

Recommendations with respect  
to the Prestudy  
*«Research development in  
infrastructure maintenance»*

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# General Recommendations

- We suggest that there be a focus on the maintenance of existing infrastructure with consideration of future needs
- We support the 6 proposed research areas, but believe that “sustainability” and “digitisation” should be integrated into the first four in a call for proposals. The wording of the call should, however, make it clear that appropriate consideration is to be given to sustainability and digitisation.
- We encourage that applicants demonstrate that the research being done in each of the areas fits together, i.e. they are part of a single system.
- We encourage that applicants
  - use both an interdisciplinary and a transdisciplinary research approach, and
  - integrate sustainability (i.e. economic, social and environmental aspects in both the short and long term) consistently throughout their proposals.

# Recommended research questions for the area “Knowledge of the condition of existing infrastructure”

- What information is required to make decisions with respect to the maintenance of infrastructure?
- How can we obtain the information we need, including optimal uses of new technologies?
- How can we help managers with limited capabilities obtain the information they need, e.g. new organisation forms, business models?
- How can we connect the condition of infrastructure to the performance of infrastructure?

# Recommended research questions for the area “Forecasting and decision support”

In order to plan maintenance,

- Which objectives and constraints need to be considered?
- What are appropriate ways of forecasting the future of infrastructure and the system in which it is embedded?
- How should one model infrastructure systems, taking into consideration current and future infrastructure performance and required resources?
- How does one determine optimal strategies, including consideration of uncertain futures and aspects of flexibility and resilience?
- How can we exploit new technologies, at what cost, with which information requirements?
- What are the costs and benefits of grouping interventions, i.e. within sectors and across sectors?

# Recommended research questions for the area “Financial instruments, ownership and business models”

In terms of maintaining infrastructure,

- What are the financing possibilities in the future? including
  - specification of incentives and barriers to efficiency improvements, and
  - ensuring that adequate resources are available
- What are the effects of different forms of ownership?
- How can the public and private sectors be optimally involved?

# Recommended research questions for the area “Organisation and processes”

In terms of maintaining infrastructure,

- What are the advantages and disadvantages of organisation forms, structures and processes?
- What processes encourage coordination between organisations?
- Which incentive structures are the most effective?
- What are the most appropriate ways to measure the performance of the organisation(s)?
- How do organisations need to be changed to exploit technological developments, e.g. digitisation, and how should this change be managed?