

Terms of reference 2024–2028

Terms of reference has been approved by the NVF board on 12th of March 2024



Working groups - 1st July 2024

Bridges	Operation and Maintenance	Nordic Construction Market	Road Design	Road Freight Transport	Road Technology	Road Traffic Safety	Tunnels	Urban Transport and Transport Planning
Theme: Climate and environment					Finland			
Norway	Denmark	Sweden	Finland	Denmark	Iceland	Norway	Iceland	Sweden

Bridges

A working group will be established to exchange experience in construction and operation of bridges and to plan bridge seminars. The working group should address the following matters:

a) Climate Bridge construction and maintenance face still greater demands for climate and environmental management.

- Experience obtained in the use of climate and environmental models, including models for CO2 footprint, from bridges (both construction and maintenance).
- Reductions and models for preparing baselines.
- How CO2 is calculated in the various models, and how choice of materials and optimization of design may help reduce the CO2 footprint of structures.

b) Digitization

- Knowledge about the potentials of digitization and the specific experience of the sector regarding digitization of the construction and maintenance of bridges.
- Using sensor technology and artificial intelligence, artificial intelligence used for condition assessments and risk-based maintenance.
- The digitization within bridge maintenance and exchange experience in online condition assessments.

c) Asset management

- The experience in asset management of 'bridge' assets with focus on how best to maintain the value and functionality of bridges.
- Share knowledge about Asset Management processes.

Norway is the leading country

Relevant competence profiles:

Road and bridge engineers, researchers, etc.

Knowledge sharing and communication of best practices: Webinars, seminars,

workshops, work group meetings

Common theme: Climate and environment

Relevant UN global goals:

- Choose 1-2 UN global goals

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Follow-up on sustainable development goals: The group will make proposals for follow-up on the sustainable development goals in autumn 2024.

The group may consult the work which the NVF working group undertook during the previous four-year period.

The group will discuss these terms of reference at their first meeting and may propose adjustments to it. The adjustments must be approved by the NVF Board.

Operation and Maintenance

A working group will be established to exchange experience in operation and maintenance and will deal with i.e., the following matters:

- a) Winter operation
 - Key figures and market statistics, continues, updating the common Nordic statistics about winter services
 - Contracting / procurement, incl. dynamic salting, existing knowledge about winter services, effective maintenance and operations
 - How can winter services become more sustainable, incl. in connection with recovery and recycling, transport and spreading of salt as well as snow clearing?
 - Winter maintenance for pedestrians and cyclists
 - Digitalization and predictive maintenance, incl. use of data from vehicles, mobile sensors, AI, etc.
 - Electrification of Winter Operation
- b) Asset management focusing on other assets (not structures and surfacing)
 - Relevant data for maintenance, incl. lifetime, replacement intervals, etc.?
 - How to prioritize across assets?
 - Benchmarking of Asset management systems in the Nordic countries.
- c) Climate and resilience
 - How to prepare for natural phenomena in maintenance? How to react in contracts and in practice to different kind of winters (equipment requirements, forecasting)?

Denmark is the leading country

Relevant competence profiles:

Consultants, researchers, contractors and employees in government and municipal road administrations who work with operation and maintenance. Road weather experts inc. meteorologist

Knowledge sharing and communication of best practices: Webinars, workshops, seminars, working group meetings

The group may benefit from exchanging ideas with the working group for 'Road technology'.

Common theme: Climate and environment

Relevant UN global goals:

- Choose 1-2 UN global goals

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Follow-up on sustainable development goals: The group will make proposals for follow-up on the sustainable development goals in autumn 2024.

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Nordic Construction Market

A working group will be established to exchange experience of using new forms of contracts and of the opportunities this experience offers the Nordic construction market. The working group should address the following matters:

- a) New contracting formats (e.g., relational contracting, negotiated procedure, early contractor involvement, IPD (Integrated Project Delivery, etc., Risk balance/risk distribution) (continues)
- b) International service provider
 - How to manage/attract, risks/opportunities
 - Common Nordic Infrastructure Market
 - Risk balance/risk distribution
- c) Sustainability requirements in procurement (UN global goals)
- d) Key figures and market statistics (continues)

Sweden is the leading country

Relevant competence profiles:

Persons specializing in procurement procedures and with business sense, representatives from clients, contractors, consultants

Knowledge sharing and communication of best practices: Webinars, seminars, workshops, work group meetings

Common theme: Climate and environment

Sustainable development goals:

Choose 1-2 relevant UN global goals

Follow-up on sustainable development goals:

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Road Design

A working group will be established to exchange experience in road design. Road design is about how you design streets and roads to consider the users' and society's interests as best as possible. The working group should address the following matters:

