



Ministry of Infrastructure and the  
Environment

# Good Practices and experiences the Netherlands

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- Infrastructure in Europe
- Infrastructure in the Netherlands
- Planning Infrastructure



# Waterway infrastructure in Europe



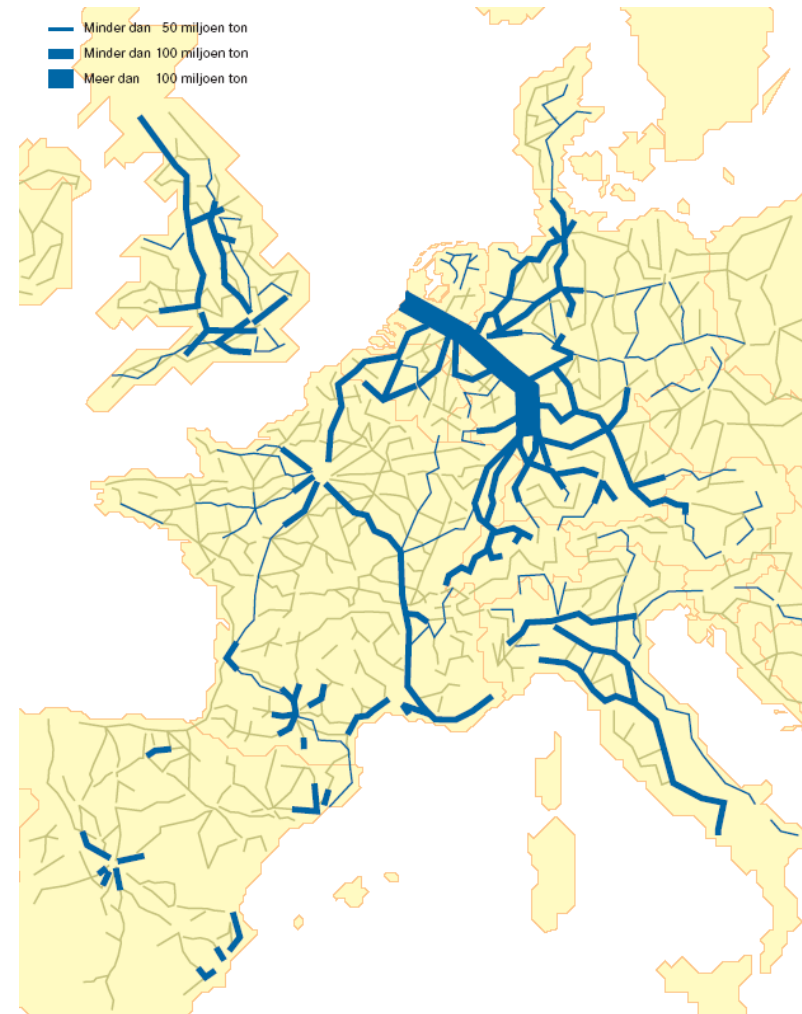


# Inland waterways in Europe

- Rotterdam: largest seaport in Europe
- Western European inland shipping fleet: ca. 13.000 ships
- Market share inland shipping in Europe: 3-6%
- Waterways are important link between main industrial areas
- Rhine-Danube-corridor is most important corridor
- Duisburg and Luik are biggest inland ports
- Many regulatory institutions and frameworks

