



## Effects of Demographic Development on Road Infrastructure - the example of Germany

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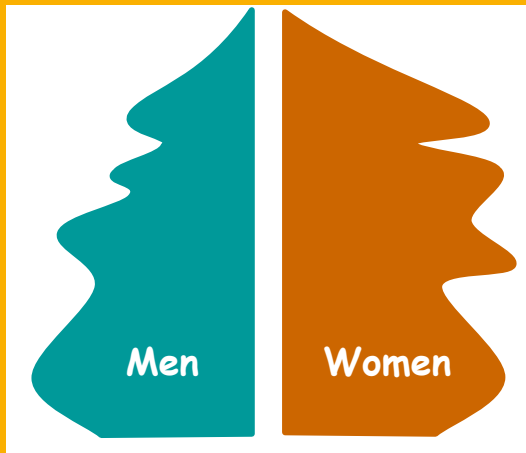
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# TOC

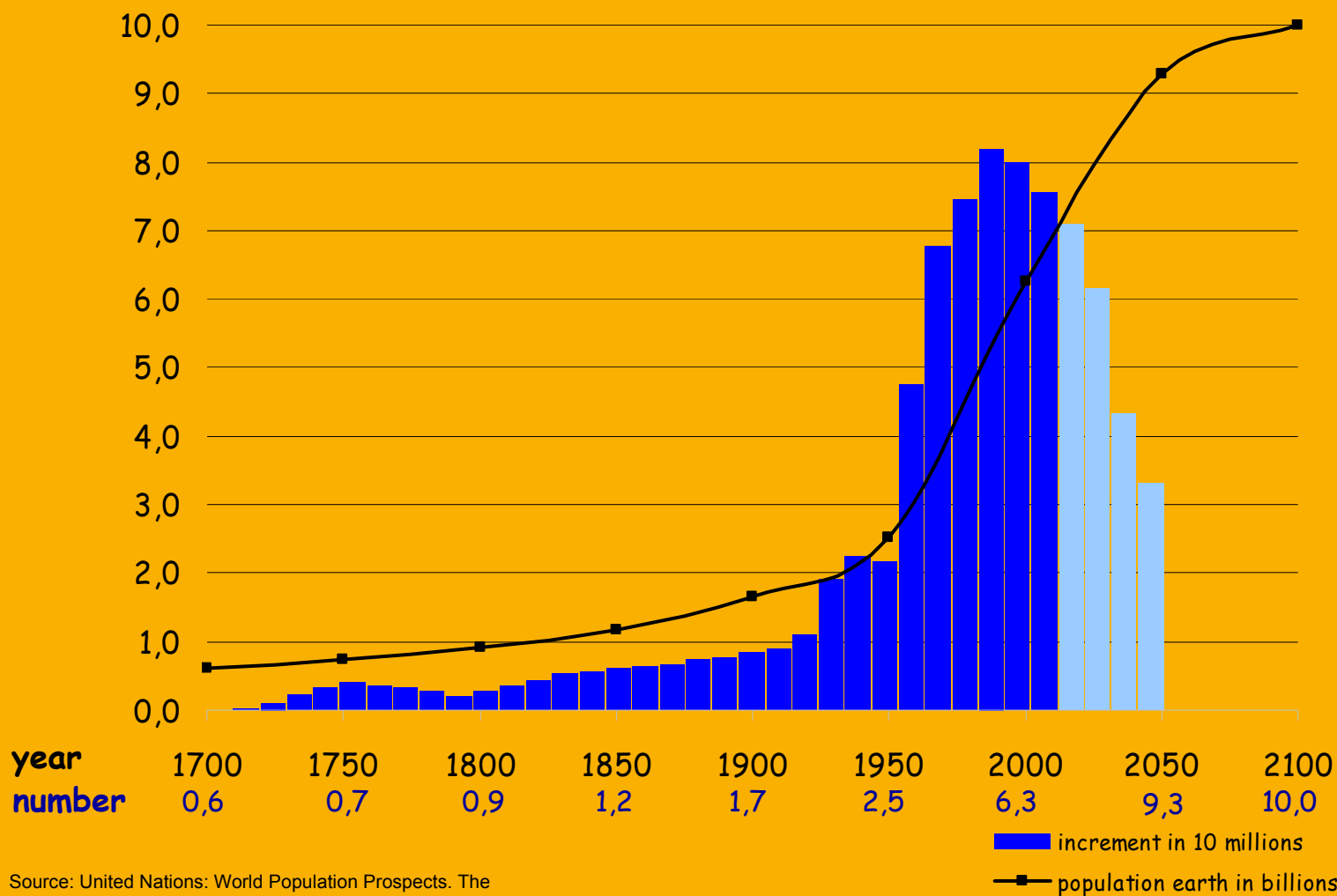
- **Remarks and Reasons**
- **Regional Effects and Shrinking Cities**
- **Effects on Mobility**
- **Needs for Action**



