

Lowering transport risks with the basic network: An adequate institutional shift or an insufficient change?

PSAM 9, Hong Kong

Mr. A.V. van der Vlies & **Dr. S.I. Suddle**

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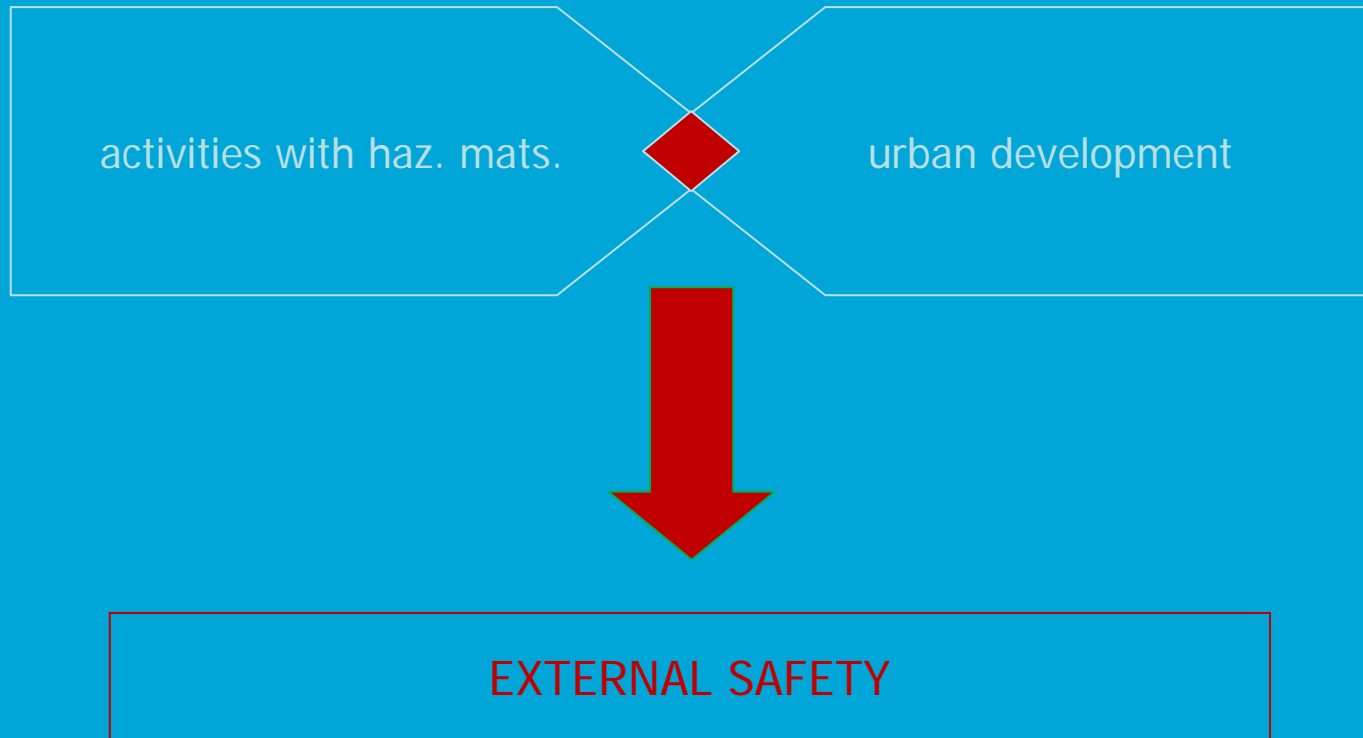
