

NEPC Ageing Infrastructures: an economic analysis on infrastructure maintenance

Invitation to Tender
23 December 2024

Response deadline: 6pm 20 January 2025.

Call for proposals

The Royal Academy of Engineering (the Academy) is seeking to commission an analysis to understand the economic and social impacts of infrastructure asset maintenance, particularly across transport, water and wastewater, and flood risk defence.

The aim of this commission is to develop a deeper understanding of asset maintenance in the UK within each of the three sectors listed, cross-sector dependencies, and externalities related to asset maintenance to support a strong case for better management of ageing assets across the UK.

Context

The National Engineering Policy Centre (NEPC) is a partnership of 42 professional engineering organisations that cover the breadth and depth of our profession, led by the Royal Academy of Engineering. Together we provide insights, advice, and practical policy recommendations on complex national and global challenges. The NEPC is conducting a policy project with an aim to make sustaining our ageing infrastructures a strategic priority for central, devolved, and local governments. It will look across three primary infrastructure sectors: transportation, water and wastewater, and flood risk defence to reduce the risk of failure of these assets as well as loss of service. This will be delivered in three components: making a case for change, supporting better-informed decision-making, and identifying actionable implementation pathways.

As part of delivering the first component in making a case for change, the Academy is commissioning an analysis to convey the economic benefits of infrastructure maintenance, particularly across the three primary infrastructure sectors. Through this tender, we aim to gain insights into the economic and social advantages of infrastructure asset maintenance to develop a strong case for change for decisionmakers to prioritise better management of our ageing assets, ensuring sustainable and resilient infrastructure for the future.

Maintaining infrastructure assets is critical for ensuring safety, economic growth, and minimising disruption to essential services. The UK, however, has historically given insufficient attention to infrastructure maintenance¹. The National Audit Office found that parts of the UK's national infrastructure are deteriorating due to inadequate maintenance budgets and oversights².

Objectives and approach

The Academy is seeking to commission an economic analysis to examine and evidence the strength of the case and wider economic benefits of infrastructure maintenance to inform the NEPC Ageing Infrastructures project. The aim of this commission is to develop a deeper understanding of asset maintenance in the UK within the three primary sectors outlined—transport, water and wastewater, and flood risk defence—to help generate evidence-based policy outcomes.

As such, we expect an economic analysis of infrastructure maintenance in the UK to satisfy the following objectives:

- To test the hypothesis that assets are deteriorating, maintenance funding is stagnant, and societal expectations and demand on these infrastructures are increasing including due to the effects of climate change.
- To quantify the proportion of infrastructure spending specifically allocated for managing existing assets in the primary sectors.

1. ¹ <https://nic.org.uk/studies-reports/infrastructure-progress-review-2024/>

2. ² <https://eandt.theiet.org/2024/01/16/poorly-managed-infrastructure-projects-waste-billions-taxpayer-funds-watchdog-warns>

- To provide insights on positive and negative externalities related to asset maintenance and the wider benefits and valuation of infrastructure asset maintenance, including any cross-sector dependencies.
- To include examples of less visible case studies that present a strong storytelling narrative and help illustrate a compelling case for maintaining existing infrastructures in the UK.
- To draw conclusions on how maintaining existing infrastructure contributes to economic growth.
- To understand the breadth, quality and impact of investment in maintenance in the UK and how this has changed over time, potentially through compiling an asset registry.

The intention of this work is to generate the 'case for change' for improving maintenance of existing infrastructures.

Outputs

The Academy and NEPC are seeking a well-evidenced and well-structured deliverable package to be provided upon completion of the project to include, as a minimum:

- **Deliverable Overview:** summary of the main outputs expected from the project, clearly listing each deliverable
- **Final Report:** a proofread, comprehensive report of c.10,000 words with a strong policy narrative that sufficiently meet the objectives outlined. This could include sections such as executive summary, methodology, results, conclusions, and appendices.
- **Interim Deliverables:** an initial report structure and plan submitted at the beginning of the project *and* a report submitted at the midpoint of the project to provide updates on progress, preliminary findings, and any issues encountered.
- **Data visuals:** clear and compelling visuals with key data provided as infographics and/or other forms to engage policymakers
- **Datasets:** a spreadsheet of datasets used, and if processed, a small annex detailing how the data was processed. Additionally, evidence how the data was sourced, processed, and validated for quality and assurance. Note: access to data and models used may be requested.