## Remarks and Reasons

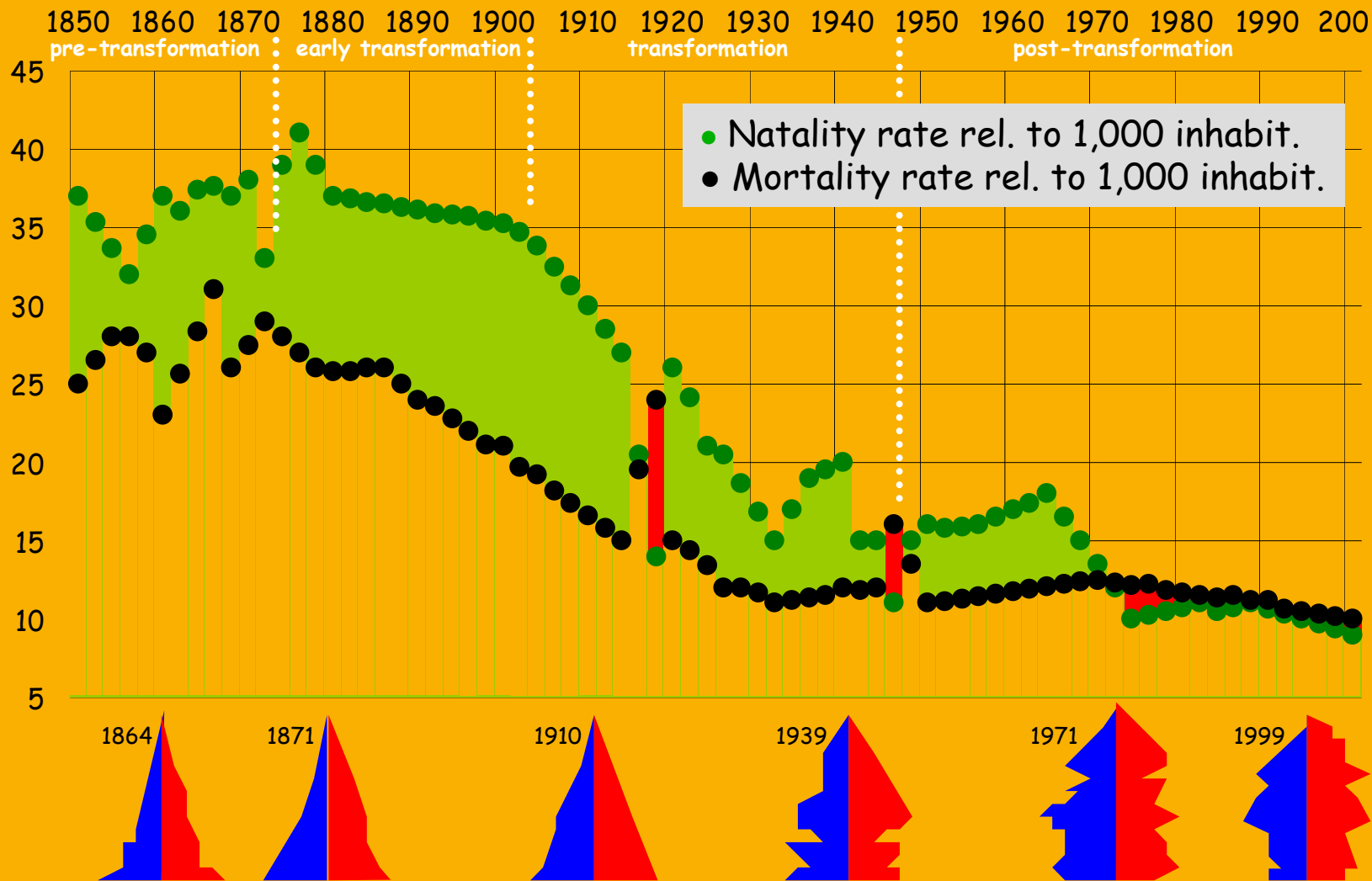


# Development of World Population (in billions)



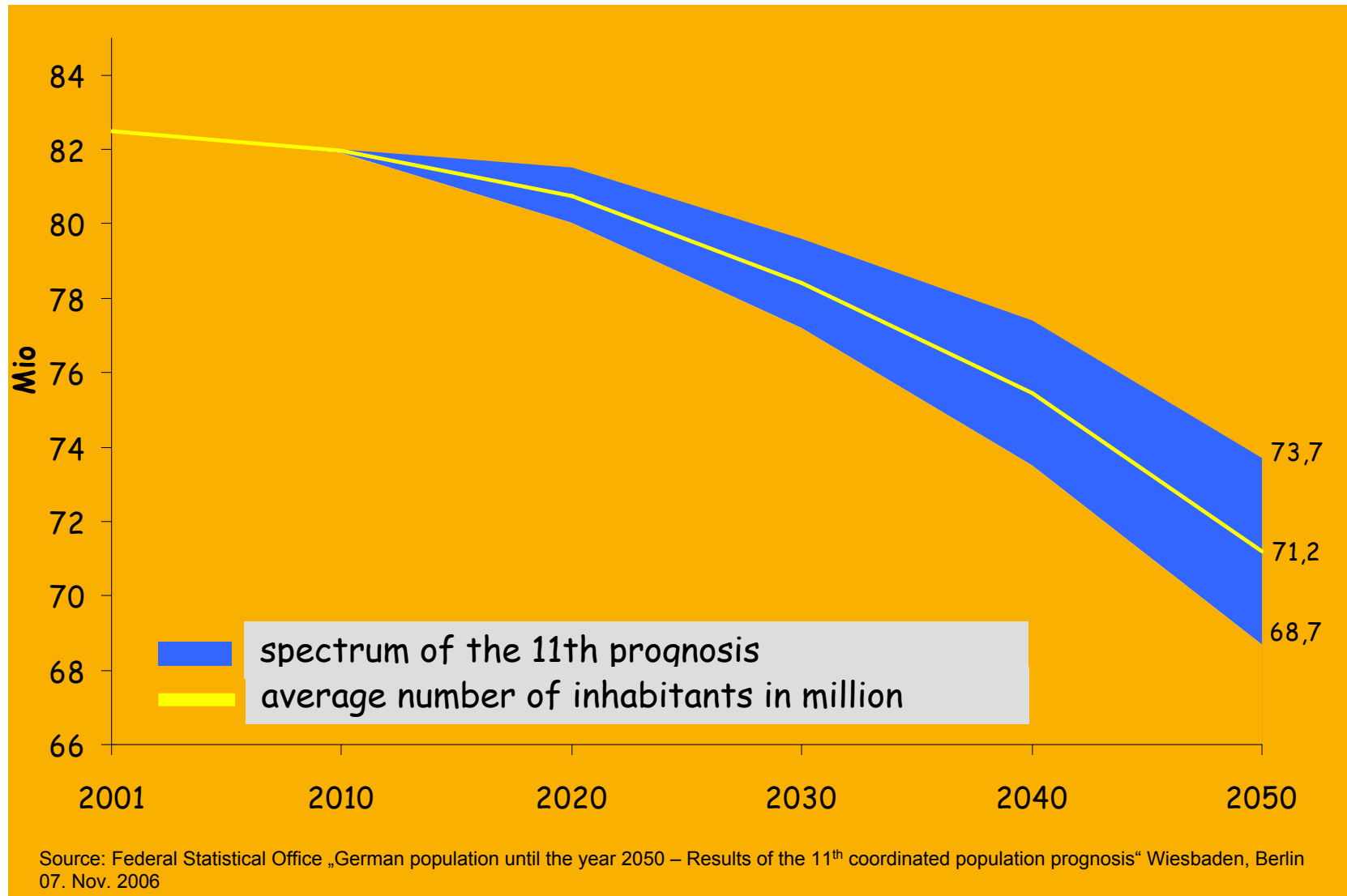
Source: United Nations: World Population Prospects. The 1996 Revision, New York 1998

