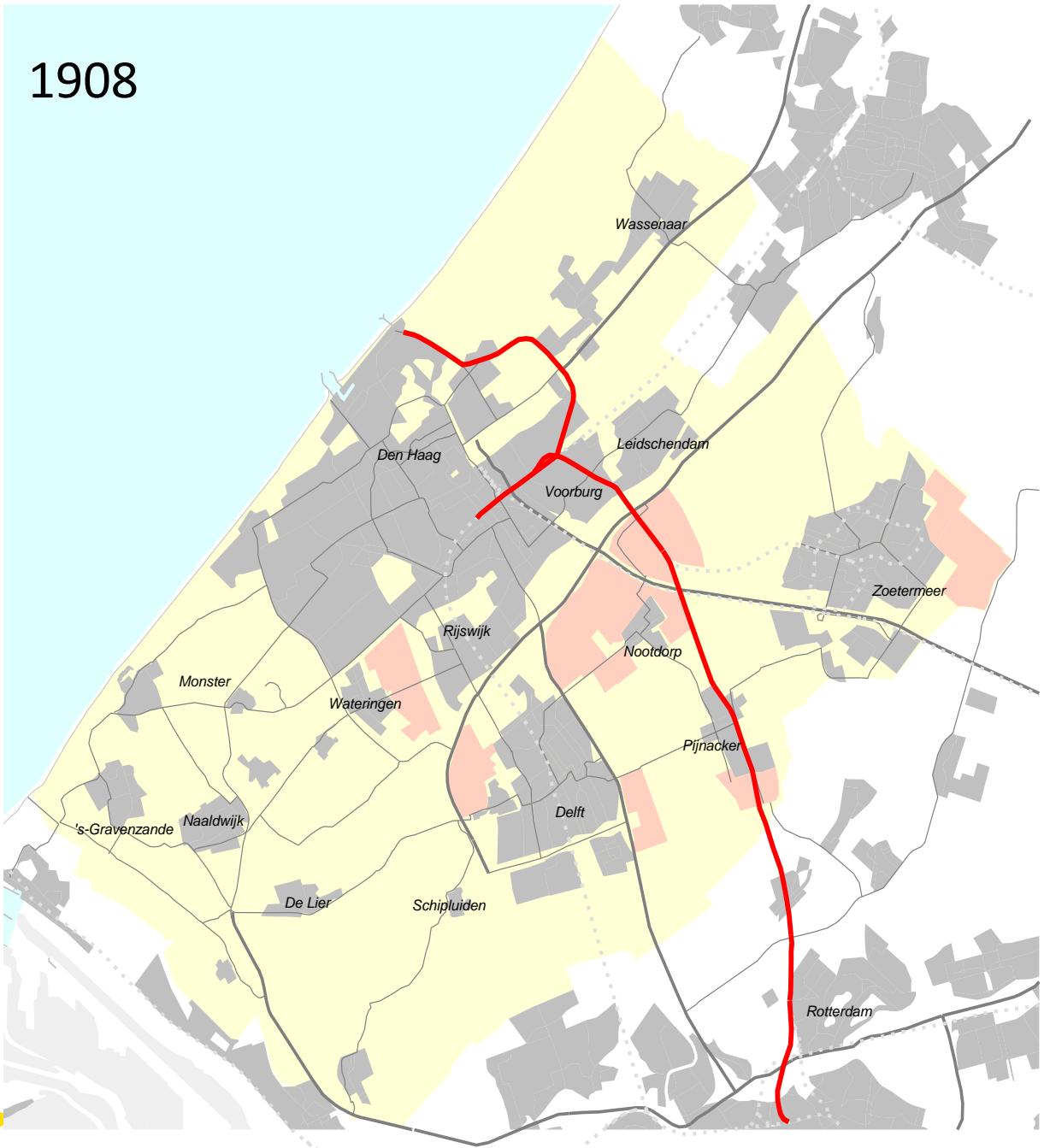
RandstadRail 1987 - now





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1908





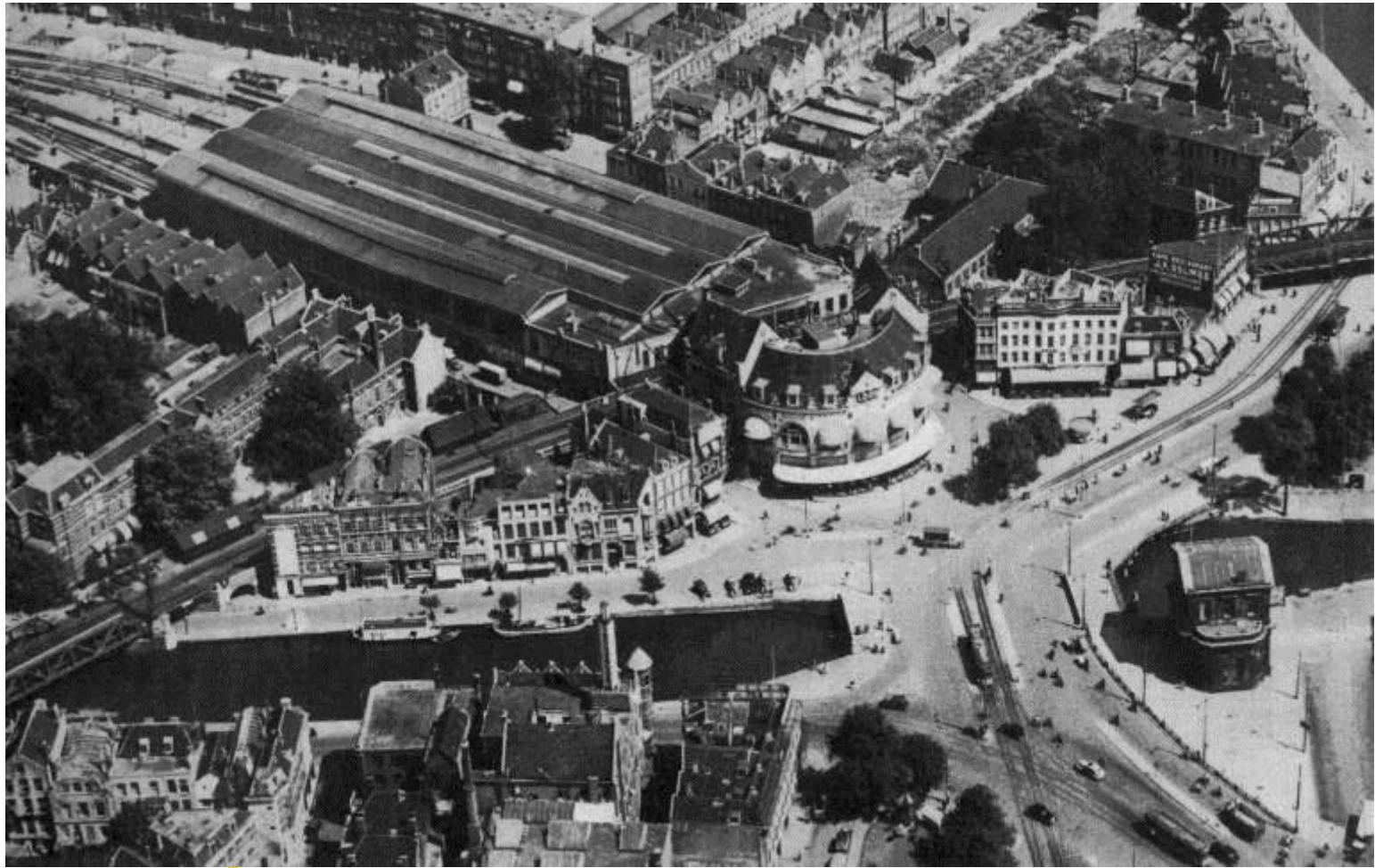
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Station Scheveningen Kurhaus