Responding to the ITT

Submitting a proposal

Please submit a succinct proposal, setting out the intended approach to the research outlined in this call. The proposal should include the following:

- **Cover Letter:** the cover letter should include a brief introduction to who is bidding, summary of their understanding of the project, and intent in submitting a proposal. Length of one page and include details for primary point of contact.
- **Technical Proposal**

- Executive Summary: provide a brief summary of the bidder's proposal, highlighting key points
- Organisational background and experience: describe the bidder's relevant experience and qualifications, providing evidence of three past projects and expertise in the area
- Methodology and approach: explain how you intend to approach this commission and all activities that would be carried out, including data collection methods, analytical techniques, and project management approach
- Project team: identify key personnel who will be involved in the project, including their roles, qualifications, and relevant experience. Attach CVs as necessary.
- Work plan and timeline: provide a detailed work plan, outlining the tasks to be performed, milestones, timeline for completion as well as how you intend to work with the Academy and what support is needed. We recognise the tight deadlines and as such will welcome proposals that fulfil part of this scope but require explicit explanation if you intend to reduce the scope in order to meet the short deadline.
- Inclusive and ethical working: outline your approach to inclusive and ethical working. We expect the project to be delivered in line with our values of inclusion and diversity and to the highest ethical standards.
- Quality assurance and risk management: explain how the bidder will ensure quality of their work and manage potential risks.
- **Financial Proposal**
 - Cost breakdown: provide a detailed breakdown of all costs associated with the project including personnel, materials, and other expenses.
 - Justification of costs: provide a rationale for costs, demonstrating value for money and efficiency

Responses should demonstrate value for money (e.g. by building on existing research, leveraging other analyses of the group) and consideration of diversity and inclusion. We expect to see diverse perspectives considered in the development of all proposals and that all outputs are considerate of a wide range of audiences. As an Academy, we proactively seek to procure services from diverse teams and diverse suppliers. The response should also confirm the group can provide a final draft of the report no later than **30 April 2025**.

We strongly encourage organisations and bidders from underrepresented backgrounds to pitch for this research project. This includes Black-owned, disabled-owned, minority-owned, LGBTQ+ owned, and women-owned agencies. We believe in fostering diversity and inclusivity within the research community, and your unique perspectives and expertise are invaluable assets.

Proposal assessment criteria

The Academy has high visibility among many stakeholders internationally including government, industry and academia, all with high expectations of the Academy capacity to deliver quality outputs with high impact. The successful proposal will need

to meet these expectations by delivering quality outputs. The assessment criteria will include:

- The relevance of the proposed research to the call.
- The expertise and experience of the organisation or consortium to the subject area
- The ability of the team to access relevant communities and networks to source sufficient data sets and case studies
- The capacity to deliver the outputs by the firm deadlines demonstrated through a clear and realistic project delivery process and an appropriate level of expert, managerial, and administrative resourcing
- The experience of the team in communicating with policy audiences and producing outputs that can inform and shape policy, including excellent report writing skills and ability to present narrative and numbers in a way which promotes understanding
- The demonstrated value for money, including competitive and clear pricing structure accounting for all delivery costs and with any in-kind services of monetary contributions clearly labelled

The ability of proposals to meet each of the above criteria will be judged with equal weighting.

Next steps

1. Deadline to submit PDF proposal: **6pm 20 January 2025**, by email.
2. Review decision and contracting (this may include interview): Interviews commencing **27 January 2025**.

Indicative timeline:

1. Initial report structure and plan: 10 February 2025
2. Interim report: 24 March 2025
3. Final report submitted: 30 April 2025

Questions are welcomed and should be directed to:

Brittany Hsieh, Senior Policy Advisor – Digital and Physical Infrastructures
Brittany.Hsieh@raeng.org.uk

Proposals should be sent to the above by **6pm on 20 January 2025**.

The Royal Academy of Engineering

Engineering matters. It underpins our daily lives, drives economic growth, plays a critical role in addressing major societal challenges and helps ensure our readiness for the future, from providing a sustainable supply of food, water and clean energy, to advancing healthcare, and keeping us safe and secure.

As the UK's national academy for engineering and technology, the Royal Academy of Engineering brings together the most talented and successful engineers – our Fellows – to advance and promote excellence in engineering for the benefit of society.

Our vision is engineering in the service of society. Our charitable mission is to deliver public benefit through engineering excellence and technology innovation. We have outstanding convening power nationally and internationally. We understand how to make systems and innovations make a positive difference to society. We are trusted for our independence and professional excellence.

In everything we do, we are guided by our five values:

- **Progressive leadership** – embodying the courage, commitment and ambition to drive positive change for engineering and society
- **Diversity and inclusion** – creating cultures in which everyone can thrive and diverse perspectives enrich our collective performance
- **Excellence everywhere** – bringing evidence, expertise, integrity and a passion for continuous improvement to everything we do
- **Collaboration first** – prioritising collaboration and building partnerships to improve outcomes
- **Creativity and innovation** – solving problems and generating opportunities through creative thinking and innovation.

Our overarching goal for 2020-2025 is to harness the power of engineering to build a sustainable society and an inclusive economy that works for everyone.

[National Engineering Policy Centre](#)

The National Engineering Policy Centre connects policy makers with critical engineering expertise to inform and respond to policy issues of national importance, giving policymakers a route to advice from across the whole profession, and the profession a unified voice on shared challenges.

The Centre is an ambitious partnership, led by the Royal Academy of Engineering, between 43 different UK engineering organisations representing 450,000 engineers.

Our ambition is that the National Engineering Policy Centre will be a trusted partner for policy makers, enabling them to access excellent engineering expertise, for social and economic benefit.