



Basic Principles of Land Use Planning

Land use planning and its objectives
How to take risk into account in land use planning

Frans Timmerman
Senior policy adviser
Ministry of Infrastructure and Environment
Netherlands

Land use planning

- Land-use plans for built-up areas and non-built-up areas
 - approval and regulation of use of land
 - basis for licensing construction and use of land, buildings, installations and infrastructure
- Based on a body of legislation

Objectives of land use planning

- Quality of living
 - Combination or segregation of activities, with mutual distances based on compatibility and accessibility
- Economic performance capability
 - Space for infrastructure, high quality locations for economic activities, etc.
- Two approaches:
 - Minimum requirements (legislation)
 - Social optimum (strategic plans and projects)

Land use planning and risk: theory

- Risk sources
 - locations (production and storage of hazardous substances)
 - infrastructure (transport of hazardous substances)
- Localised risk (individual risk)
 - limit values, safety zones, contours
- Group risk (probability of disaster/disruption of society)
 - orientation value, area of attention, impact analysis

The Dutch Experience

Important goals of land use planning:

- leverage the city as a driver of economic growth
- create centres of activity at urban transport nodes (e.g. terminals for high speed rail passenger transport)



- Focus on transport of hazardous substances (roads, railways and waterways) in urban areas
- Bottlenecks particularly in rail transport:
 - routes through high-density urban areas
 - strong growth of transport

Principles for a balanced approach

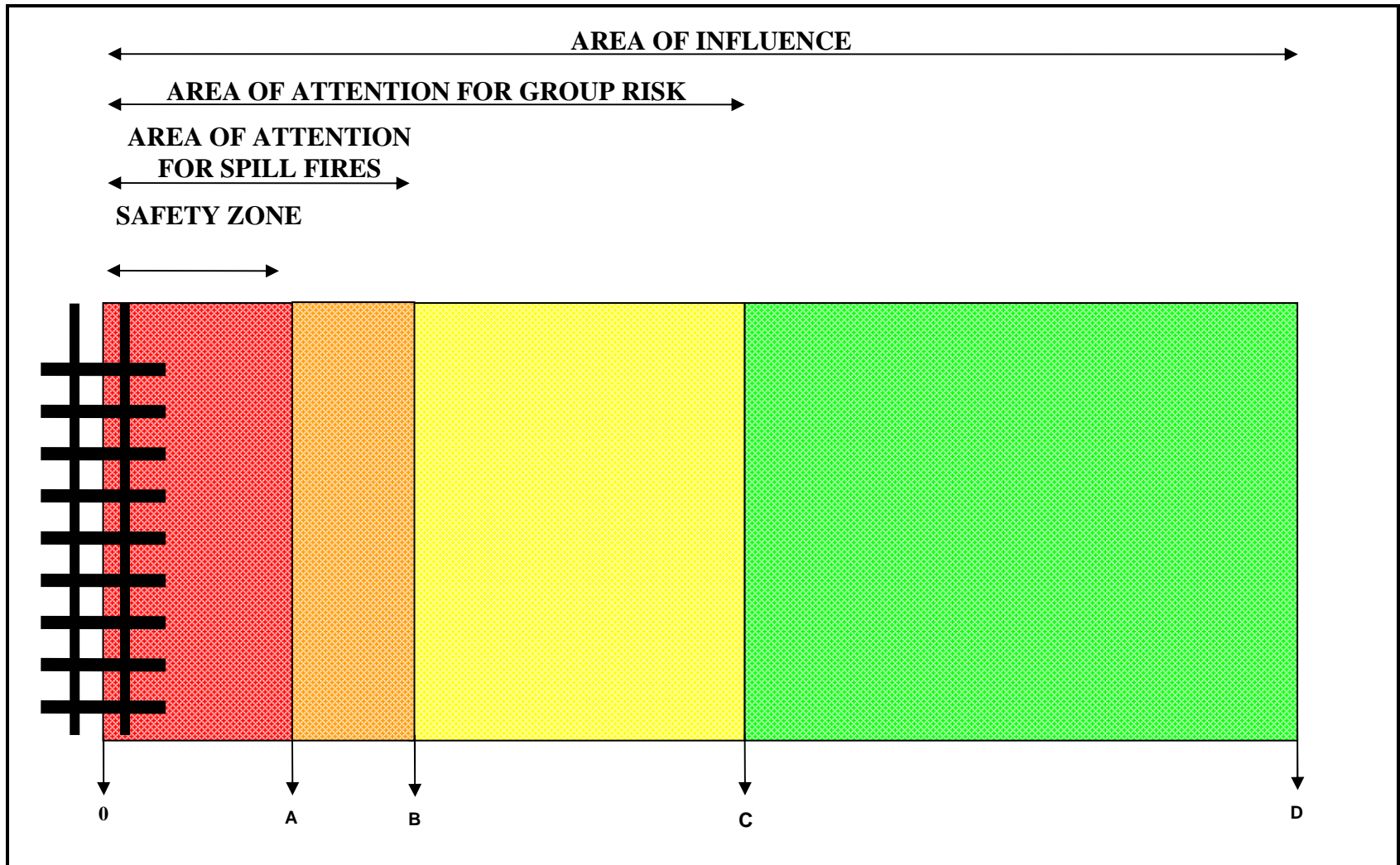
- Take measures at source and on the city side
- Take preventive measures, not just zoning
- Accommodate growth of transport
- Offer space for urban objectives
- Ensure clarity on both sides

Basic network for transport of hazardous substances (under preparation)