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Station Rotterdam Hofplein



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Trains 1908 - 1944



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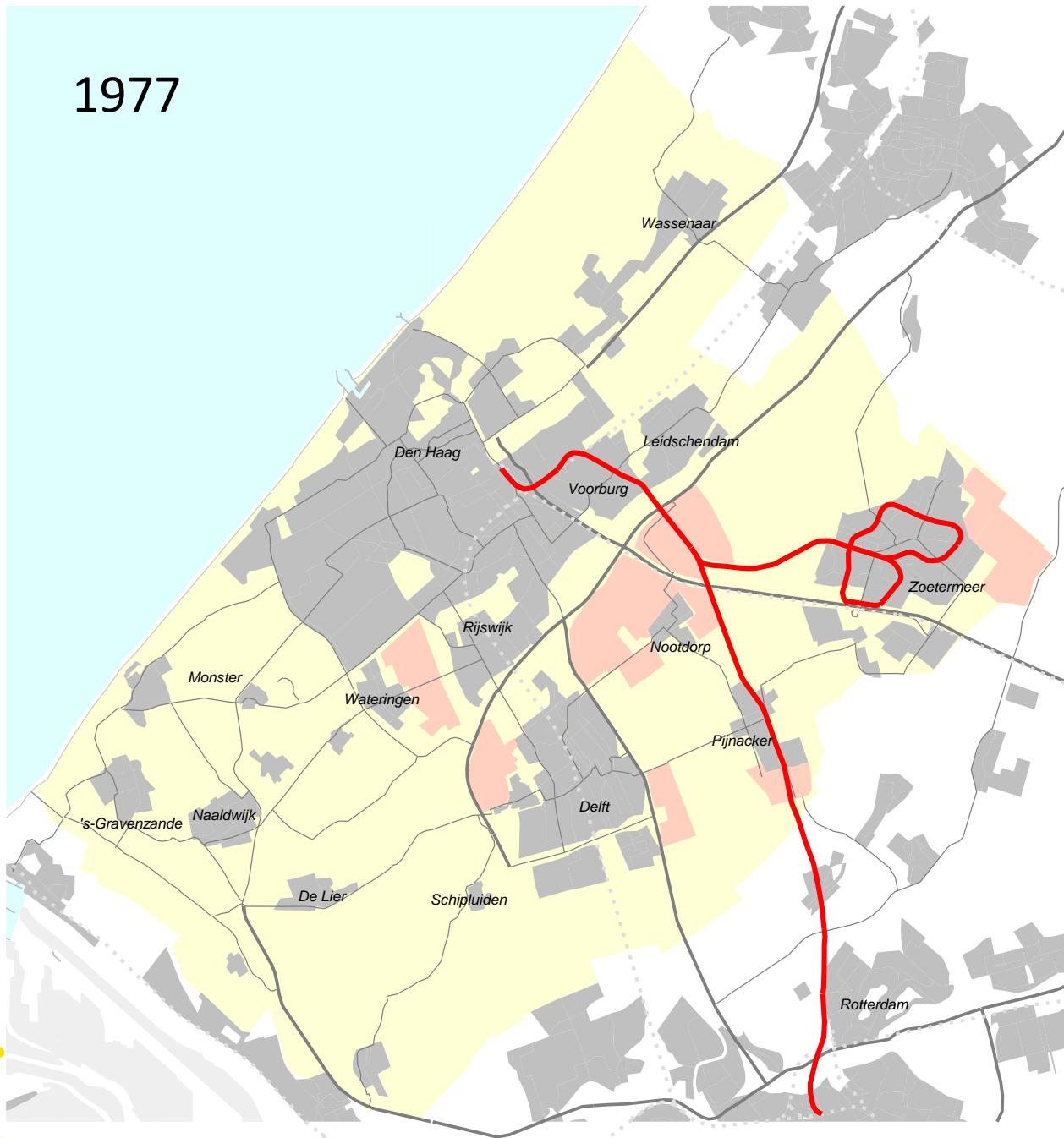