# Development of the German Birth and Mortality Rate

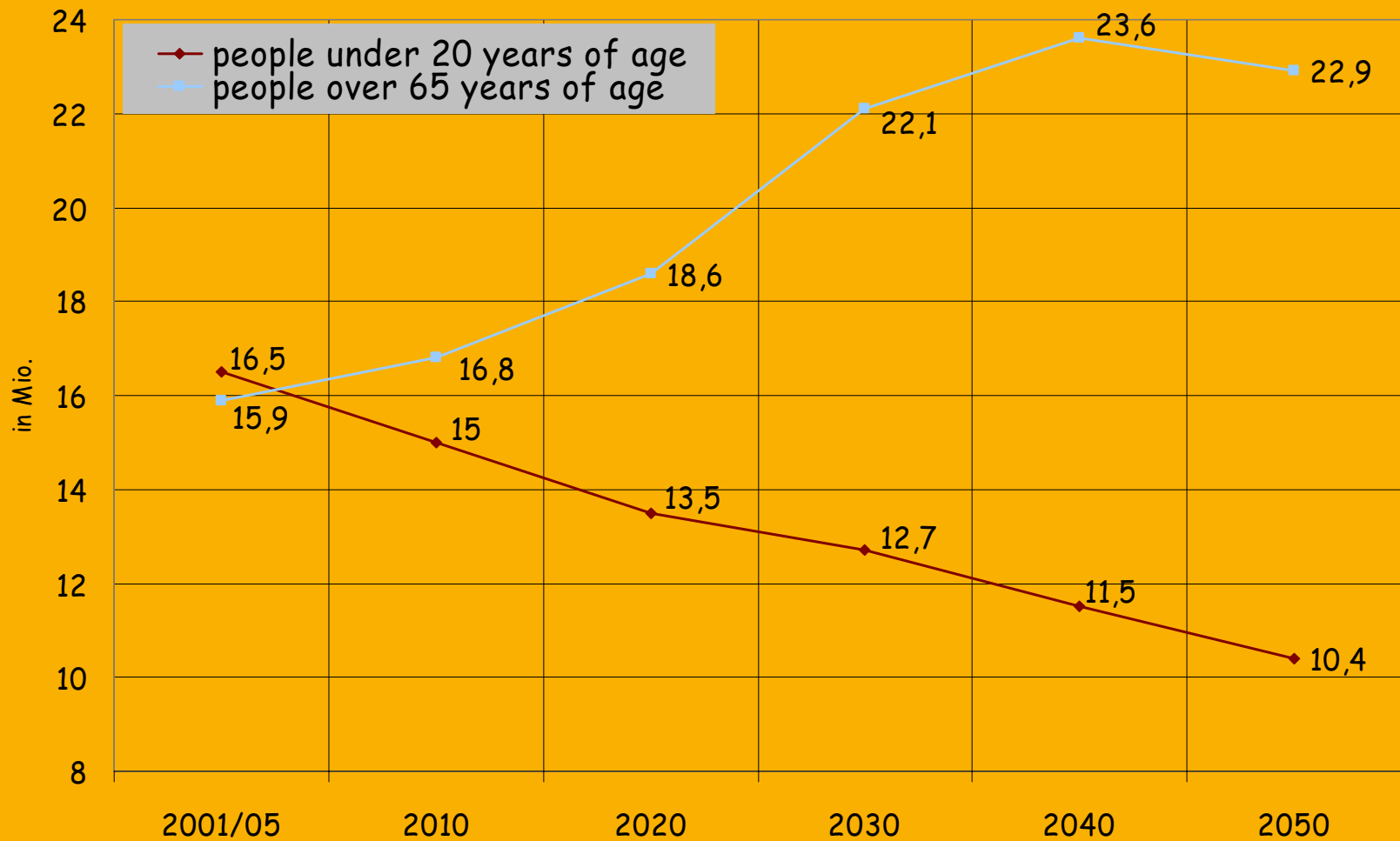


Source: adaption of sources of the Federal Statistical Office

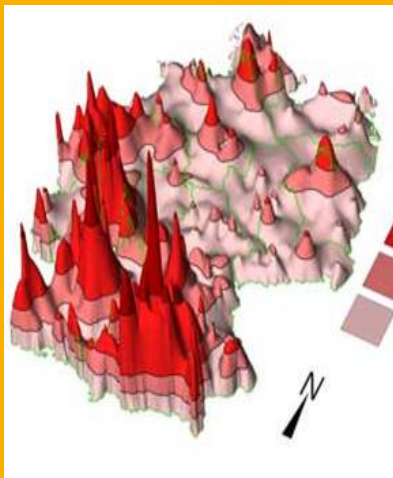
# Demographic Development in Germany



# Ageing of the Society



Source: adaption of sources of the Federal Statistical Office „ German population until the year 2050 – Results of the 11<sup>th</sup> coordinated population prognosis“, November 2006, table page 57