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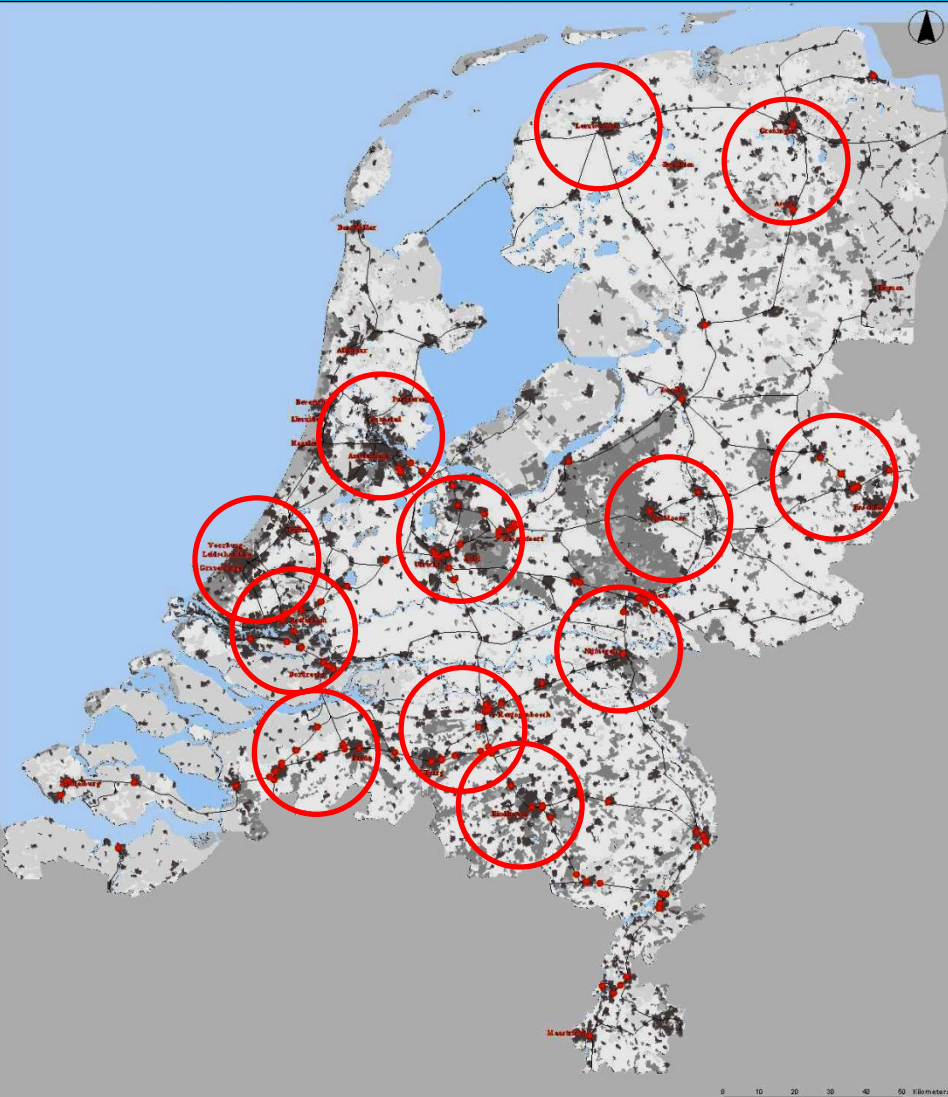
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- Transport risks & Dutch Risk Policy
- The Basic Network
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Introduction