Trains 1946 - 1977



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1977





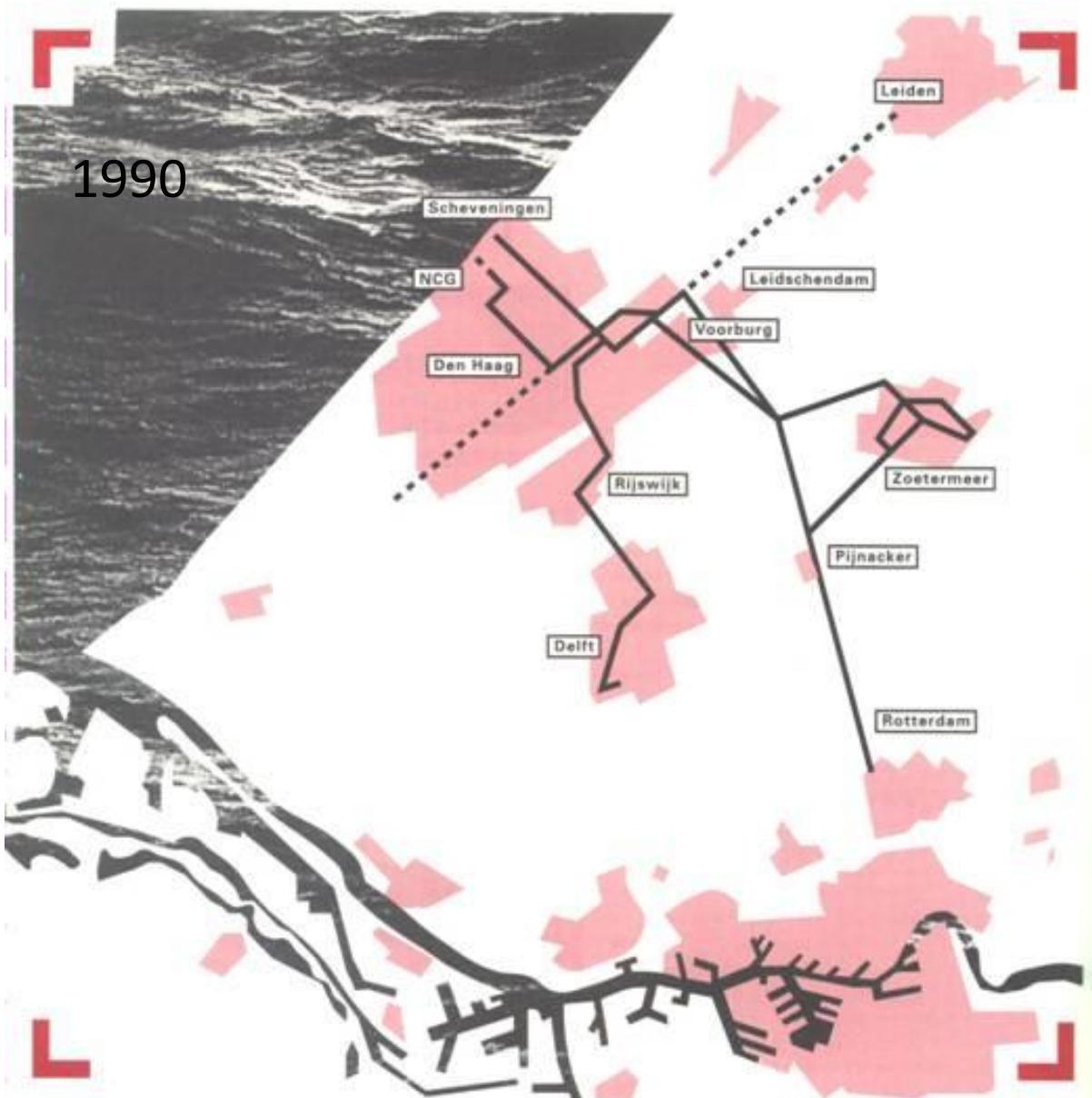
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Trains 1977 - 2006