- a) Universal design
 - The transport system should be designed so as not unnecessarily preventing anyone from fulfilling their need for mobility, including old people, children and functionally impaired users.
 - How pedestrians and cyclists are handled in high-speed environments.
- b) Urban design
 - How to plan and design urban traffic areas and urban transits in rural areas.
 - How to incorporate many new types of vehicles in the design of urban traffic areas?
 - Problems with through traffic in smaller urban areas.
 - Roundabouts, interaction with other road users (cyclists), etc.
 - Goods delivery to ensure that the design of urban traffic areas takes the increasing need for goods delivery into account.
- c) Future requirements for road design
 - What road design is required to ensure the driver support systems function?
 - What road design and specific geometric solutions will allow automated cars on motorways, national roads and in urban areas? Knowledge about relevant road designs and new geometric solutions.
 - Requirements and needs posed by the Lane Keeping Assistance (LKA) technology in automated cars in relation to the width of lanes, which has a considerable impact on road accessibility.
- d) Climate adaptive solutions
 - Road technical solutions, how to coordinate future road design and climate adaptation solutions, such as handling torrential rain and increased amounts of stormwater.

Finland is the leading country

Relevant competence profiles:
Road engineers, researchers, etc

Knowledge sharing and communication of best practices: Webinars, seminars, workshops, work group meetings

The group may benefit from exchanging ideas with the working group 'Urban transport and transport planning'.

Common theme: Climate and environment

Relevant UN global goals:
- Choose 1-2 Un global goals
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Road Freight Transport

A working group will be established to exchange experience of more efficient, climate-smart, safe and economically sustainable road freight transport.

The working group should address the following matters:

- a) Energy-efficient haulage on roads
 - Alternative energies and vehicle powertrains, biofuels and electrification
 - How to reduce the negative impacts of freight transport, such as emissions, road construction, noise and congestion, in relative comparison
- b) Combined transport, road infrastructure to node hubs
 - Interaction of infrastructure with other modes of transport such as rail, sea and air transport (e.g. rest areas, transshipment points, carrying capacity, terminals)
- c) Benefits of automation and digitalization
 - Better knowledge of haulage, e.g., through better data and information technology, to optimize the use of road infrastructure.
 - Vehicle technology that can make trucks more energy efficient
- d) How to promote safety on roads, vehicles and drivers
 - Heavy traffic & long vehicles and road design – challenges

Denmark is the leading country

Relevant competence profiles:

Participants from the haulage business, vehicle manufacturers, researchers, officials.

Knowledge sharing and communication of best practices: Webinars, seminars, workshops, work group meetings

Common theme: Climate and environment

Relevant UN global goals:

- Choose 1-2 UN global goals

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Road technology

A working group will be established to exchange experience in road technology. Road technology is about road materials, pavements design and road degradation. The working group should address the following matters:

- a) Sustainable approach to choose and recycling of materials in the road sector
 - Pavement and resource management (in Norway 60% recycled material in the pavements, in Sweden 25%, a need for discussions)
 - The methodologies and approaches that may support a sustainable choice of materials.
 - Recycling and reuse of roads
 - Recycling of materials and incorporation of waste products in road pavement, reduce the use of new material and the use of machines and tools that promote a sustainable choice of materials.
- b) The functional properties of the road over time
 - How to build new roads and adapt current roads with environmental changes.
 - How the road degrades and how to best measure the degradation of the road. This particularly concerns functional properties such as noise, evenness and rolling resistance.
 - Promote methods for objective measuring and to share knowledge about how to use the measurements optimally in the road maintenance systems.
 - The advantages and disadvantages of the new methods and how the introduction of new methods affects the need to replace corresponding older methods in the countries' road maintenance systems.
 - How best to measure the road's CO2 footprint and how to reduce the CO2 footprint by minimizing rolling resistance.
- Aging infrastructure, Prioritization of the road network

Iceland is the leading country

Relevant competence profiles:

Competences in pavement design, road materials and road degradation.

Knowledge sharing and communication of best practices: Webinars, seminars, workshops, work group meetings

Common theme: Climate and environment

Relevant UN global goals:

- Choose 1-2 UN global goals

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Road Traffic Safety

A working group will be established to exchange experience in road traffic safety, effective road safety measures and to provide examples of best practices. The working group should address the following matters:

- a) Different groups of road users and their needs for traffic safety
 - Behavioral review
 - Vision Zero – notice Stockholm Declaration
 - Road safety campaigns, examples of successful campaigns from the Nordic countries, particularly aimed at vulnerable -, young - or elderly road users
- b) Road safety and road design on rural and urban roads
 - What works in the individual countries and where new solutions may need to be developed?
 - Design of safe road infrastructure, examples of how the infrastructure is designed to ensure safe road user behavior.
 - Exchange of experience on the link between the condition of the road and the number of road accidents.
- c) Key figures of traffic accidents
 - Review of accident data, the differences in the statistics
 - Best practices to reduce the number of fatalities and injured persons
- d) Benchmarking: Implementing of the European Road Infrastructure Safety Management Directive in the Nordic countries
 - The situation of implementing in each Nordic country (the road agencies and communities)
 - Best practices of implementing

Norway is the leading country

Relevant competence profiles:

Road engineers, traffic engineers, police, campaign experts, traffic psychologists, researchers, etc.

