

SPINTRENDS – SPACE AND INFRASTRUCTURE TRENDS

Collaborative Planning of Infrastructure and Spatial Development

Topic A: Exploring effective approaches for future-proof road networks based on trends in mobility and spatial development

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BACKGROUND

Topic A: Exploring effective approaches for future-proof road networks based on trends in mobility and spatial development

- **much information** on this topic is already **available**
- there **is a lack of combination of this information** on future trends and measures/concepts for effective approaches to handle them
- focus on **providing insights on trends** in mobility and spatial development as well as innovative measures/concepts

APPROACH

The research in SPINTRENDS is built on one basic idea:

$$\text{managing road networks (NRA)} + \text{managing demand of the future (spatial planning)} = \text{effective and future-proof road networks}$$

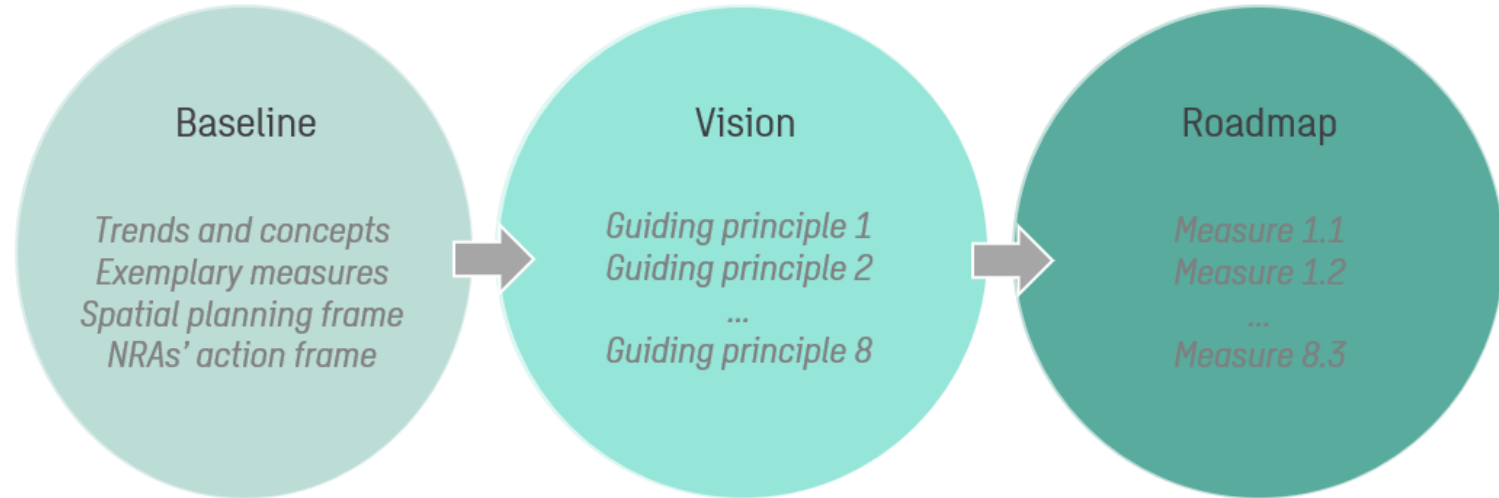
This is accompanied by two hypotheses:

- the application of innovative measures/concepts will lead to robust road networks
- cooperation with other parties will be essential for future-proof road networks