Increase of intensive use of space & production, storage and transport of hazardous materials





Risicoatlas Spoor

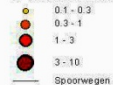
Groepsrisico

Gebaseerd op vervoergegevens 1998

Alle stofcategorieën

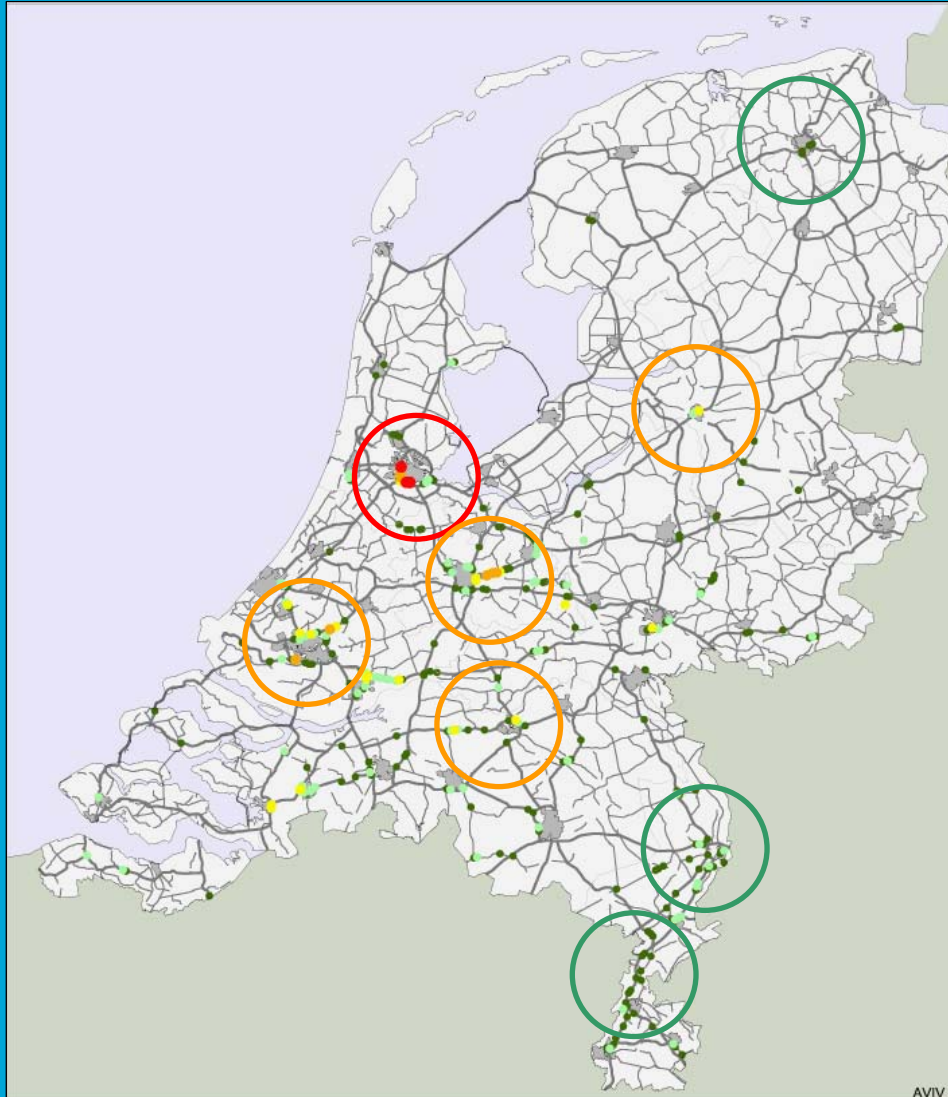
Adviesdienst Verkeer en Vervoer

Groepsrisico ten opzichte van de oriënterende waarde



Rail

Schaal: 1 : 1 000 000



Groepsrisico, afstand tot de oriënterende waarde (OW)

- Meer dan 10 maal de OW
- 3 tot 10 maal de OW
- 1 tot 3 maal de OW
- 0.3 tot 1 maal de OW
- 0.1 tot 0.3 maal de OW