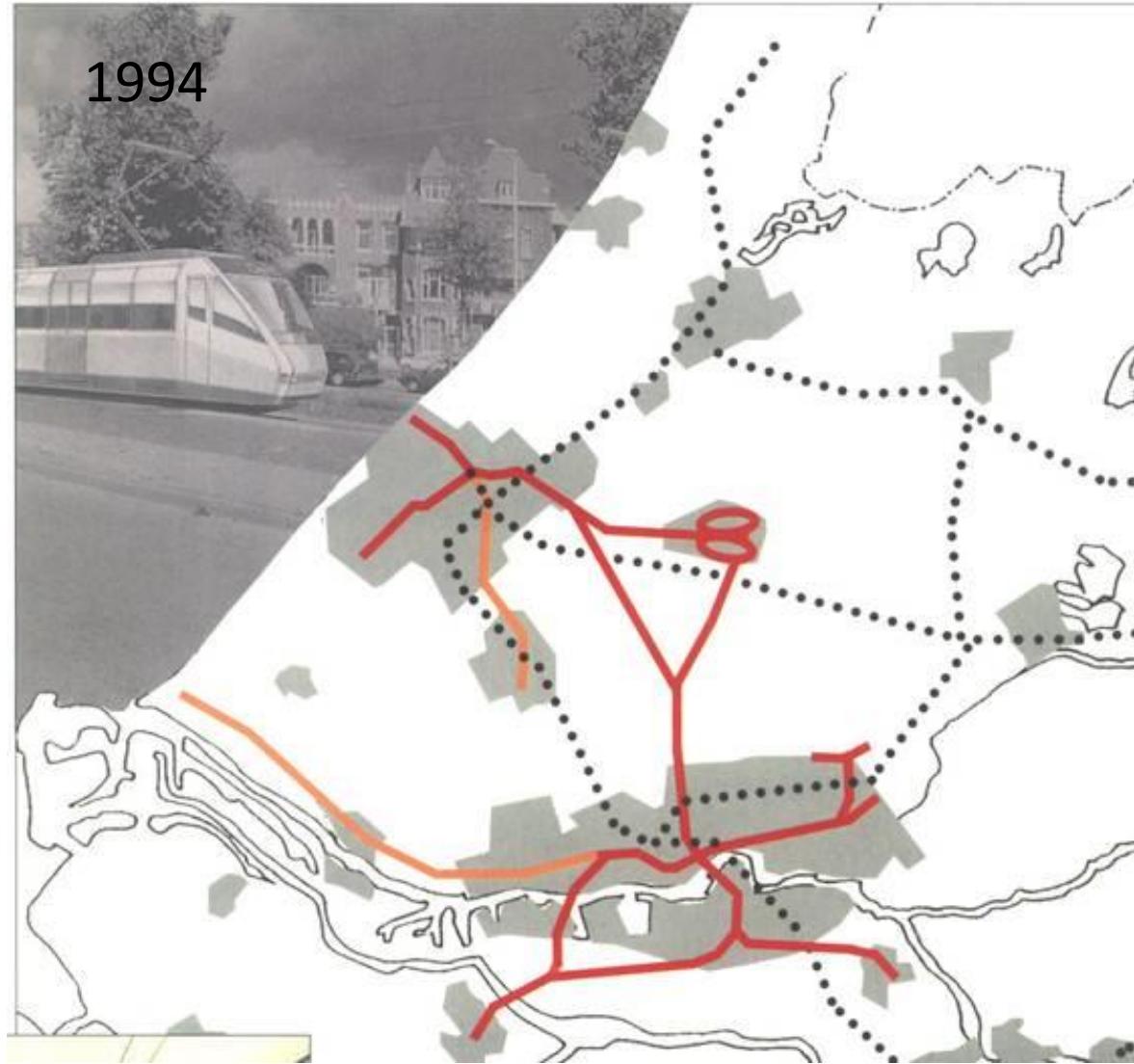
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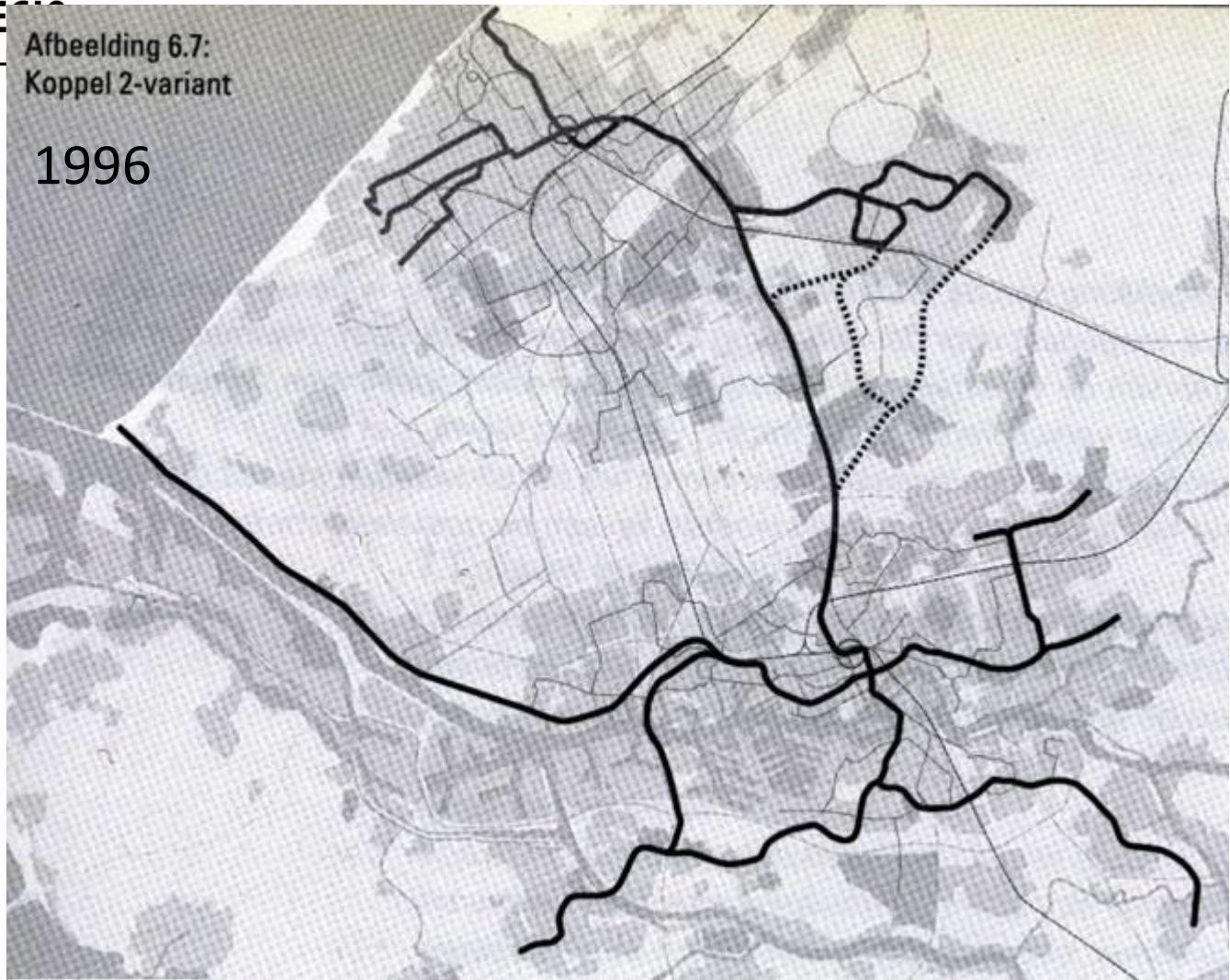
1994



