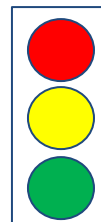


## Action plan for Working Group *Bridges*

### Plan for period 1<sup>st</sup> July 2024 – 30<sup>th</sup> June 2028

Chairperson: Southinanh Oudomphanh,  
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When doing the follow-up of the action plan, the traffic light system can be used as an indicator of work progress. Simply copy the appropriate color and place it in the title column of the corresponding year. See example below.



#### Terms of reference

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.

#### Focus Areas and Planned Actions 2025

##### Reporting and follow-up on the action plan

Focus Areas	Planned Actions	Short Report on the Completed Plans dl 1 <sup>st</sup> November 2025
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<b>Arrangement of seminars and webinars</b>	<p>2025:</p> <p>A main seminar will be planned for autumn 2025 focusing on the topics below that raise the strongest engagement within the group.</p> <p>Webinars may be arranged for lighter topics.</p>	<p>[insert text here, dl 1<sup>st</sup> November 2025]</p> <p>4 meetings with presentations</p> <ul style="list-style-type: none"> <li>- Carbon footprint of bridges by Magnús Arason, EFLA</li> <li>- Assessing the remaining useful life of concrete structures by Bruna Frydman, Arup</li> <li>- Masonry Bridges – Digital twin, FEM, model calibration and soil-structure interaction by Amirhosein Shabani, Oslo City</li> </ul> <p>2 webinars</p> <ul style="list-style-type: none"> <li>- Bridges to biodiversity by Lyubomira Vasileva, Rambøll</li> <li>- Bridge monitoring - will it solve our problems? by Heikki Lilja, HLC</li> </ul> <p>1 seminar (Finland)</p>
<p><b>Climate, digitization, and asset management</b></p> <p>Focus on following Sustainable Development Goal / Targets (see attached SDG outline)</p> <p>Target 9.4</p> <p>Target 9.5</p> <p>Target 12.2</p> <p>Target 12.5</p> <p>Target 12.7</p> <p>Target 13.2</p> <p>The focus areas are overlapping for several of the planned actions. Focus areas are highlighted in planned actions with bold text and brackets.</p>	<ul style="list-style-type: none"> <li>- Follow-up of work performed in the previous period regarding calculations of carbon footprint in bridge design. Implementation of carbon footprint calculation in construction contracts and actual effect. <b>(Climate/Digitization)</b></li> <li>- Use of new materials/new technology that helps reducing environmental impact and material use: <ul style="list-style-type: none"> <li>a) Status on use of new materials/new technology in Nordic countries <b>(Climate/Asset Management)</b></li> <li>b) Examples of applications where material use was significantly reduced or environmental impact was positive, and demonstration of models for quantification of material savings/environmental impact <b>(Climate/Digitization)</b></li> <li>c) Reuse of bridge components <b>(Climate/Asset management)</b></li> <li>d) Implementation of new materials – the role of standards and national design regulations</li> </ul> </li> <li>- Follow-up of work performed regarding the critical review of local</li> </ul>	<p>All topics were treated through presentations and exchange between all members.</p> <p>Carbon footprint implementation in contracts and actual effects</p> <ul style="list-style-type: none"> <li>• Carbon footprint of bridges by Magnús Arason, EFLA</li> <li>• Bridges to biodiversity by Lyubomira Vasileva, Rambøll</li> <li>• How can Trafikverket reduce environmental impact and carbon footprint using contract requirements? by Jacob Vennberg, Trafikverket</li> <li>• Construction and lifecycle emissions of small concrete bridges according to Väylävirasto's typical designs for frame and slab bridges (bridge length &lt;25 meters) by Kasper Pirttikoski, Rambøll Finland</li> <li>• LOKI – Icelandic CO2 calculator for infrastructure projects. Introduction to the tool and the Icelandic Road and Coastal Administration's goals for implementation by Andri</li> </ul>

	<p>design regulations with regards to overdesign and excessive material consumption.</p> <p>Conservativeness/robustness vs. overdesign and increase of material use:</p> <p>a) Effect of next generation Eurocode. Status and assessment of impact on bridge design <b>(Climate)</b></p> <p>b) Implementation and adjustment in national design regulations <b>(Climate)</b></p> <p>c) Advanced tools leading to optimization and/or giving insight in material savings <b>(Climate/Digitization)</b></p>	<p>Gunnarsson, EFLA and Einar Óskarsson/Guðmundur Valur Guðmundsson, <i>Vegagerðin</i></p> <p>Use of new materials/technologies to reduce environmental impact</p> <ul style="list-style-type: none"> <li>• Status on use in Nordic countries</li> <li>• Examples of application</li> <li>• Reuse of bridge components</li> <li>• Role of standards and design regulations</li> <li>• Assessing the remaining useful life of concrete structures by Bruna Frydman, Arup</li> <li>• Masonry Bridges – Digital twin, FEM, model calibration and soil-structure interaction by Amirhosein Shabani, Oslo City</li> <li>• Bridge monitoring - will it solve our problems? by Heikki Lilja, HLC</li> <li>• Advanced structural assessment of existing bridges – economic optimization and documented safety by Frederik Autrup, Rambøll Denmark</li> <li>• Challenges with reuse of bridge components by Andri Gunnarsson, EFLA</li> <li>• Portfolio management for better sustainability by Arianna Minoretti, NPRA</li> </ul> <p>Last topic was not treated as it was deemed too technical and is treated by other Nordic initiatives.</p>
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Focus areas and Planed Actions for 2026		
Focus Areas 2026 Deadline 1st November 2025	Planned Actions 2026 Deadline 1st November 2025	Short Report on the Completed Plans Deadline 1st November 2026
<p><b>Climate, digitization, and asset management</b></p> <p>Focus on following Sustainable Development Goal / Targets (see attached SDG</p>	<p>Exchanging information, knowledge experience and best practices between the countries and among the members of the working group.</p> <p>- Regular meetings (approx. 5 meetings) - Webinars</p>	<p>[insert text here, dl 1<sup>st</sup> November 2026]</p> <p>Instructions: [please remove the instructions when you are finished]</p> <p>You can describe here the main up comes from the WG from this year</p>