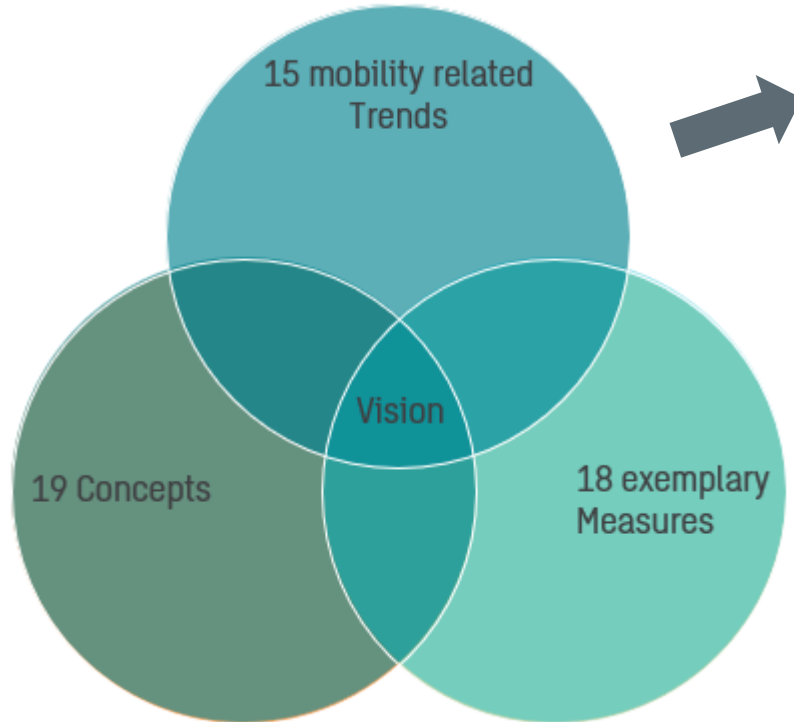
KEY RESULTS

- **KR1: Overview of future trends** in mobility and spatial development
- **KR2: Overview of innovative measures/concepts** to deal with growing mobility demand
- **KR3: Vision** to support NRAs in their decision-making about managing their networks and influencing demand
- **KR4: Roadmap** that clarifies the route towards collaborative planning for future-proof road networks
- **KR5: Disseminating the results**

METHODOLOGICAL APPROACH



VISION DEVELOPMENT



Technology	Behavior
Alternative Fuels Autonomous and Connected Driving Integrated Traffic Management Using digitalization for mobility concepts Maintenance, renovation and renewal	Urbanization Active modes of transport Multi-modality (passenger transport) Synchro-modal logistics
New economies	Sustainability & social equality
E-commerce Circular economy	Demographic changes Social inclusion Changes in labor market Environmental awareness, climate

- (1) Collection of trend information
- (2) Preparation of a catalogue of trends
- (3) Compilation and preparation of a structured overview of trends
- (4) Screening of innovative, generic concepts
- (5) Preparation of a catalogue of concepts
- (6) Assessment and highlighting of successful solutions

VISION FOR THE YEAR 2040

By 2040, NRAs in Europe are not merely network maintainer, network operator or network manager but key players in enhancing regional competitiveness and livability in a region. Transport is understood as a link between the functions of living, working and recreation and not as an end in itself.

[...]

Nowadays, NRAs not only stand for transport but for people-centric transport which is multimodal, shared, accessible, CO₂ neutral, flexible, safe, coordinated and efficient.

[...]

Collaborative planning together with other modalities and spatial authorities leads to a synergetic mix between the network performance of the NRA, the multi-modal connectivity of a functional urban area and the spatial development of a specific location.

[...]

8 GUIDING PRINCIPLES



Guiding principle 1 on own scope

Altered self-conception makes NRAs proactive contributors to compact and integrated spatial structures through cooperation with others.



Guiding principle 2 on the partner network

Integrated infrastructural and spatial development through close cooperation between NRAs and other modalities and spatial authorities.



Guiding principle 3 on policy

European standards for partnerships in the transport sector, policy frameworks and data exchange between different public authorities.



Guiding principle 4 on infrastructure

A transport system that is people-centric, seamless and efficient.



Guiding principle 5 on replication

Speed-up change processes by utilizing synergy effects and through replication.



Guiding principle 6 on public awareness

Mobility choices that are affordable, suitable and elaborated with the participation of the general public.



Guiding principle 7 on service provision

Transport services that are measured against accessibility and user satisfaction.



Guiding principle 8 on sustainability principles

Sustainability in every step of the production cycle, procurement and infrastructure development.

MEASURE ASSESSMENT

35 measures have been identified to address the vision. These were assessed by experts based on the following criteria:

- time scale: short-, mid-, long-term (ST, MT, LT)
- priority (in the implementation): the higher the priority the higher the ranking (positive; scale 0 to 5)
- impact (of the measure on overall system): the higher the positive impact the higher the ranking (positive; scale 0 to 5)
- complexity of implementation (actors involved): the more to involve the higher the ranking (negative; scale 0 to 5)
- initial costs: the higher the costs the higher the ranking (negative; scale 0 to 5)
- maintenance costs: the higher the costs the higher the ranking (negative; scale 0 to 5)
- **11 measures have been prioritized** based on the expert assessment



short-term



M1.1

Looking for win-win situations: embed new concepts for collaborative planning into existing processes and structures within NRAs



M4.5

Cross-modal impact assessment of infrastructure measures (modal shift, CO₂ calculations, etc.)



M4.4

Definition of interface between infrastructure planning and spatial planning strategies



M5.1

Usage of existing NRA networks and profit from the ideas and practices of others in the implementation of automated and connected transport



M6.1

Communication of limited free capacity on road network (due to existing/predicted traffic volume) to potential road users to stimulate a shift in mode choice behavior

mid-term



M3.5

Development of a comprehensive land use framework incorporating the relation to transport



M4.3

Provision of infrastructure for shared mobility options



M1.3

Development of educational strategies and learning networks for the employees of NRAs to foster collaborative approaches



M5.3

Facilitation of replication of best practices through collaboration with other authorities as well as other NRAs



M6.2

Improvement of the visibility, accessibility and experience of new services by promoting transport alternatives to the broader public



M8.3

Avoidance of demolition of existing road infrastructure where possible; reuse of infrastructure and upgrading



THANK YOU!

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