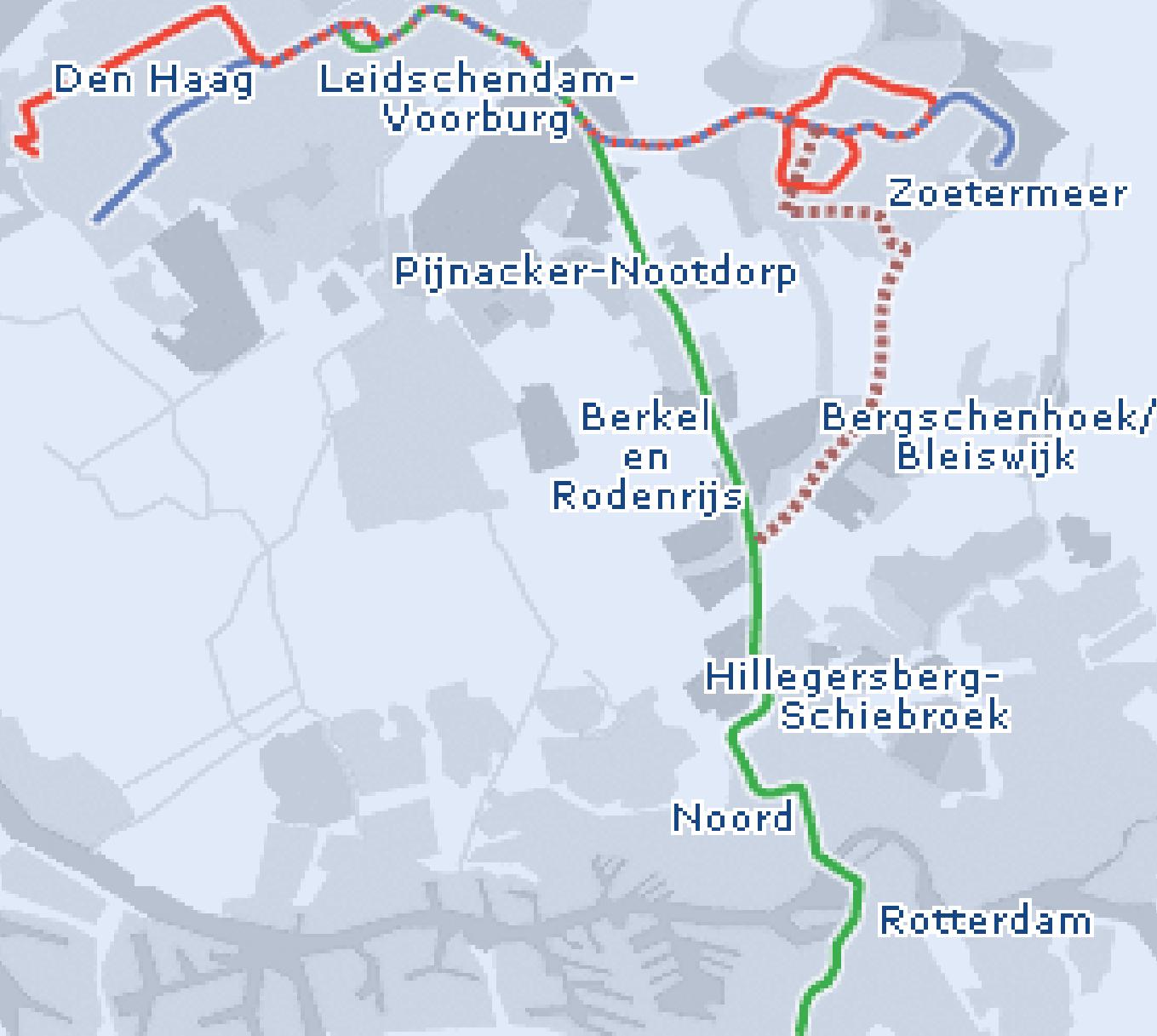
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Afbeelding 6.7:
Koppel 2-variant