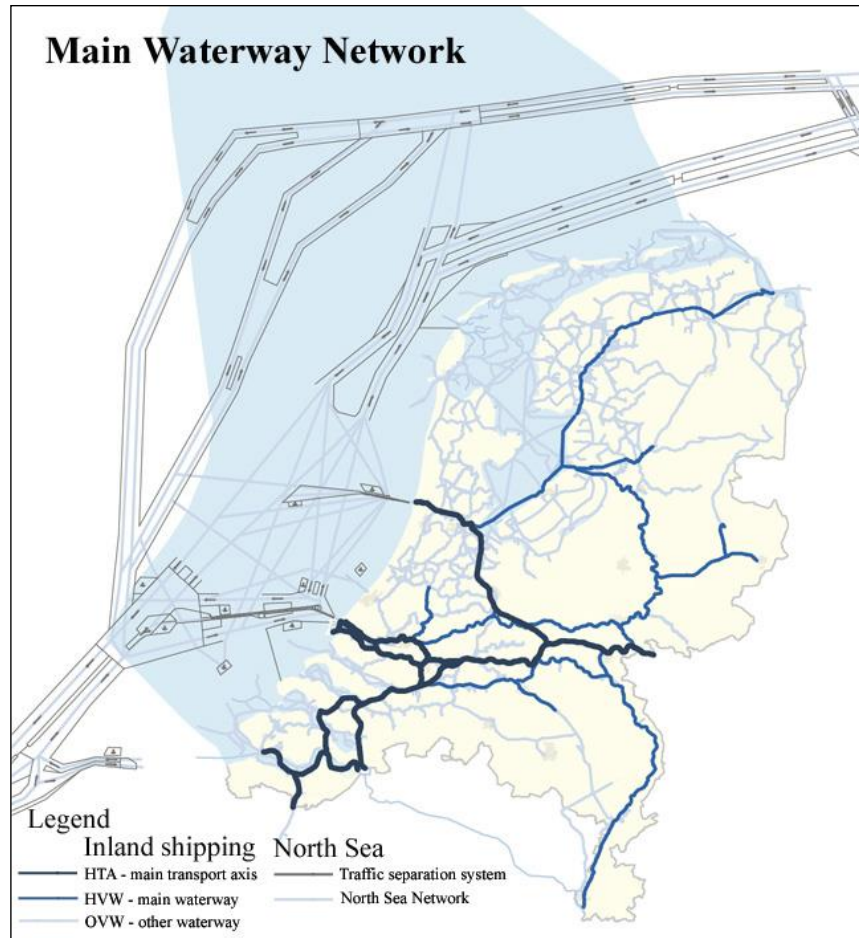
# Inland navigation in the Rhine Alpine corridor

- > 80% of all inland navigation in Europe
- Multi modal transport of containers is already highly developed
- Dominant market for dry and liquid bulk





# Waterway infrastructure in the Netherlands





# Inland waterways in the Netherlands

- 4400 km of inland waterways in NL; 1400 km national importance
- 84 locks and 422 bridges managed by the Ministry
- Dutch inland shipping fleet: ca. 7000 ships
- Yearly transport over water: 330 mln tonnes/3,2 mln TEU
  - bulk transport (market share 80%)
  - container transport (market share 35%)
- 80% inland shipping connected to ports of Rotterdam + Amsterdam
- 389 inland ports
- Ca. 20 multimodal container terminals
- 300.000 larger recreational boats
- Water has many other functions as well: drinking water, water management, water quality, water quantity, agriculture, fishing