outline) Target 9.4 Target 9.5 Target 12.2 Target 12.5 Target 12.7 Target 13.2  The focus areas are overlapping for several of the planned actions. Focus areas are highlighted in planned actions with bold text and brackets.	<ul style="list-style-type: none"> <li>- Historical bridges and how they are managed (tentative)</li> </ul> Physical/hybrid seminar (location to be confirmed) <ul style="list-style-type: none"> <li>- Spring 2026: Hybrid meeting, Gothenburg, Sweden</li> <li>- Autumn 2026: Seminar with technical tour, Norway (tentative)</li> </ul> We plan to focus on <b>asset management</b> , combined with the other themes. The following topics are suggestions. <ul style="list-style-type: none"> <li>- SHM (Structural health monitoring); examples of practical implementation, challenges with data-analysis, national guidelines ... <b>(Digitization, climate, asset management)</b></li> <li>- Reliability-based analysis of structures; national guidelines, experience from leading countries ... <b>(Digitization, climate, asset management)</b></li> </ul> BIM (Building Information Modeling); national guidelines, practical experience, BIM in asset management ... <b>(Digitization, climate, asset management)</b>	Did the WG achieve all the goals, and how? What has been done for achieving the planned actions?  Which events (seminars, meetings, etc.) has the working group organized? What was the purpose? What was achieved?  Were there that kind of successes or practices in the activities that you could recommend to other working groups as well?
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Focus areas and Planned Actions for 2027		
Focus Areas 2027 Deadline 1st November 2025	Planned Actions 2027 Deadline 1st November 2025	Short Report on the Completed Plans Deadline 1st November 2027
<b>Climate, digitization, and asset management</b>  Focus on following Sustainable Development Goal / Targets (see attached SDG outline) Target 9.4 Target 9.5 Target 12.2 Target 12.5 Target 12.7	Exchanging information, knowledge experience and best practices between the countries and among the members of the working group. <ul style="list-style-type: none"> <li>- Regular meetings (approx. 5 meetings)</li> <li>- Webinars – subjects to be determined</li> </ul> Physical/hybrid seminar (tentative location: Iceland, to be confirmed)	[insert text here, dl 1 <sup>st</sup> November 2027]  Instructions: [please remove the instructions when you are finished]  You can describe here the main up comes from the WG from this year. Did the WG achieve all the goals, and how? What has been done for achieving the planned actions?  Which events (seminars, meetings, etc.) has the working group

<p>Target 13.2</p> <p>The focus areas are overlapping for several of the planned actions. Focus areas are highlighted in planned actions with bold text and brackets</p>	<p>We are considering exchanging on the topic of strengthening and rehabilitation techniques on bridges.</p> <p>The topic would be related to all three main themes.</p>	<p>organized? What was the purpose? What was achieved?</p> <p>Were there that kind of successes or practices in the activities that you could recommend to other working groups as well?</p>
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Focus areas and Planed Actions for 2028		
Focus Areas 2028 Deadline 1st November 2025	Planned Actions 2028 Deadline 1st November 2025	Short Report on the Completed Plans Deadline 1st November 2028
<p><b>Climate, digitization, and asset management</b></p> <p>Focus on following Sustainable Development Goal / Targets (see attached SDG outline)</p> <p>Target 9.4 Target 9.5 Target 12.2 Target 12.5 Target 12.7 Target 13.2</p> <p>The focus areas are overlapping for several of the planned actions. Focus areas are highlighted in planned actions with bold text and brackets</p>	<p>Exchanging information, knowledge experience and best practices between the countries and among the members of the working group.</p> <ul style="list-style-type: none"> <li>- Regular meetings (approx. 5 meetings)</li> <li>- Webinars – subjects to be determined</li> </ul> <p>Physical/hybrid seminar (to be confirmed as most members will not be able to travel both to Via Nordica and an additional physical seminar)</p> <p>We are considering exchanging on the topic of local procurement in the bridge industry. This would give an overview of competence and production available in the Nordic countries.</p> <p>The topic would be mainly related to climate and asset management.</p>	<p>[insert text here, dl 1<sup>st</sup> November 2028]</p> <p>Instructions: [please remove the instructions when you are finished]</p> <p>You can describe here the main up comes from the WG from this year. Did the WG achieve all the goals, and how? What has been done for achieving the planned actions?</p> <p>Which events (seminars, meetings, etc.) has the working group organized? What was the purpose? What was achieved?</p> <p>Were there that kind of successes or practices in the activities that you could recommend to other working groups as well?</p>