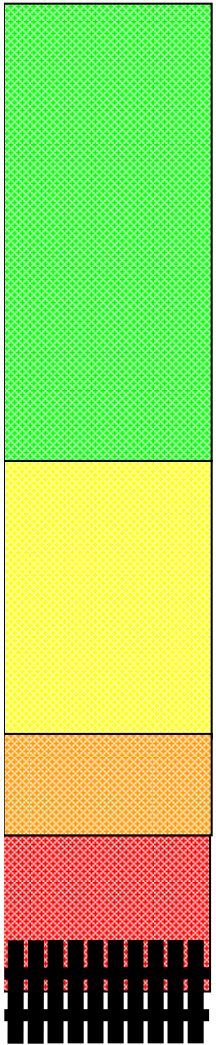
Optimise routes in the national railway network

- Zoning will be laid down for each transport route and included in land use plans
- A maximum usage space will be laid down for transport operators, for inclusion in
 - capacity allocation by the manager of the railway network
 - monitoring programme
 - directives for transport operators (if necessary)

Zoning in land use plans (1)



Zoning in land use plans (2)



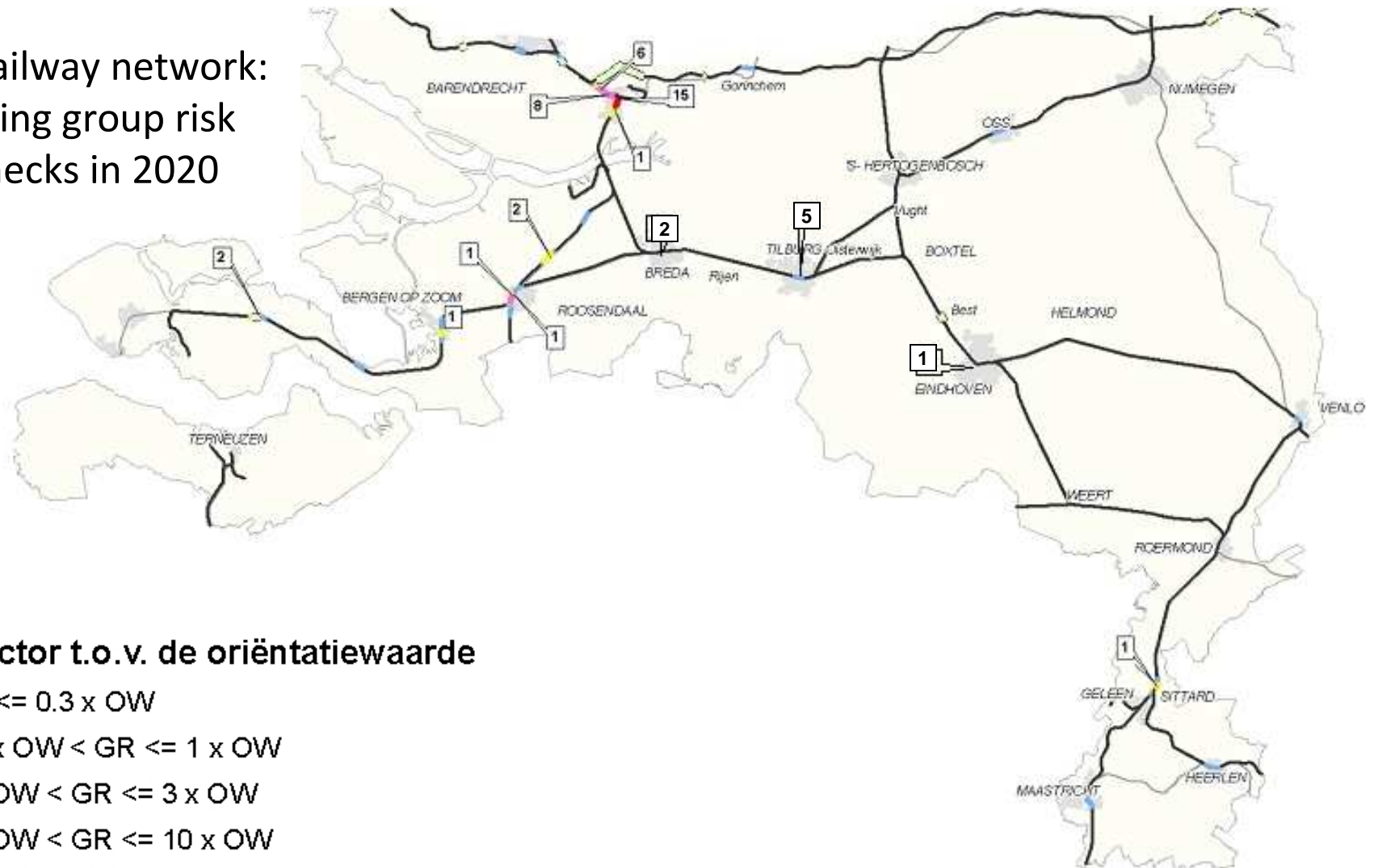
Group risk impact analysis:

- insight into the nature and scale of the risk
- careful weighing up of spatial considerations
- basis for preventive measures

Safety zone within the contour of the localised risk:

- ban on new building
- removal of existing buildings if necessary

Basic railway network:
remaining group risk
bottlenecks in 2020



GR als factor t.o.v. de oriëntatiewaarde

- $GR \leq 0.3 \times OW$
- $0.3 \times OW < GR \leq 1 \times OW$
- $1 \times OW < GR \leq 3 \times OW$
- $3 \times OW < GR \leq 10 \times OW$
- $GR > 10 \times OW$