Wegenstructuur

- Rijkswegen
- Provinciale wegen

Roads

AVIV 2

Resultaten groepsrisico

Don't forget: installations, water infrastructure & pipelines



Dutch External Safety Policy

External Safety

Protection of
(one) single individual

Distance between
the risk generator
and the individual

Individual Risk

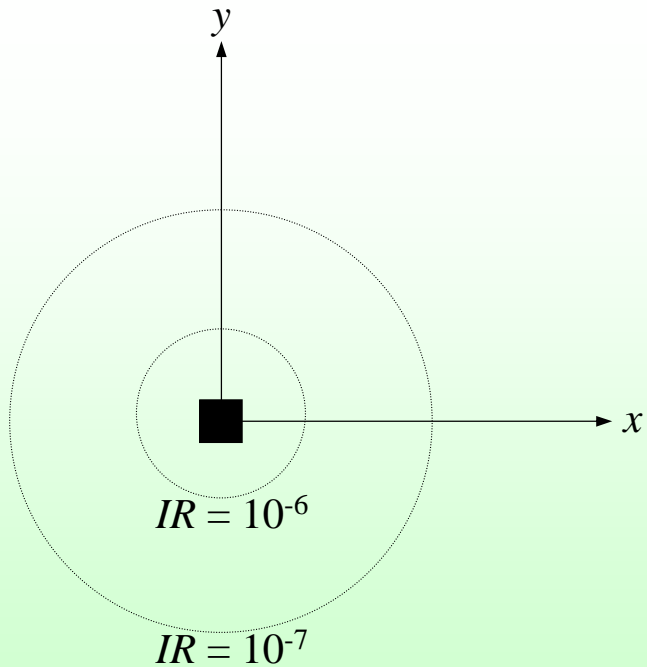
Protection of
multiple individuals

Small probabilities for
social disruption by big
disasters

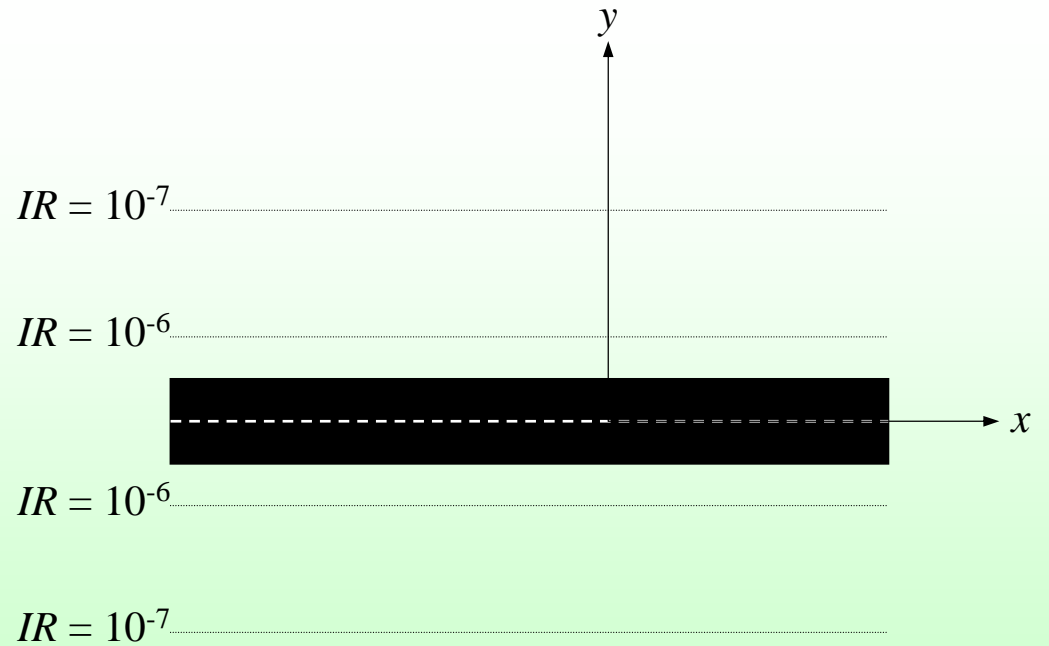
Group Risk

Apply to regulations of urban development and environment

Individual Risk (PR)