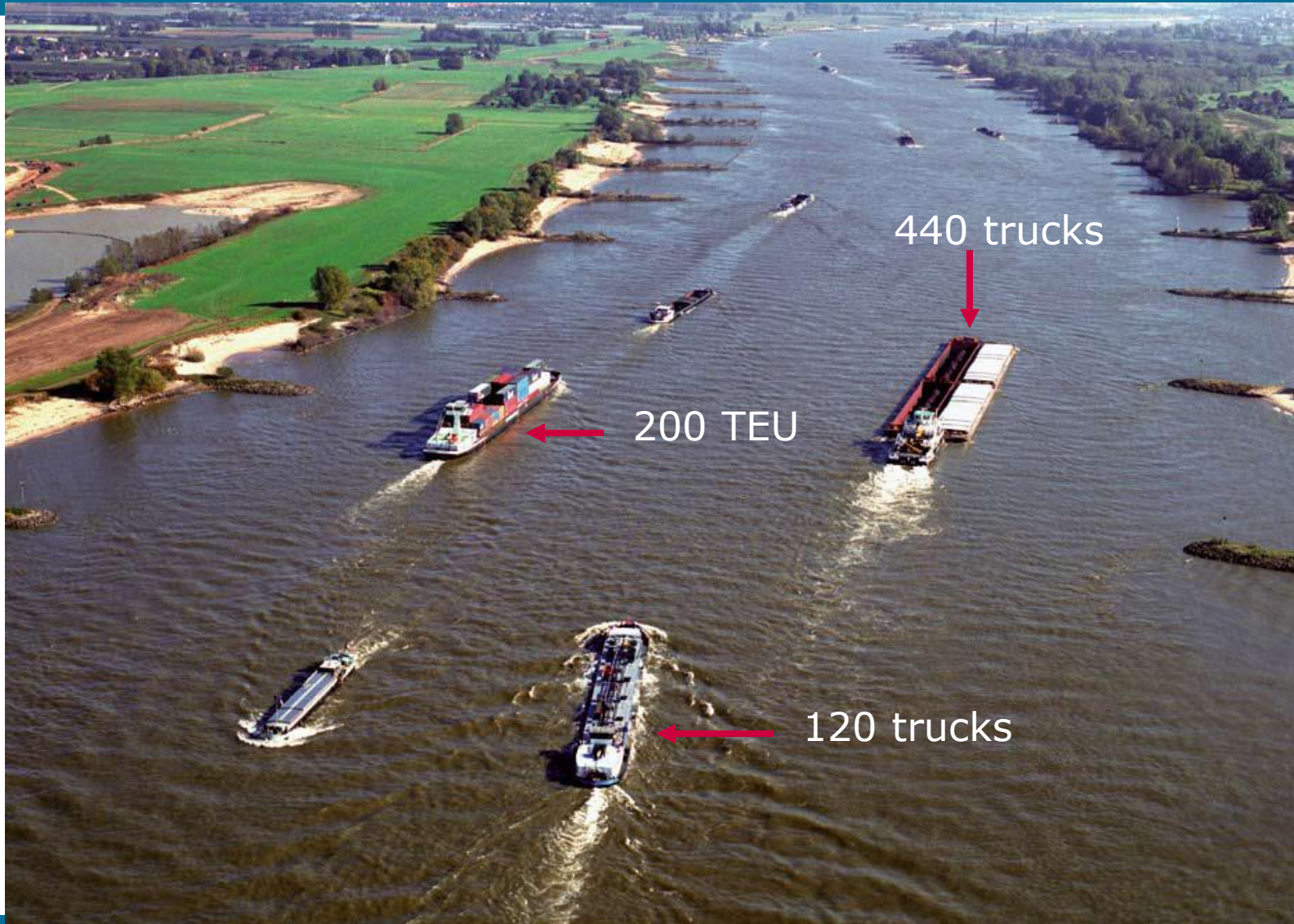
**Containership "JOWI": 470 TEU**

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# Policy goals for waterways in the Netherlands (1)

**Main goal:** enable reliable, efficient, sustainable and safe transport

**Instruments:** maintenance, traffic management and upgrading of infrastructure

**Maintenance and traffic management: € 400-500 mln a year**

- Regular maintenance
- Replacement investments
- Operating locks/bridges and guiding traffic



## Policy goals for waterways in the Netherlands (2)

### **Upgrading: € 100-200 mln a year**

- Locks: reduce waiting times
- Waterways: improve accessibility large ships
- Berths: enough places to moor and rest
- Bridges: enable efficient container transport
- Inland ports: promote and support enough quays and ports
- Recreational yachts: separate lanes



# Capacity bottlenecks

- ..... Zeetoegangsgew
- Hoofdtransportas
- Hoofdvaarweg
- ..... Zeecorridor
- Overige vaarweg
- ⊞ Capaciteitsvraagstuk sluizencomplex
- Capaciteitsvraagstuk vaarwegprofiel
- Capaciteitsvraagstuk ligplaatsen
- Verkeerscheidingsstelsel





# Dutch approach to infrastructure-solutions

## **Organization:**

- Policy division (DGB)– Implementation division (Rijkswaterstaat)

## **Structure for analyzing problems**

1. Exploratory study: will there be a capacity problem?
2. Solution-aimed study: which solution is to be preferred?
3. Implementing the chosen alternative

## **Important aspects**

- Scenario's (economic growth and transport flows)
- Cost-benefit analysis
- Environmental studies
- Corridor planning
- Long term budgets (2014-2030)