## Regional Effects and Shrinking Cities

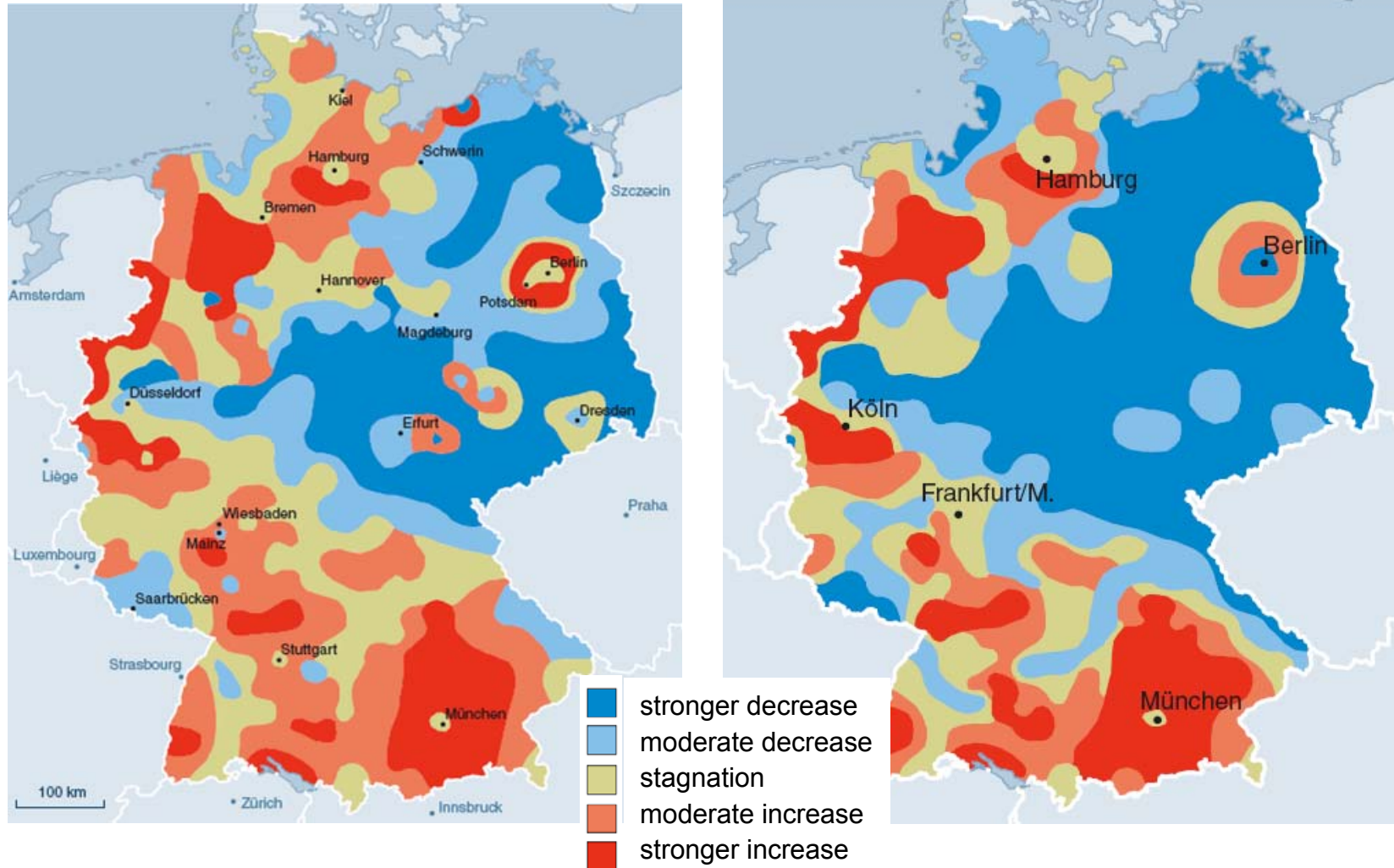




# Spatial Distribution: Development of Population Forecast

2002 - 2020

2002 - 2050





## Effects on Mobility



# Remarks to an Ageing Society



high competence of behaviour,  
low morbidity

Reduced  
behavioral  
competence,  
increase of  
chronical  
illnesses



60

70

80

> 90

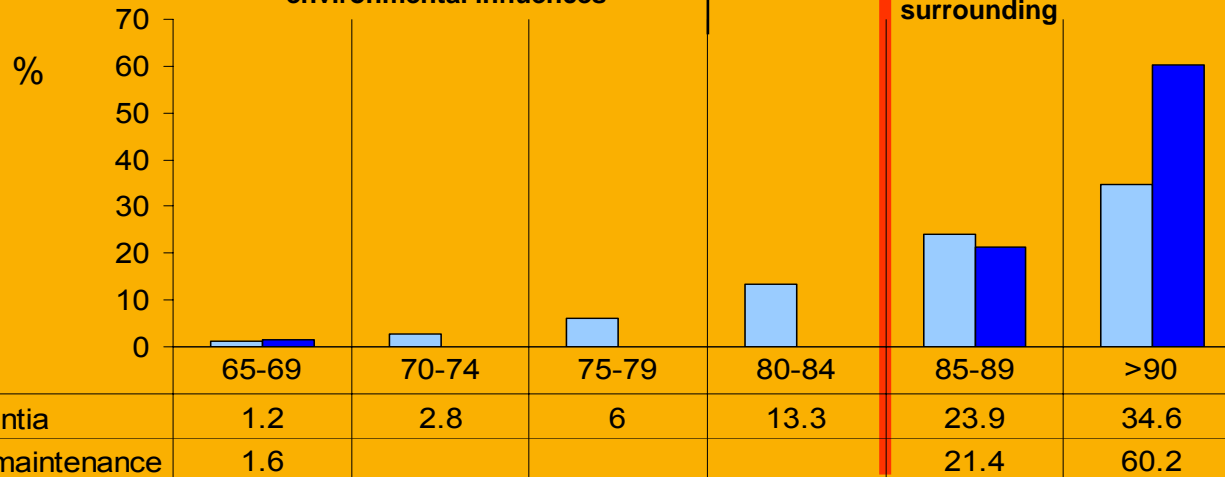
young seniors

middle-age  
seniors

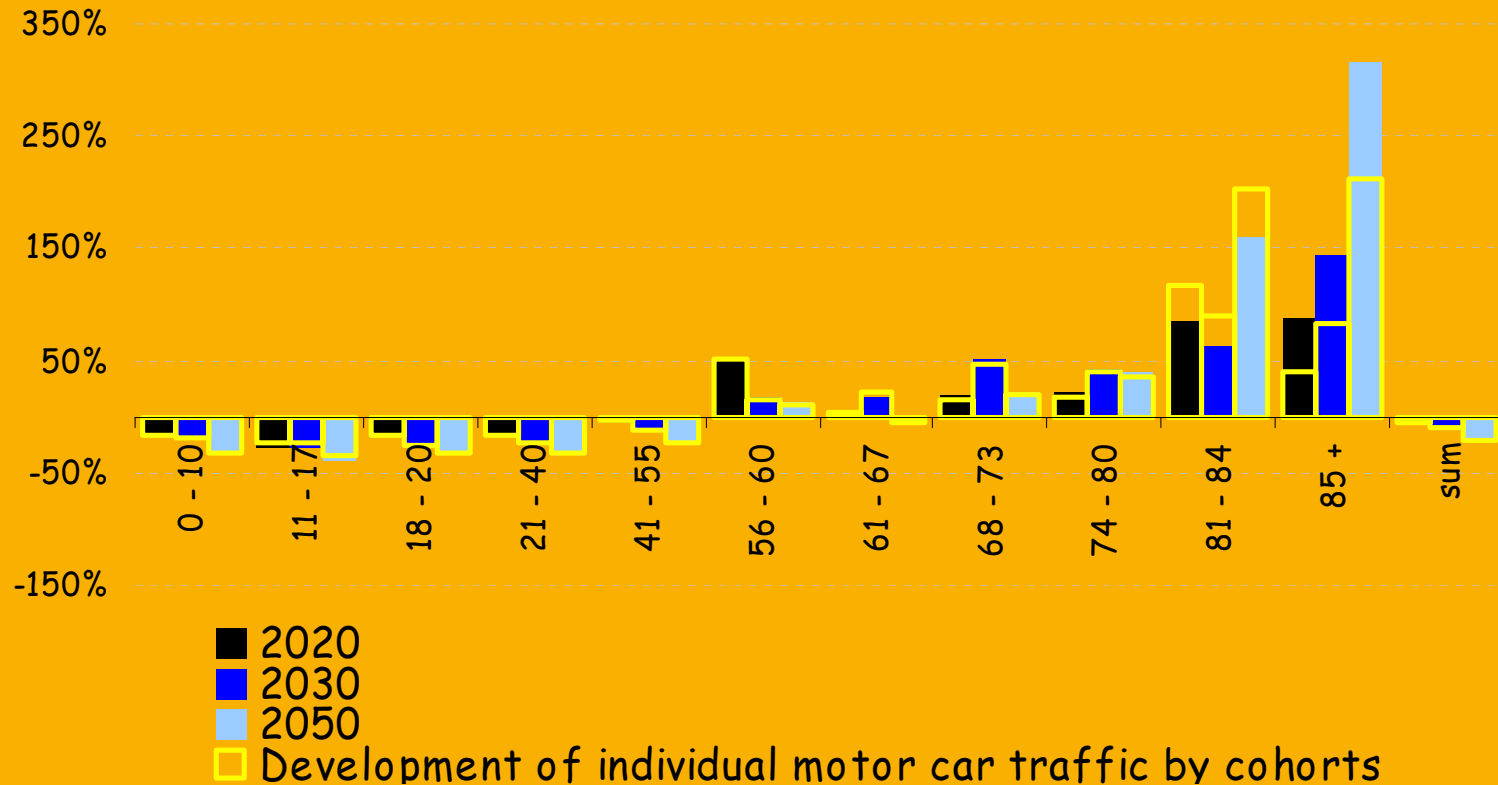
old seniors,  
high-ager

in search of stimulation by inspiring  
