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## **1. PURPOSE**

- 1.1 The purpose of this requirement is to provide the National Infrastructure Commission with advice and analysis on:
- How freight can reduce its impact on congestion and the methods through which freight can minimise its exposure to congestion;
  - The relative effectiveness of different interventions for managing the impacts of congestion on the freight system, including the potential for existing and emerging technologies (including, but not restricted to, smart motorways, lorry platooning, digital railway signalling, and longer, heavier vehicles) to manage congestion on the UK road and rail networks;
  - The barriers to introducing or the scaling of existing and emerging technologies that seek to manage the impacts of congestion on freight or maximise the existing transport network capacity;
  - The potential for modal shift of freight from road to rail or waterborne forms of transport, as well as the potential benefits/impacts of moving freight off rail;
  - The characteristics of congested areas, and a desktop review of pinch points to understand the underlying causes of congestion;
  - The role that better data gathering, sharing and interrogation/use could deliver in reducing the impact of congestion on freight, and broader decision making on infrastructure investment; and
  - Relevant domestic and international case studies for how the impacts of congestion have been successfully managed in relation to the freight industry.

## **2. BACKGROUND TO THE CONTRACTING AUTHORITY**

- 2.1 The National Infrastructure Commission (NIC) is an independent body that enables long term strategic decision making to build effective and efficient infrastructure for the UK. The NIC was set up on 5 October 2015 and was formally established as an Executive Agency of HM Treasury on 24 January 2017. It will look at the UK's future needs for nationally significant infrastructure, help to maintain UK's competitiveness amongst the G20 nations and provide greater certainty for investors by taking a long-term approach to the major investment decisions facing the country.
- 2.2 The NIC will deliver a long-term plan and assessment of national infrastructure needs once a parliament, setting out what a government should do over the next five years to ensure delivery of the UK's long-term infrastructure requirements. It is overseen by a small board, appointed by the Chancellor, and able to commission research and call for evidence from public sector bodies and private sector experts.

- 2.3 The Commission will publish the first National Infrastructure Assessment in summer 2018, which will look ahead to requirements for the next 30 years. Alongside that, the Commission will carry out specific studies on pressing national infrastructure challenges to support the long-term competitiveness of the UK economy.

### 3. BACKGROUND TO REQUIREMENT/OVERVIEW OF REQUIREMENT

- 3.1 In November 2017, the Chancellor of the Exchequer asked the Commission to undertake a study on the future of freight. The Government asked the Commission to:
- *Assess the impact freight has currently on urban congestion and the UK's carbon emissions, and the future of inter-city freight movements;*
  - *Make recommendations on the future of freight infrastructure and regulation to reduce the effects of congestion on productivity, particularly in urban areas, and ensure wider freight connectivity supports economic growth;*
  - *Consider the potential of emerging technologies to improve the efficiency, productivity and environmental impact of UK freight;*
  - *Make recommendations on the future of our roads and highways to be able to adapt to new technology, e.g. platooning;*
  - *Consider the wider economic role of freight and how its economic benefits are factored into government infrastructure investments;*
  - *Take into account the increase in non-fossil fuels for road vehicles, and consider options for decarbonising the freight sector including the infrastructure and regulation needed for low emission haulage.*
- 3.2 Bidders should read the full [Terms of Reference](#) for the freight study in order to understand the broader context for this requirement and inform their response.
- 3.3 The Commission will publish **an interim report in Autumn 2018** that will outline the importance of freight, the future of freight demand, the impacts of congestion and carbon on freight and caused by freight, and the key barriers to improvement and change.
- 3.4 **The study will conclude with a final report in Spring 2019** that provides recommendations on the changes required to infrastructure, regulation, industry practices, and the government's investment priorities in the freight sector, in order to deliver an efficient and low-carbon freight system over the coming 30 years.