## Infrastructure experiences on the Rhine

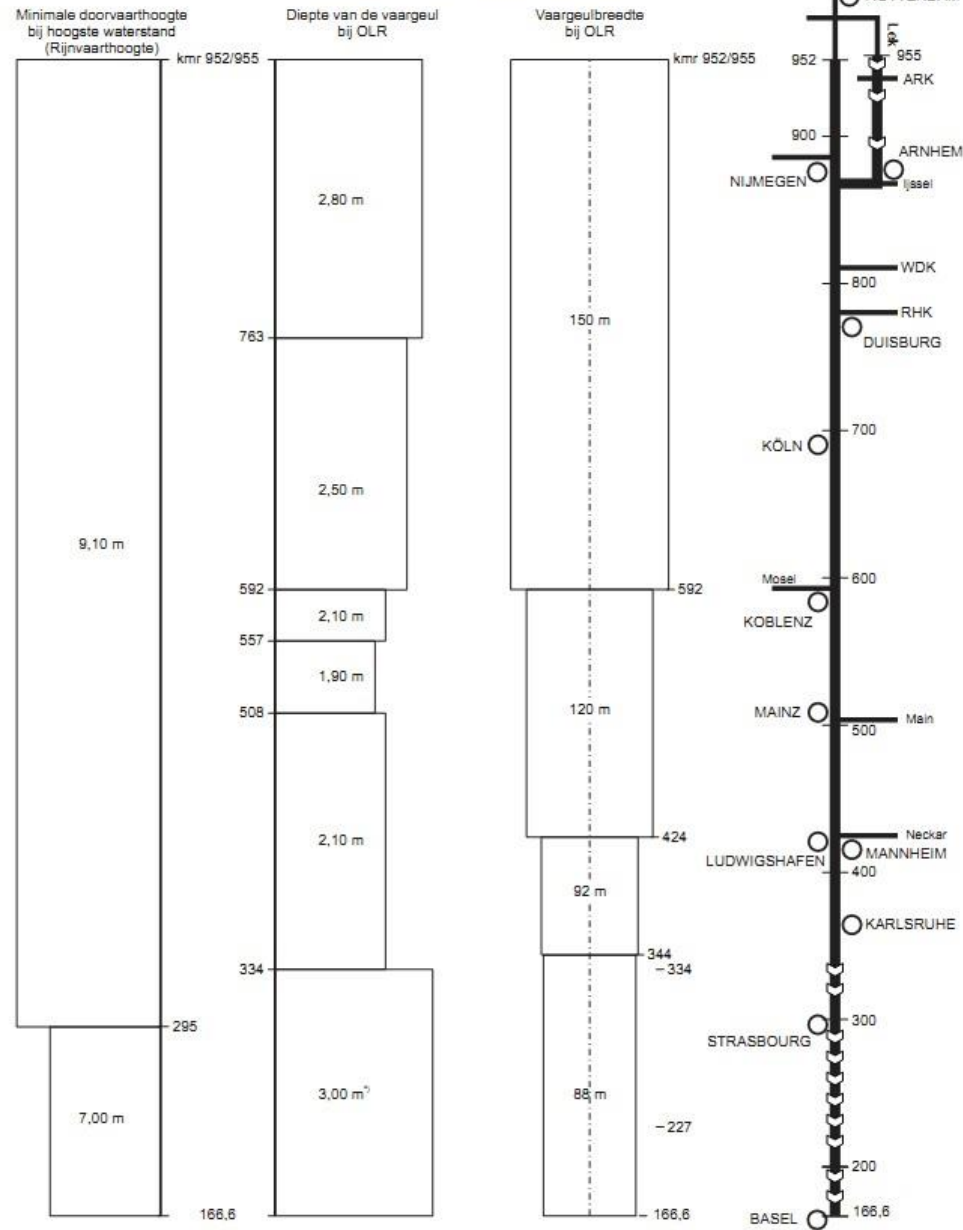
- Since 1868 clear obligation for member states to improve navigability
- Year-round navigation with internationally agreed dimensions:
  - Channel width
  - Depth at low water and OLR (Agreed Low Water Reference Level: low level for not more than 20 days per annum calculated using history of 100 years of water level statistics)
  - Bridge Clearance at high water levels