1996



2006

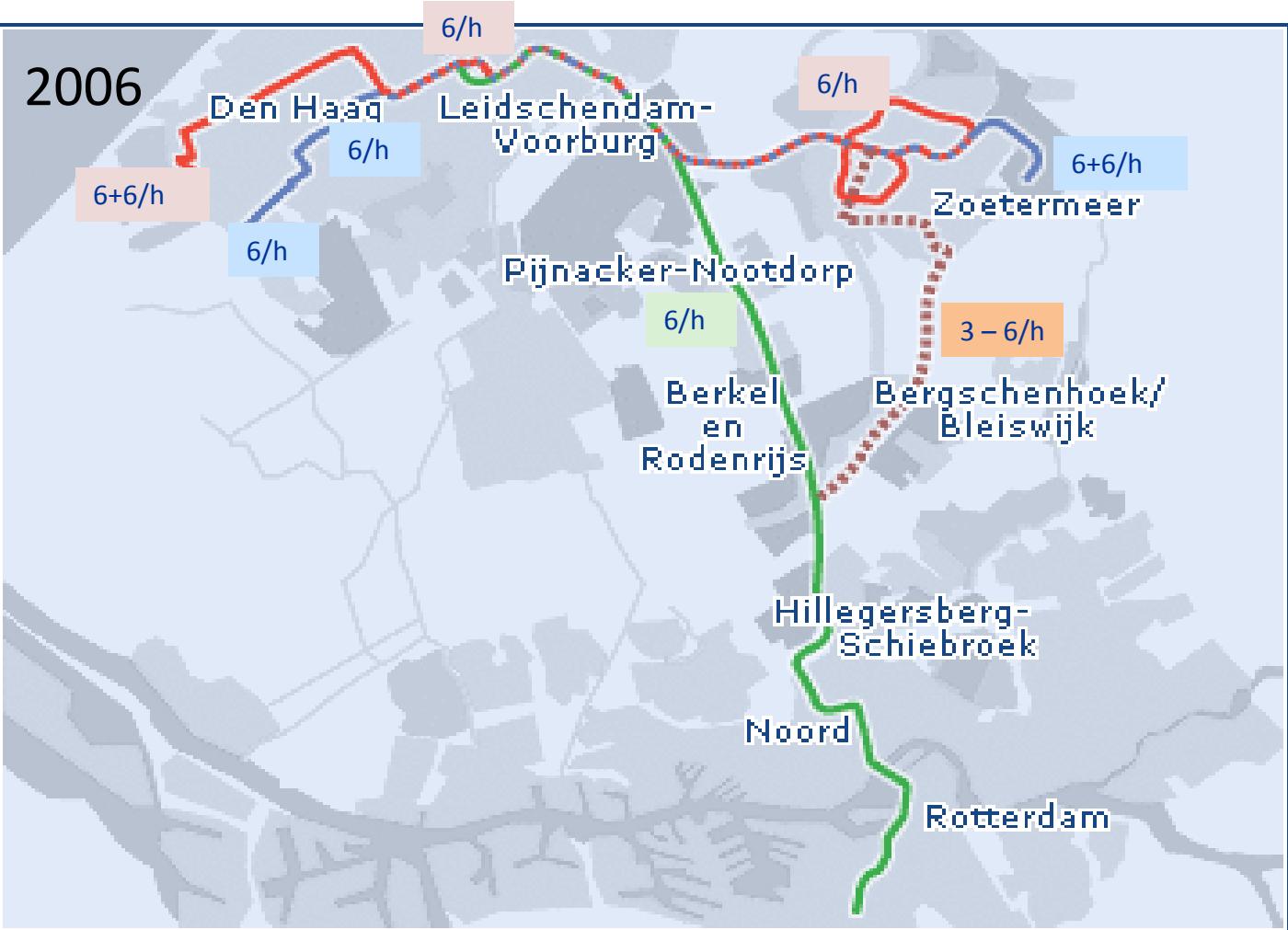




Light rail since 2007

www.htmfoto.net
foto: Wim van Es
Meppelweg/Beresteinlaan, 31-5-2011

RandstadRail frequencies





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Light Rail The Hague RandstadRail