environmental influences

subsidy by surroundings,  
in search of protective task of  
surrounding

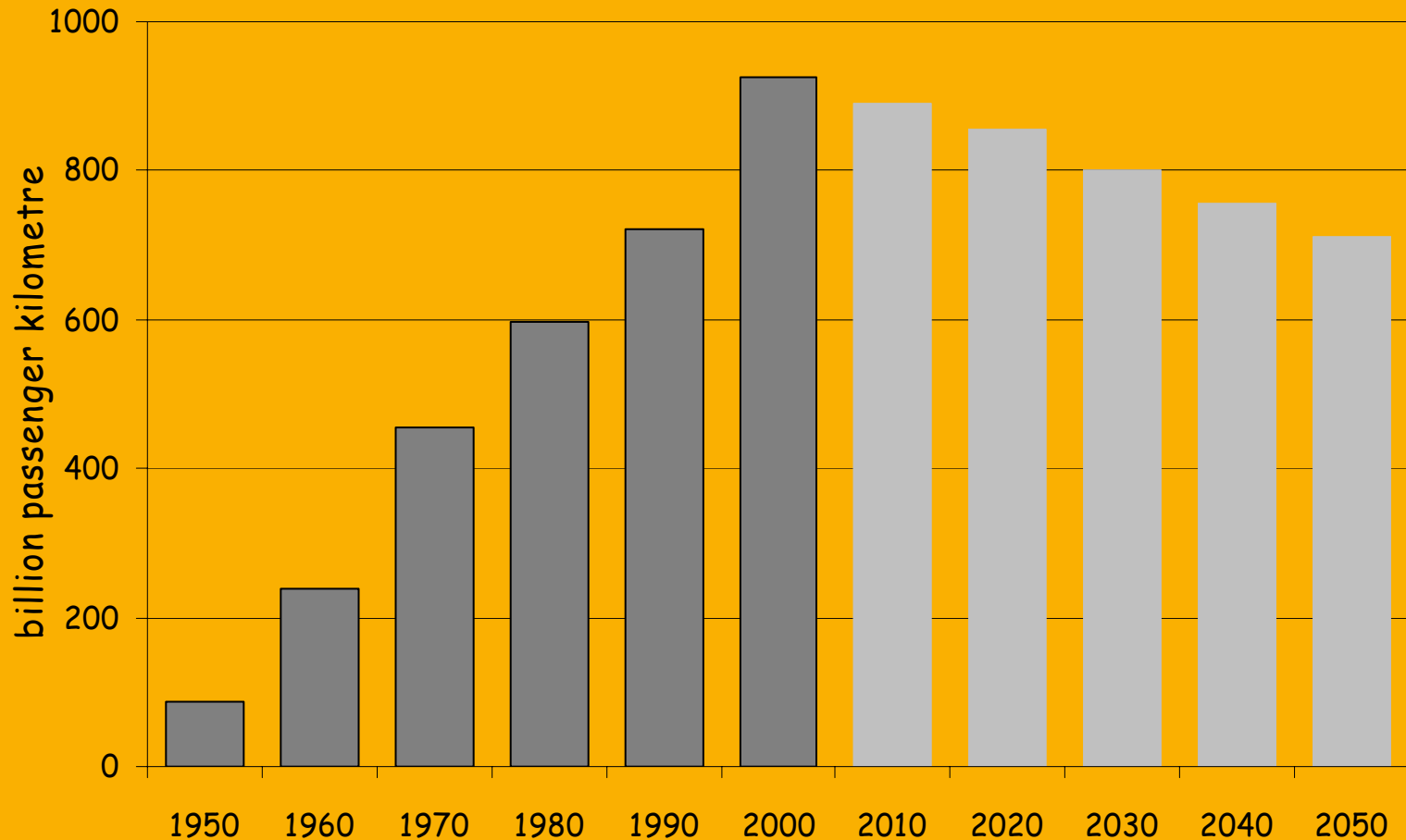


# Development of Passenger Traffic Volume by Age-Cohorts (bill. Pkm since 2002 in %)



Source: Own synthesis of data of the Federal Statistical Office, „German population until the year 2050 – Results of the 11<sup>th</sup> coordinated population”, November 2006, and calculation methods of Ralf Ratzenberger: „Demographic shift and mobility”, German motoring organisation „Allgemeiner Deutscher Automobil-Club e.V.” (ADAC), Munich 2006