## General Principles for inland navigation

- Minimum depth 2m is required for inland navigation
- Minimum bridge clearance 5,25/7,00/9,10 for 2/3/4 layers of containers acceptable for rivers but not for canals

# VAARWEGPROFIEL VAN DE RIJN

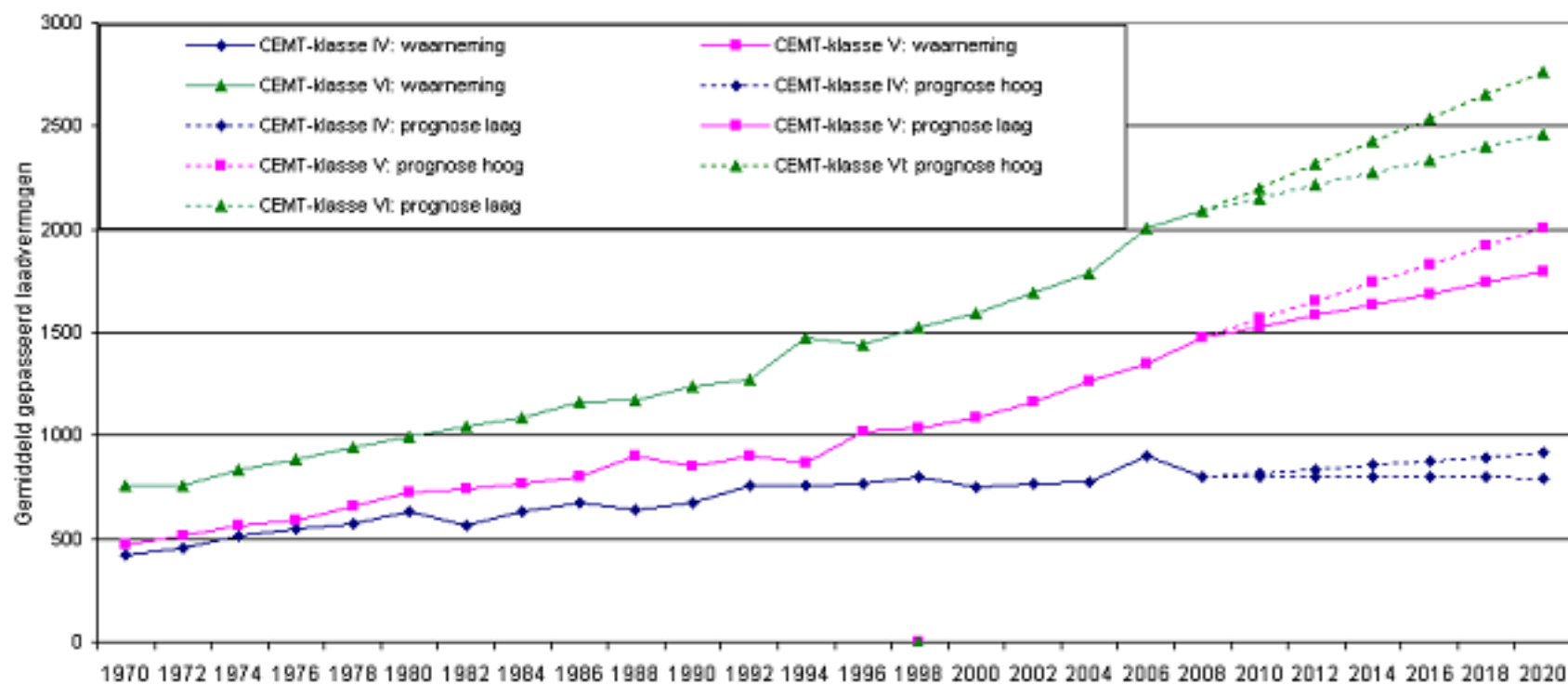
Waterwegprofiel van de Rijn (CCR december 2009)



Bron: <http://www.informatie.binnenvaart.nl>



# Developments in average vessel sizes







# Planning Proces Infrastructure the Netherlands

Phases required by spatial planning legislation

- Exploration study (why?)
- Masterplan (What and How)
  - Covernote
  - Environment Impact Analysis
  - Principle Alignment Waterway Decision
- Realisation