- Train only to central railway station
- Train in the city too expensive and too 'big'
- Metro system results in long walking distances
- Metro too expensive
- Building tunnels is a great risk: tunnel in The Hague city center was inundated during construction, causing four years delay
- Monorail is difficult to integrate in existing tram system

- Light rail: higher capacity than bus or tram
- Light rail: easy to build
- Light rail: easy to develop further





The Hague tram tunnel



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The Hague
CBD
Beatrixkwartier





Central Business District The Hague



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Zoetermeer



Reconstruction of stations to accomodate low-floor trams



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New viaduct in Zoetermeer



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Rotterdam

- 2,4 km long drilled tunnel replaces 100 year old viaduct
- Extension of existing Metro line
- Complete reconstruction of Central Station

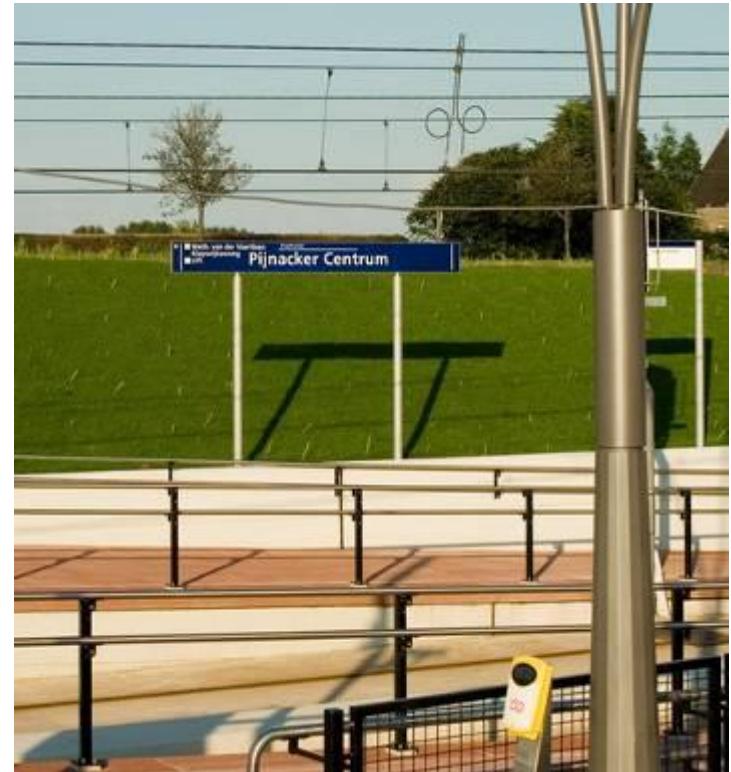


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- Underpass for Metro in centre
- New housing area near station
- Second station

Pijnacker





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ZoRo bus



Developments

- Rotterdam conversion of railway line to Hook of Holland to Metro
- The Hague introduction of new trams, low-floor, wider body
- Province BRT lines