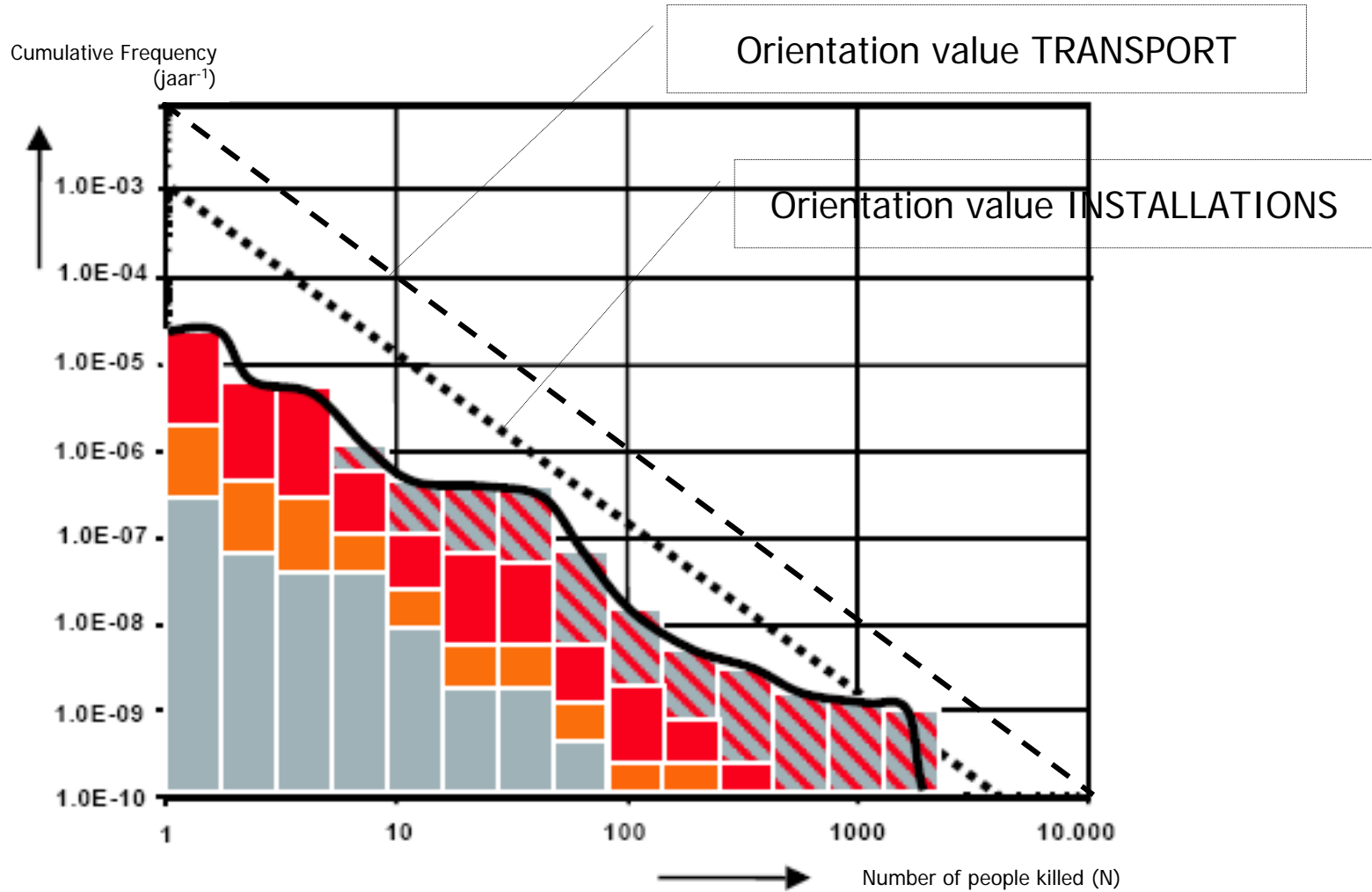


installation



infrastructure

Group Risk (GR)



Basic Network

- The basic network offers authorities an easier to use *framework* for external risk policy as well as an easier framework to analyse at the municipal level the possibilities for urban development and communicate risks to civilians from an external safety policy perspective.
- Streamline processes of new urban development near transport routes of HAZMAT