# Passenger Traffic Development (bill. Pkm)



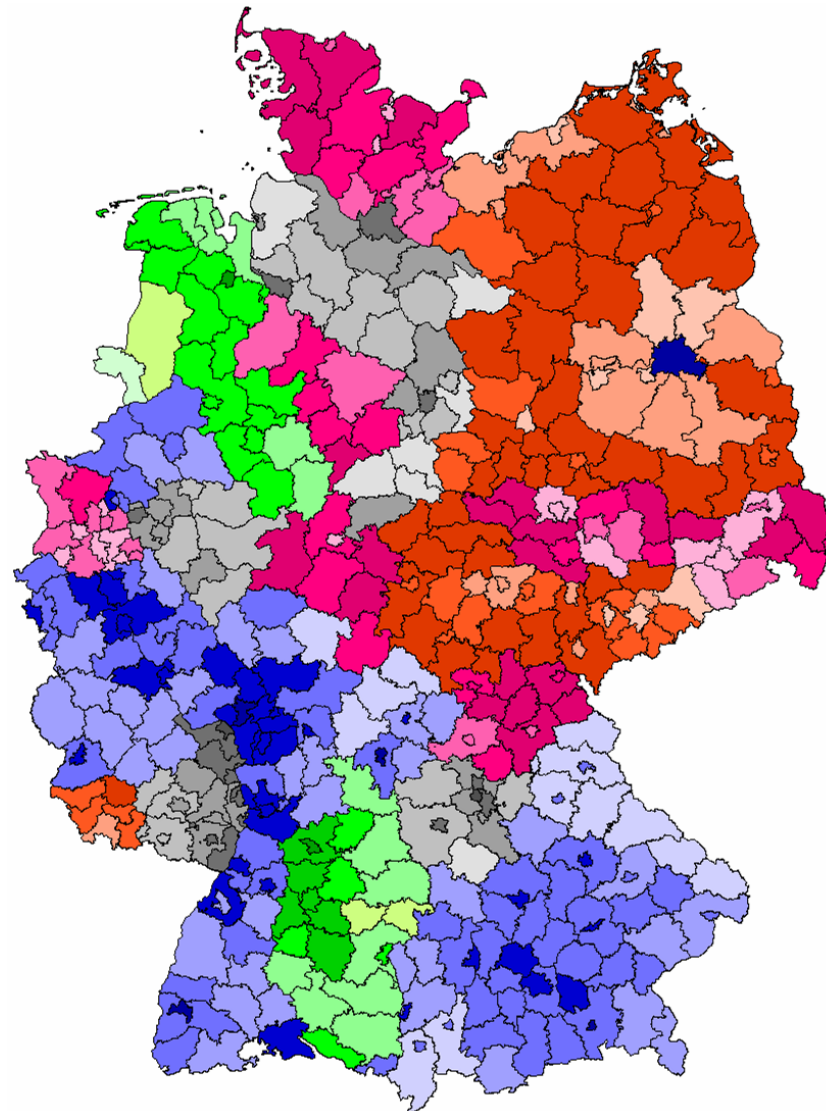
Source: Own synthesis of data of the Federal Statistical Office, „German population until the year 2050 – Results of the 11<sup>th</sup> coordinated population“, November 2006, and calculation methods of Ralf Ratzenberger: „Demographic shift and mobility“, German motoring organisation „Allgemeiner Deutscher Automobil-Club e.V.“ (ADAC), Munich 2006

# Demographic and Structural Potentials with Transport Relevance (2020)

## Traffic Development

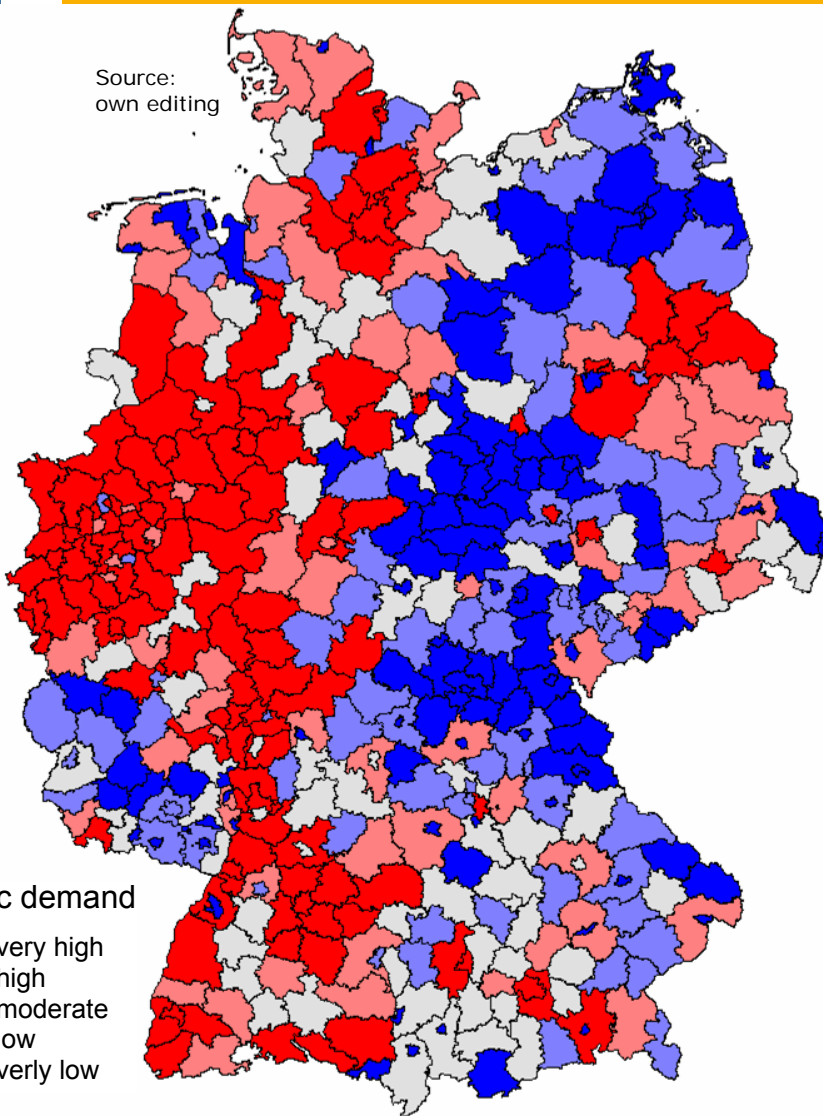
		Proportion of Seniors				
		very low	low	balanced	high	very high
Density/ Trend	very high					
	high					
	stagnating					
	low					
	very low					