Rotterdam Central Station 1960



Rotterdam Central Station 2015



Rotterdam Central Station 2015



Rotterdam Central Station 2015



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Delft Central Station 2005

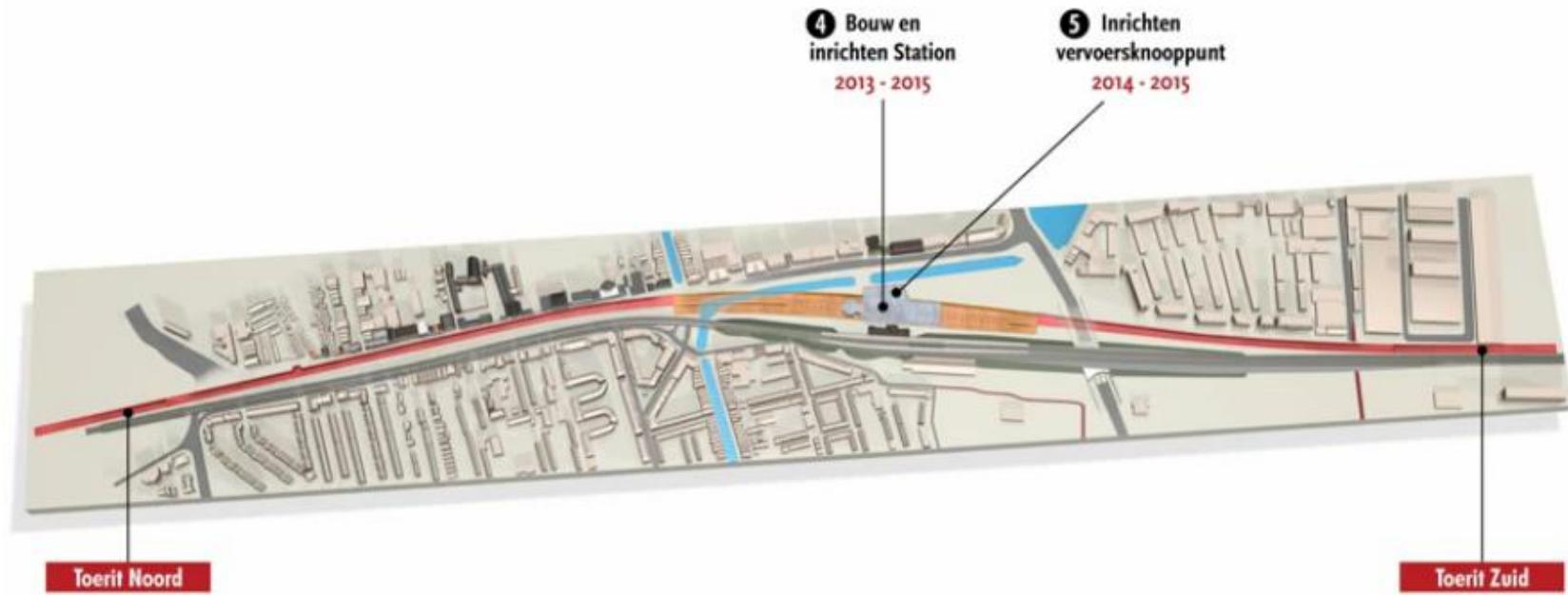


Delft railway viaduct



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A BOUW OOSTBUIS 2010-2015

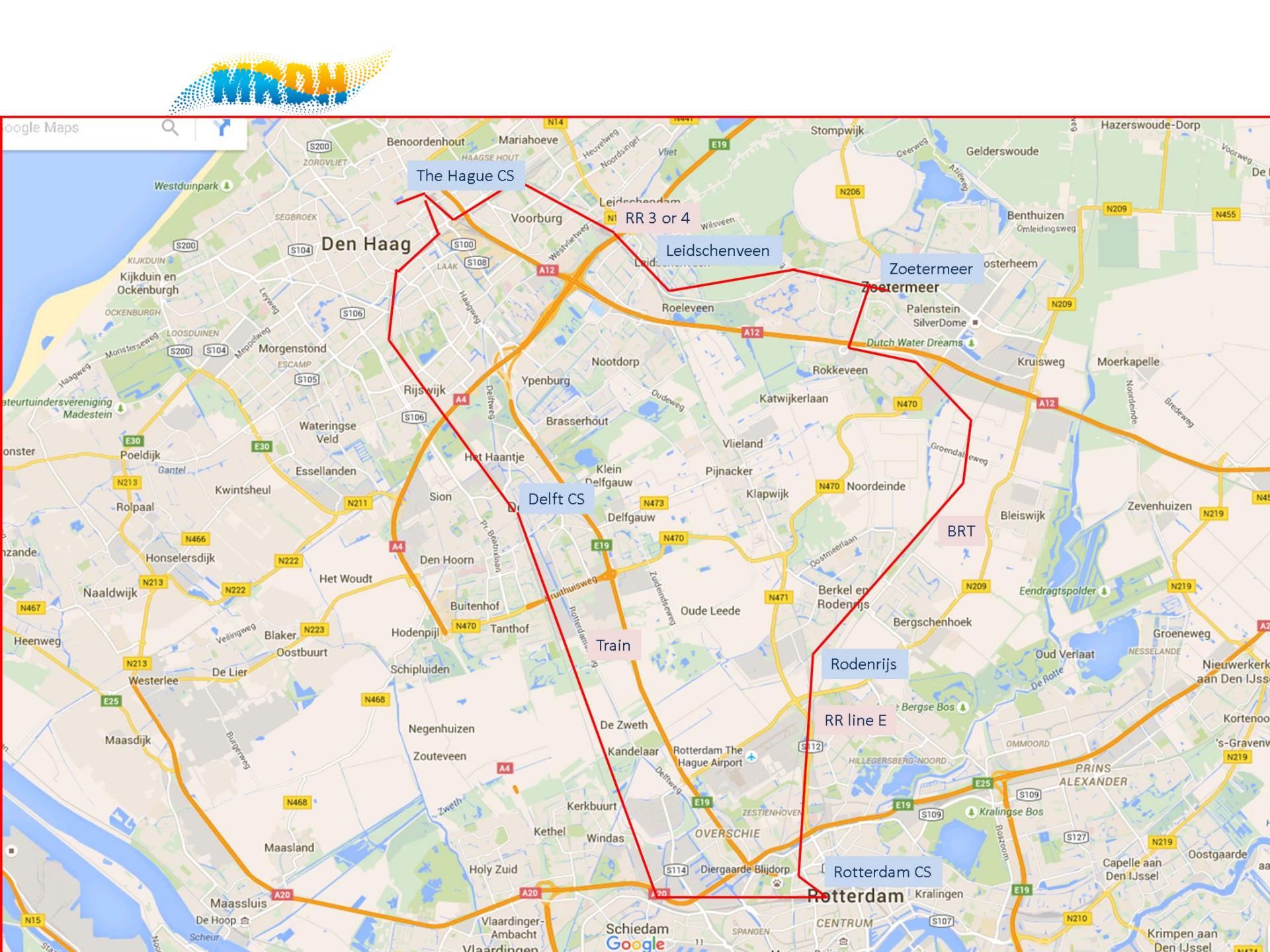




Delft Central Station 2015



Delft Central Station 2015





Takk for oppmerksomheten!

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