→ *Still a number of disadvantages*

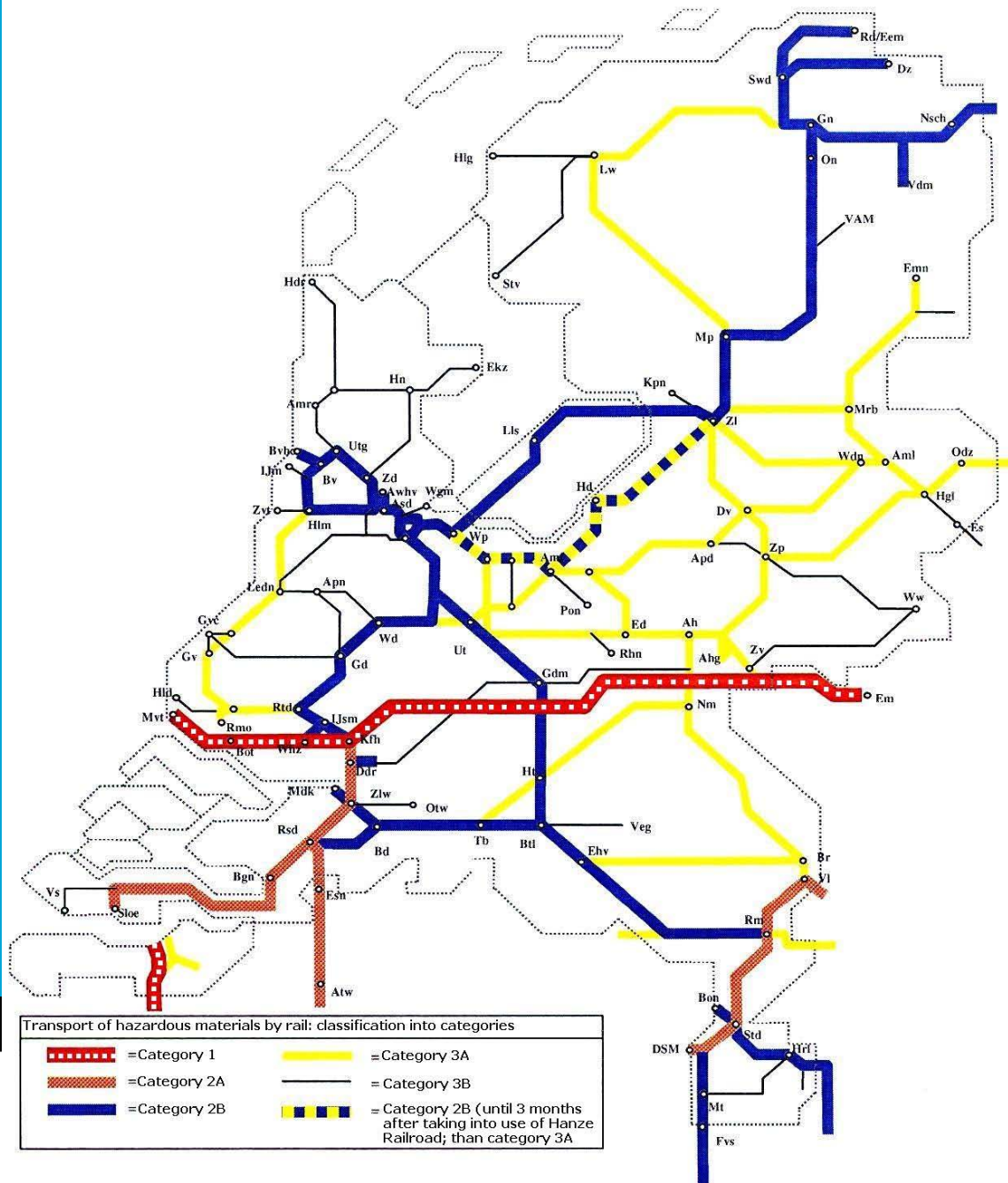
Basic Network

Three categories of transport routes of hazardous materials:

- Primary routes (safety zoning)
- Secondary routes
- Tertiary routes

Category	Transport of HAZMAT	URBAN DEVELOPMENT
1	Unlimited	Limited
2	Limited	Limited
3	Limited	Unlimited

Basic network for the transport of hazardous materials by rail (provisional)



Basic Network

Type of the transported hazardous material	Hazard Identification Numbers (Kemler Codes)	Allowed amount of tank wagons transported per year:		
		Category 2A railways	Category 2B railways	Category 3A railways
Flammable gasses (Matter category A)	23, 263, 239	12500	2500	350
Toxic gasses (Matter category B2)	26, 265, 268 (except for UN 1017, Chloride gas)	6600	5400	1250
Highly toxic gasses (Matter category B3)	268 (in this case UN 1017, Chloride gas)	0	200	0
Highly flammable liquids (Matter category C3)	33, 33*, X33, 336 (except for UN 1093, Acrylonitril).	5000	4000	1250
Toxic liquids (Matter category D3)	336 (in this case UN 1093, Acrylonitril).	15500	6300	1200
Highly toxic liquids (Matter category D4)	66, 663, 668, 886, X88, X886	1500	750	750
Maximum allowed quantities transported on railway tracks per year per category for the Basic Network				