Knowledge sharing and communication of best practices: Webinars, seminars, workshops, work group meetings

Common theme: Climate and environment

Relevant UN global goals:

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Tunnels

A working group will be established to exchange experience in road tunnels.

The working group should address the following matters:

a) Tunnel Technologies

- For new and old tunnels, Technical equipment for tunnels develops very quickly. There's a need to constantly be aware of the purpose of the technical installations, what safety level there should be.
- Condition and lifetime of the technology to carry out predictable maintenance
- Predict degradation and detect errors in the technical installations
- Simulation in virtual reality (digital twilling)

b) Co-operation from installation to maintenance

In order to ensure operational newly built tunnels, it is essential that operations are included in the planning of new tunnels right from the start-up phase (MKV). Experience shows that tunnels built where operations have not entered into dialogue at an early stage often require major adaptations and changes when the tunnel is handed over for operation. This is costly and time-consuming.

c) Innovation and renewal of methods and materials in tunnel construction and maintenance

- New materials and new, innovative methods and their economic and environmental consequences

d) Safety in tunnels

- Cyber security, knowledge sharing and ongoing discussions are essential to ensure a high common level of security
- Safety challenges, e.g. automated driving, alternative fuels e.g. batteries, hydrogen and gas

Iceland is the leading country

Relevant competence profiles:

Tunnel engineers, planners, road safety experts, IT and ITS competences (data engineers), researchers, tunnel safety experts

Knowledge sharing and communication of best practices:

Webinars, seminars and workshops

Common theme: Climate and environment

Relevant UN global goals:

- Choose 1-2 UN global goals
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Follow-up on sustainable development goals: The group will make proposals for follow-up on the sustainable development goals in autumn 2024.

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Urban transport and transport planning

A working group will be established to exchange experience in Urban transport and transport planning. The working group should address the following matters:

- a) Mobility strategy (national, regional and local mobility planning)
 - How transport planners may best ensure that the overall political development strategies may be integrated in the planning?
 - Mobility strategies and transport infrastructure plans where mobility is considered in conjunction with business and housing development, the development of supporting societal functions (e.g., hospitals and educational institutions) as well as climate and environmental considerations.
 - Models, processes and tools that can be applied to create strategic mobility, planning tools, forecast models, communication tools, administrative procedures and processes, economic models, etc.
 - Combined transports (road-rail-maritime) and transport hubs, where should these be located in order to create strategic mobility?
- b) Urban transport in small and intermediate size cities
 - What should be emphasized?
 - Good local examples
- c) Sustainable mobility
 - New lines in order to reach the sustainability goals.
 - Development of planning systems so that they are better able to handle requirements for economic, social, climate and environmental sustainability
 - The choice of means of transport, housing area, business areas, destination and travel times, just as various groups of individuals (age, gender, social group, etc.) have qualitative preferences.

Sweden is the leading country

Relevant competence profiles:

Planners, consultants, researchers, etc.

Knowledge sharing and communication of best practices: Webinars, seminars, workshops, work group meetings

Common theme: Climate and environment

Relevant UN global goals:

- Choose 1-2 UN global goals

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Follow-up on sustainable development goals: The group will make proposals for follow-up on the sustainable development goals in autumn 2024.

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The group will discuss these terms of reference at their first meeting and may propose adjustments to it. The adjustments must be approved by the NVF Board.

Theme: Climate and environment

A theme group will be established to exchange experience in climate and environment. The group should address the following matters:

- a) Two coordinators will be chosen. They will find a common theme about climate and environmental issues. After that they will contact all the working groups to plan a common workshop, webinar or seminar where many if not even all the working groups may have a presentation for this common theme.

Finland is the leading country

Relevant competence profiles:

Environmental and climate experts as coordinators

Knowledge sharing and communication of best practices: Webinars, seminars or workshops

Common theme: Climate and environment

Relevant UN global goals:

- Choose 1-2 UN global goals

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Follow-up on sustainable development goals: The group will make proposals for follow-up on the sustainable development goals in autumn 2024.

The coordinators will contact and discuss with all other working groups of these terms of reference and may propose adjustments to it. The adjustments must be approved by the NVF Board.