Stakeholder involvement in every phase mandatory



## Zuid-Willemsvaart Den Bosch

- 1919



- 2005

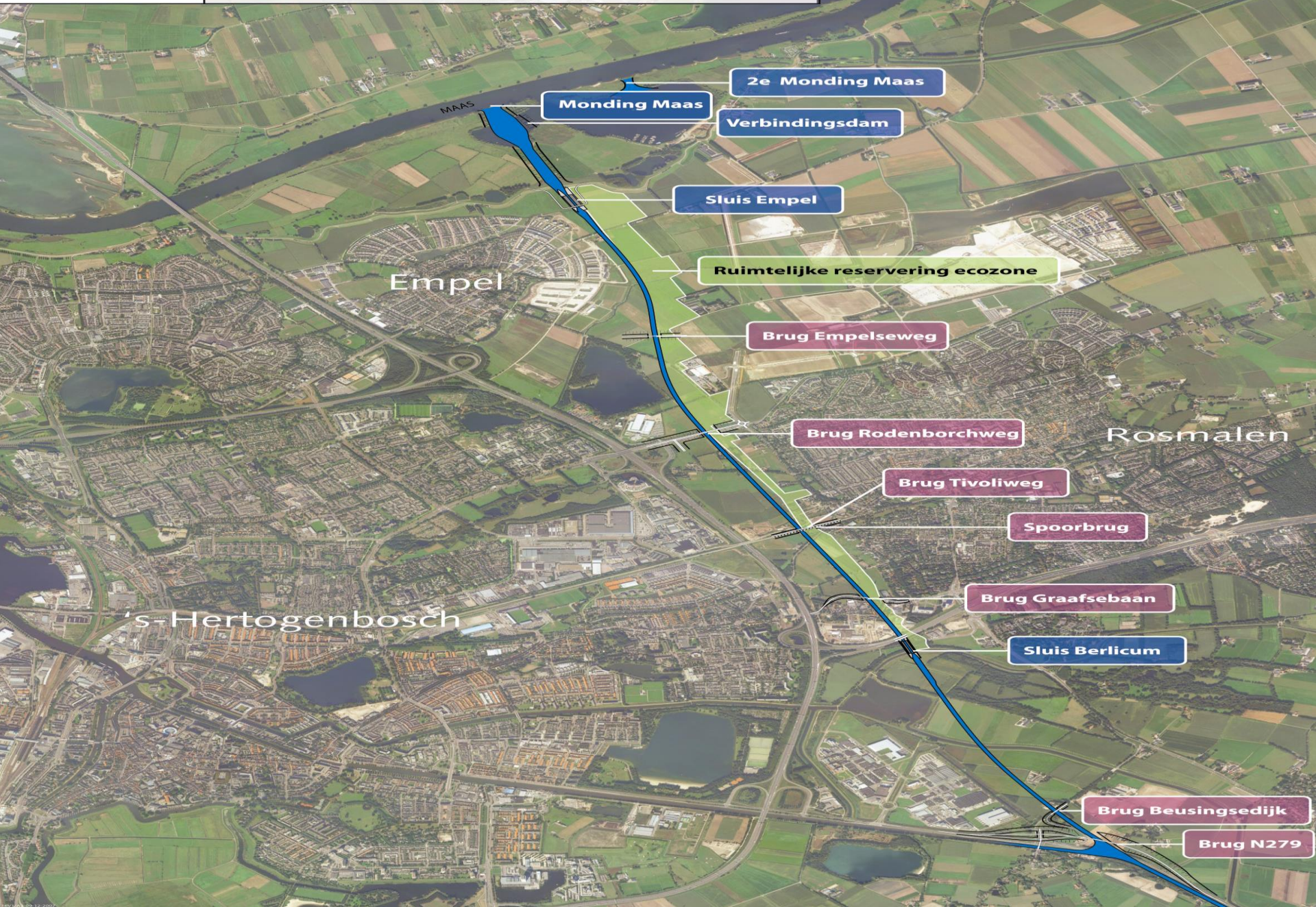




## Situation 2010 Den Bosch











# Canal Park

(along waterway  
Willemsvaart/Maximakanaal)  
= mitigating project

- Ecologic connection.
- Public accessible park.