Source: own editing

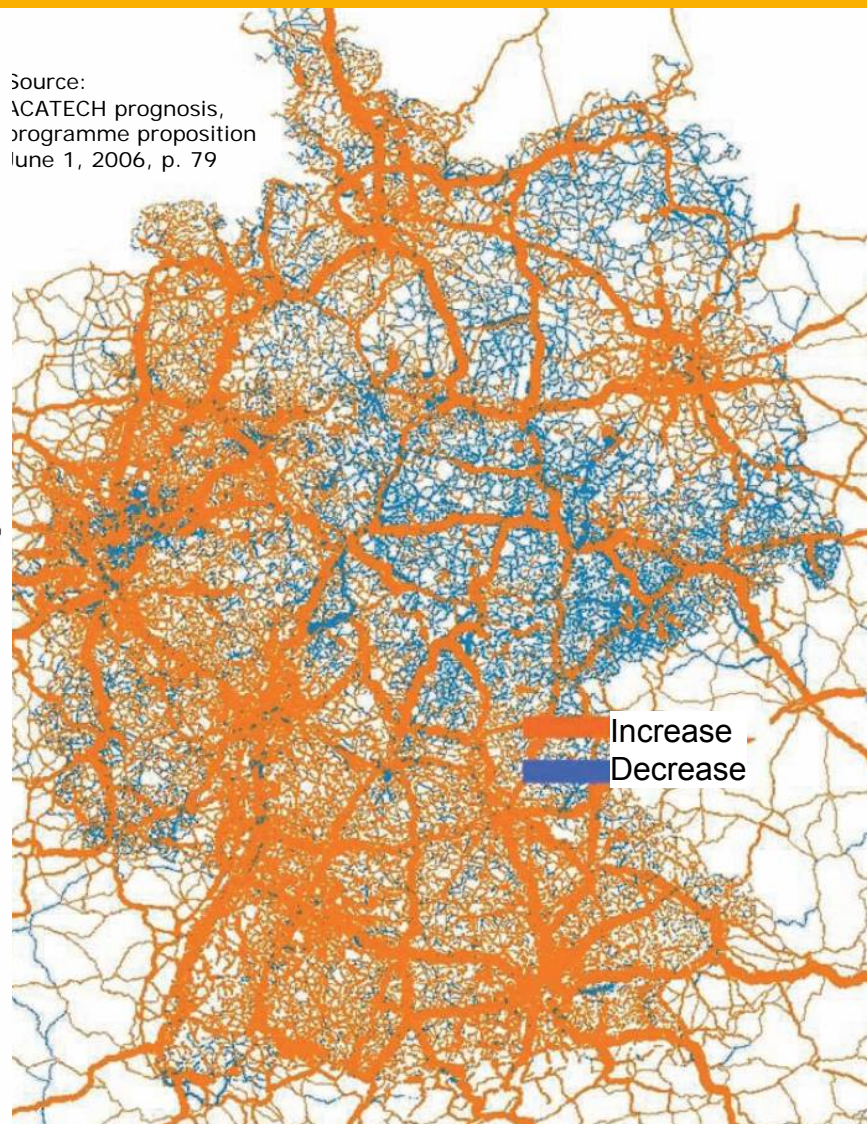


# Traffic Generation and Traffic Volume (2020)

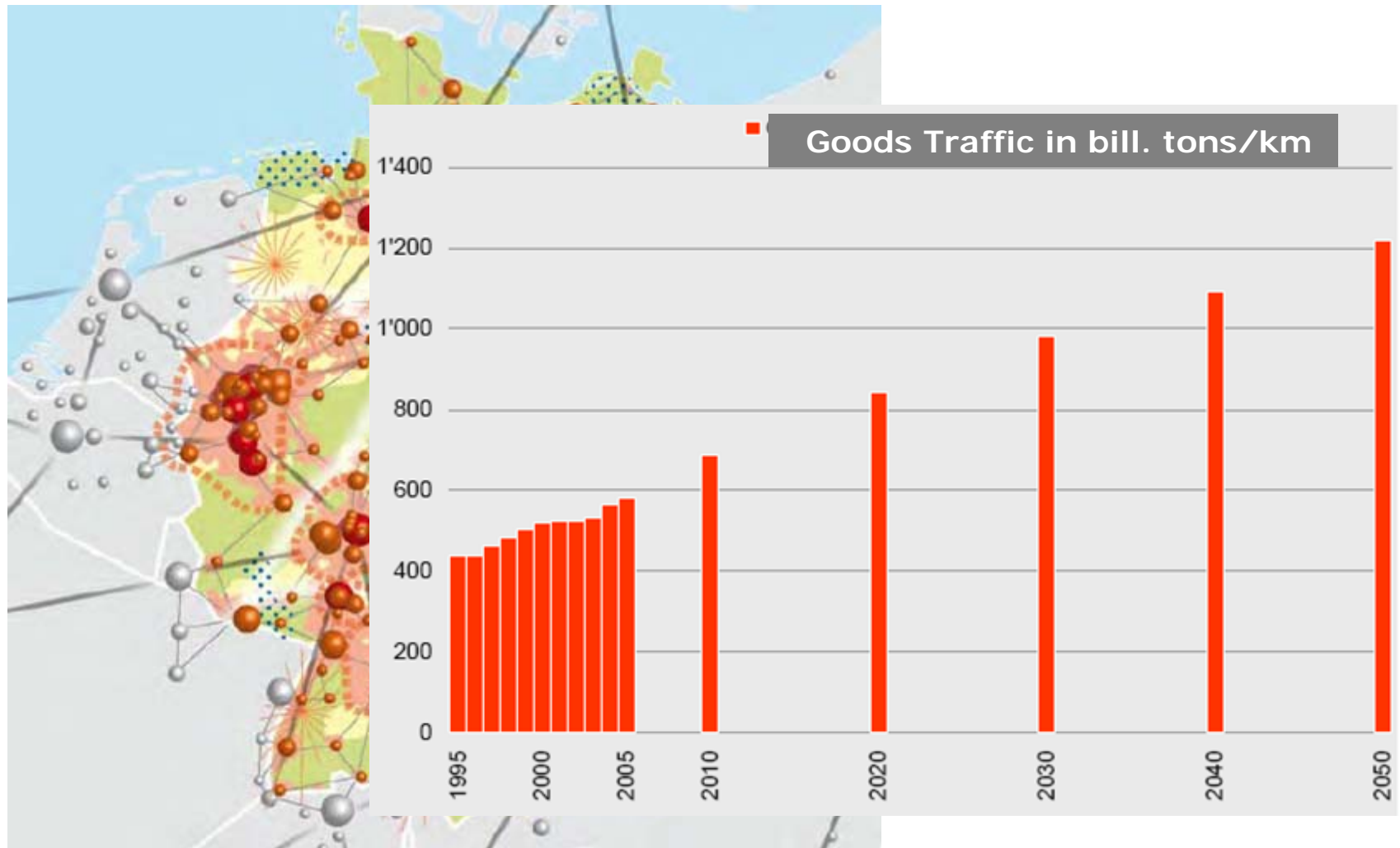
Source:  
own editing



Source:  
ACATECH prognosis,  
programme proposition  
June 1, 2006, p. 79



# Germany in the Center of Europe, Development of Goods Traffic



Source: BMVBS „Guiding principles and strategies for German spatial development“, June 30, 2006

Ickert L., Matthes U., et al. „Appraisal of long-term goods traffic development in Germany up to the year 2050“, protrans, Bale March 31, 2007





## Needs for Action

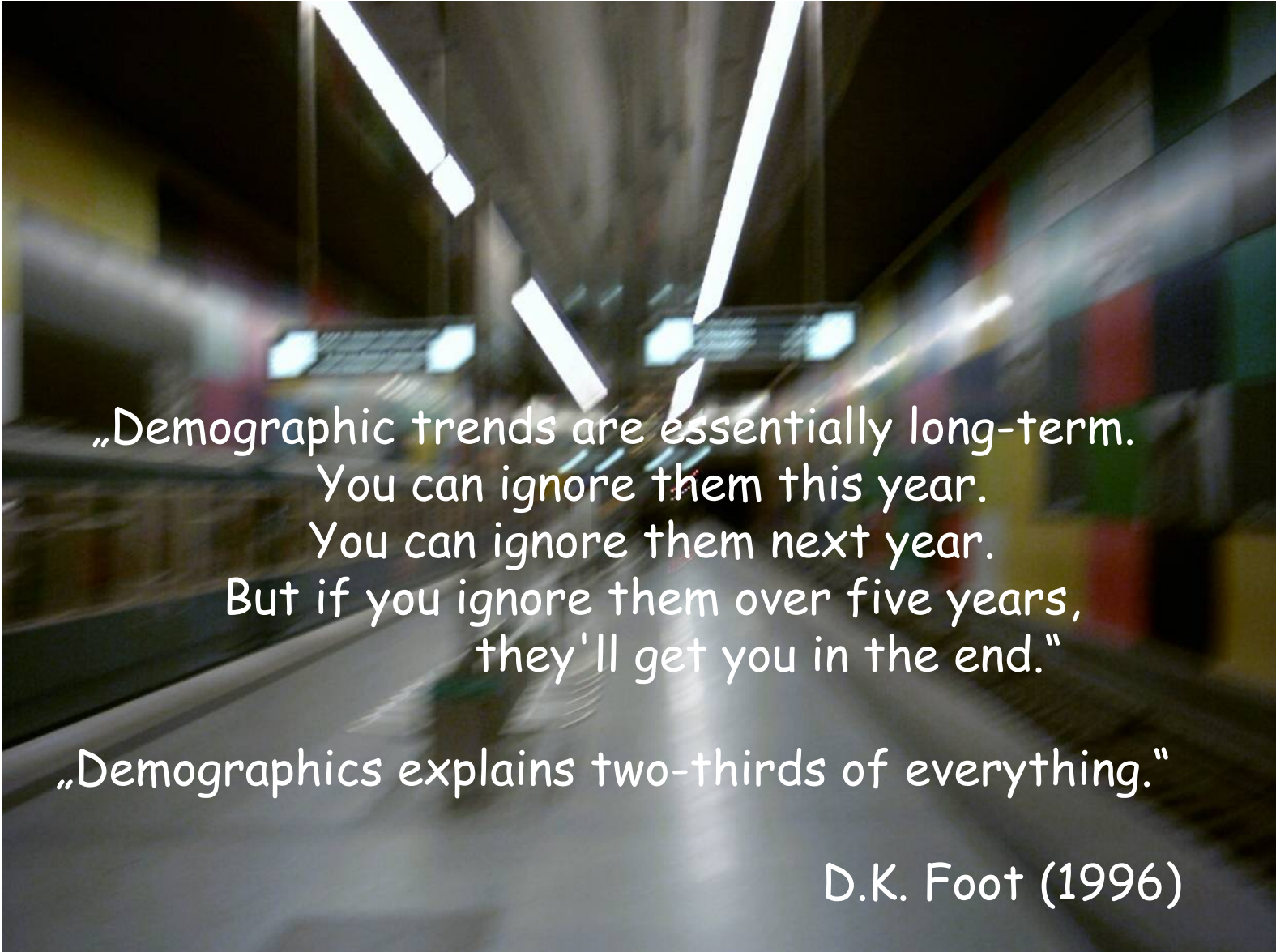


## Needs for action in Germany

- The traffic volume in large parts of the country will not grow any longer but stagnate or go back.
- We need differentiated planning of the transport systems.
- The needs of seniors draw our attention to the adjustment of senior appropriate traffic supplying structures.
- Particularly with regard to Eastern Germany playgrounds of capacity are opening.
- Both under- and oversized highway segments will develop.
- In some parts of Germany we will have to bridge the time until reduction.
- Compared to new constructions, maintenance and rebuilding gain in importance.

## Needs for action in Germany

- Continuation and completion of projects under construction take priority over new planning.
- Concentration of construction investments:
  - ➔ on the growth cores.
  - ➔ on traffic effectiveness and/or efficiency (removal of gaps and bottlenecks in highly loaded sections and junctions).
  - ➔ on cross-linking of consumption and industrial centres with the national and international export and logistics turntables (sea- and airports)
  - ➔ on routes of transit traffic within the expanding European Union.
- The “Remanence Effects” force „Life-Cycle-Considerations“
- Future planning methods of cost efficiency assessment will have to base on the central ideas of sustainability!



„Demographic trends are essentially long-term.  
You can ignore them this year.  
You can ignore them next year.  
But if you ignore them over five years,  
they'll get you in the end.“

„Demographics explains two-thirds of everything.“

D.K. Foot (1996)