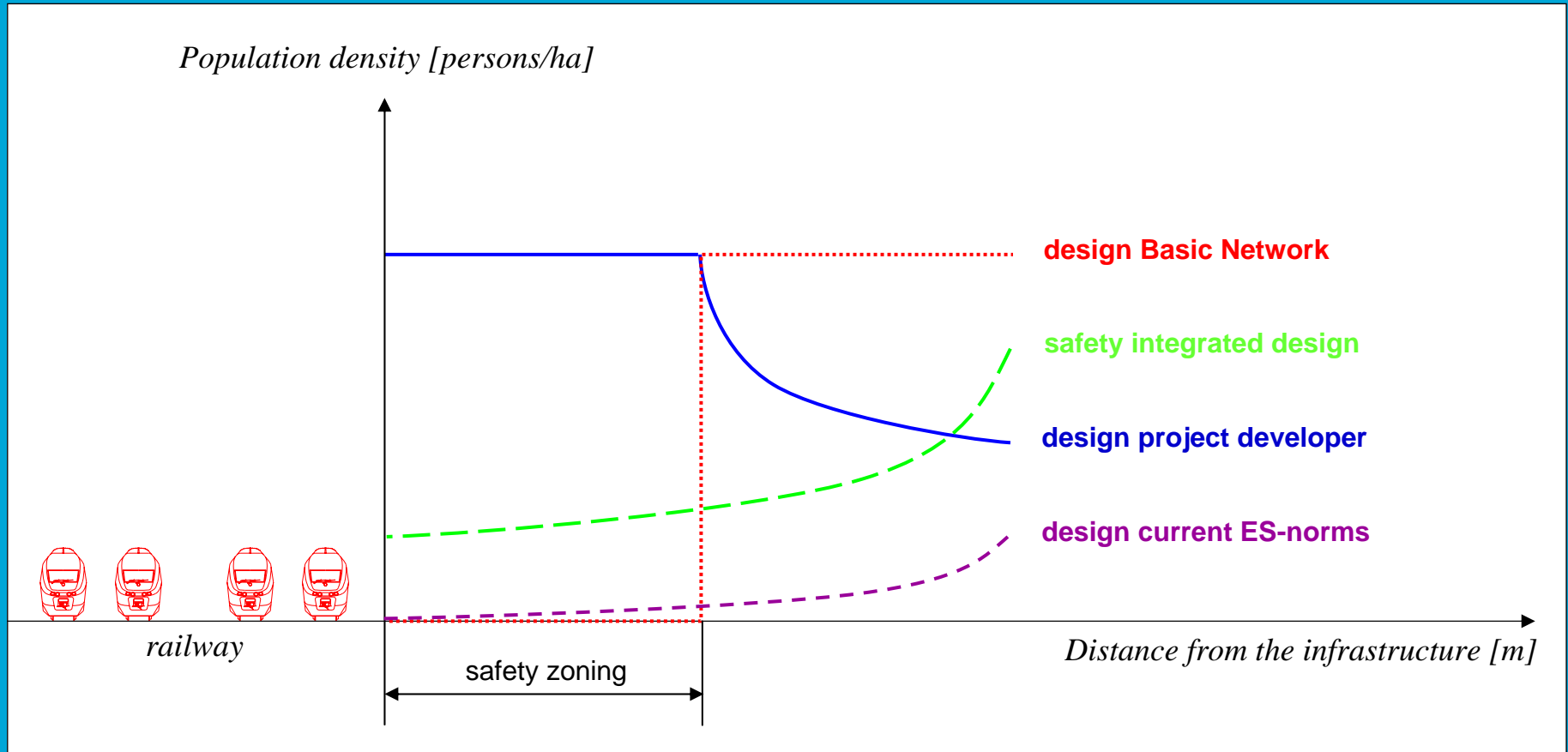
Feasibility of the measures

- International institutions (directives, legislation) form the starting point for the basic network
 - International Transporters are free to transport their goods
- Market expectations on which the basic network is based are already out of date
- Group risk considerations should still be made
- Permanent amelioration of safety is not embedded in the decision-making process
 - National government demands standards (higher safety) is contradictory to European directives