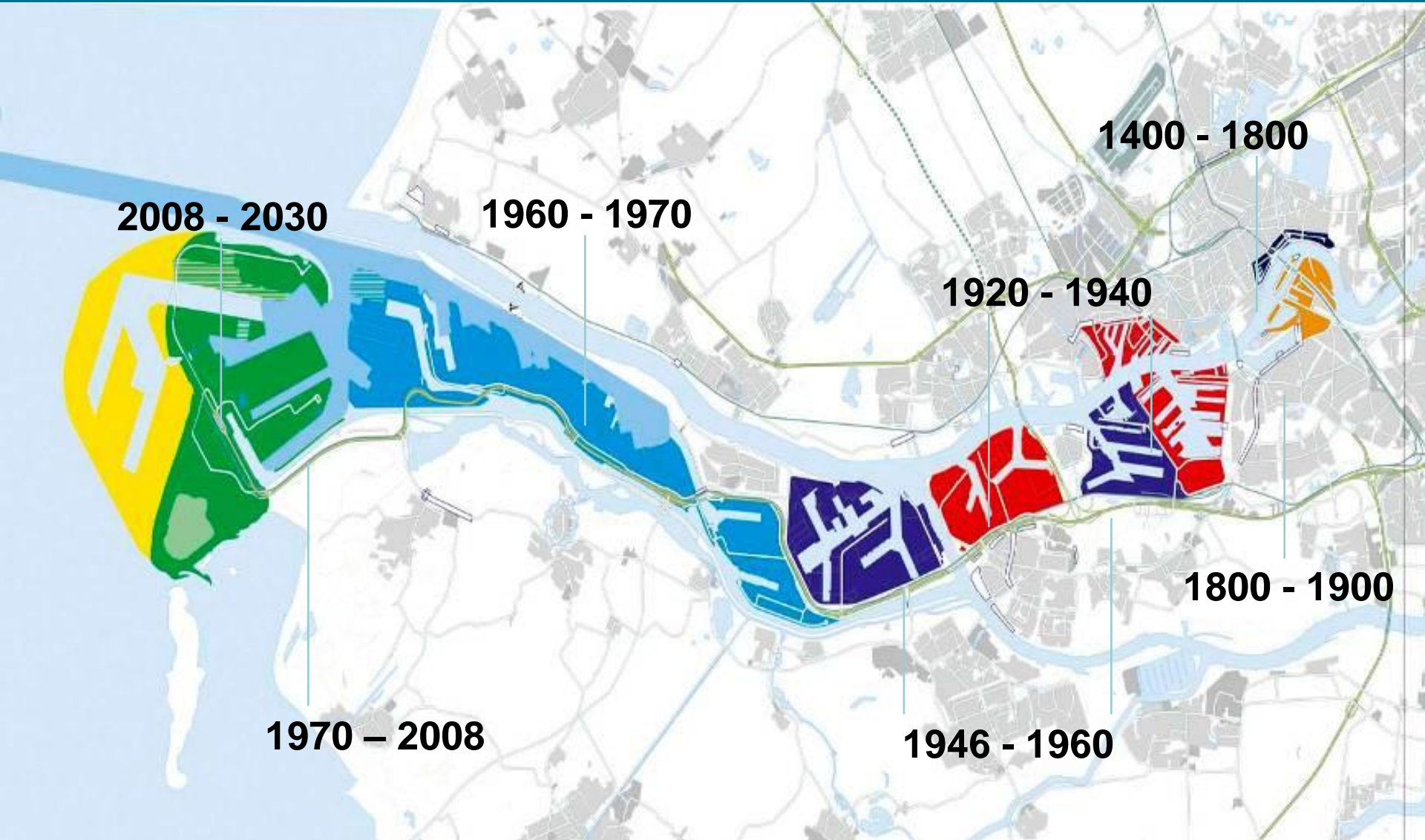






# Larger Projects





# Maasvlakte 2





Europoort







# Infrastructure planning

- Smaller Projects: Zuid Willemsvaart
- Larger Projects: Port of Rotterdam, Maritime Locks
- Very large projects E-30, E-40, E-70

Thank you for your attention