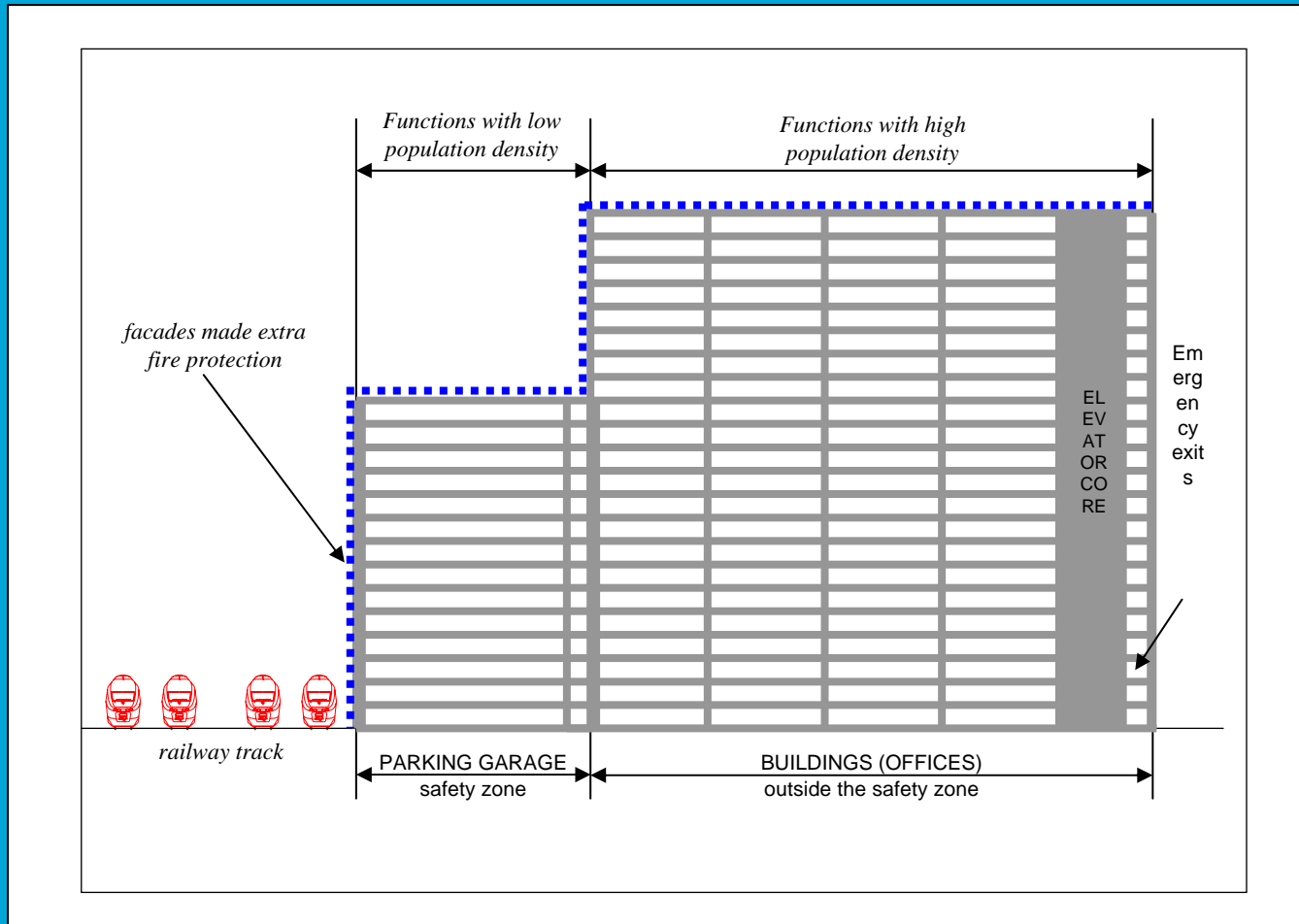
Challenges

- Safety integrated Design Engineering
- Cost-effectiveness of safety measures
- A new institutional framework...

Urban Development versus External Safety / Safety zoning



Safety Integrated Design Engineering



Conclusions

- Basic Network has problems surrounding the feasibility
- Challenges to overcome before Basic Network can serve as a real solution for risk problems
- Responsible (local) authorities, i.e. urban planning, may have an influence on the Basic Network
- Safety Integrated Design Engineering must be a part of the Basic Network

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