#### 4. DEFINITIONS

Expression or Acronym	Definition
Freight	Freight is the transportation of commercial goods by road, rail or other modes.
NIC / Commission	Refers to the National Infrastructure Commission.
CAV	means Connected and Autonomous Vehicles
HGV	means Heavy Goods Vehicles
Telematics	means an interdisciplinary field that encompasses <a href="#">telecommunications</a> , vehicular technologies, <a href="#">road transportation</a> , <a href="#">road safety</a>

#### 5. SCOPE OF REQUIREMENT

- 5.1 The scope of the requirement is to appoint a suitably experienced supplier to undertake a piece of research examining the impacts that different policy and infrastructure interventions could have on congestion on the national and local transport network.
- 5.2 Congestion is a wider societal issue, rather than being specific to the freight sector. As such, the Commission has adopted a twofold approach to examining congestion: first, how can freight reduce its impact on congestion (e.g. by reducing number of vehicle movements or more efficient use of road space) and the methods through which freight can minimise its exposure to congestion (e.g. by retiming deliveries, modal shift or new delivery methods).
- 5.3 The Commission has, therefore, identified the need for impartial and evidence based research to understand:
- The potential of existing and emerging technologies in infrastructure and vehicles, to maximise or increase the potential capacity available on the UK transport network, and the barriers and drivers to rollout and uptake;
  - The realistic potential of modal shift from road to other domestic modes (before and after possible interventions), and its impact on reducing congestion on a national and urban basis (this should also consider the benefits/impacts of moving freight off rail with regard to congestion on the rail network);
  - The characteristics of congested areas, and a desktop review of known pinch points to understand the underlying causes of congestion – for both rail and road;
  - The role that better data gathering, sharing and interrogation/use could deliver in reducing the impact of congestion on freight, and broader decision making on infrastructure investment; and

- Relevant domestic and international case studies for how congestion has been successfully managed in relation to the freight industry.

## 6. THE REQUIREMENT

6.1 The objectives of this piece of research are to provide the NIC with a clear, concise, evidence based written report that examines:

- The relative impacts on the freight industry of different interventions to reduce congestion on the national and local transport network, including an examination of the potential for emerging technologies to impact upon congestion on the road and rail networks;
- Recent policy interventions for managing congestion and provides an evidence-based analysis of their effectiveness.
- Other methods of managing congestion, including the potential of larger freight vehicles, better use of existing vehicle capacity (rail and road), changing operating practices (such as consolidation centres, greater use of rail interchanges, and re-timing deliveries) and the potential impacts of connected and autonomous vehicles;
- The potential for modal shift from road to rail, river, or coastal shipping, and the total likely reduction in congestion and vehicle numbers this could have, as well as the potential benefits/impacts on broader transport network capacity of moving freight off rail;
- How sharing of haulier data, freight movement data, and the introduction of new data management such as distributed ledger technologies such as Blockchain (<https://en.wikipedia.org/wiki/Blockchain>) could help inform better decisions from the freight industry and from government; and
- The underlying causes of freight congestion and hotspot areas – identifying the biggest hotspots today (where they have already been identified in existing literature) and what impact in reality this congestion has on the operation of the freight system.

6.2 The NIC therefore requires the provider to undertake:

- A review of recent UK policy interventions for managing congestion and an evidence-based analysis of their effectiveness, this should include, but not be restricted to SMART motorways, congestion charging, railway improvements, and any other management measures;
- An exploration of the potential for emerging technologies to impact upon congestion on the road and rail networks. These should include, but not be restricted to, digital signalling, platooning of trucks, connected and autonomous vehicles (CAVs);

- Analysis of possible ways to maximise the use of capacity in vehicles and reduce empty/under-utilised running;
  - Analysis of how changes to operating practices of the industry (including re-timing deliveries) could reduce congestion, including an assessment of the potential costs and benefits of consolidation centres;
  - Analysis of the potential for modal shift of freight to rail or waterborne transport (both inland waterways and coastal shipping). This should include an understanding of the extent to which modal shift can be achieved with existing and planned infrastructure interventions and an understanding of how specific infrastructure interventions could enhance or unlock the potential for modal shift (including an understanding of the likely costs of these interventions and impacts on congestion on those networks). It should also explore the counterfactual, and consider the potential impacts on the rail network of moving rail freight to another mode;
  - A review of the implications on road and rail infrastructure, including for other users, of permitting larger vehicles (particularly longer freight trains and longer, heavier trucks), and the effect this could have on congestion;
  - A review of the implications of connected and autonomous vehicles (CAVs) for the freight industry and its operations (i.e. parking space reductions, driverless vans/HGVs); and
  - A review of how new/better data gathering/transparency through existing technologies (such as telematics) and new methods such as the use of distributed ledger technologies (such as Blockchain) could inform decision making in the freight system and in infrastructure investment.
- 6.3 The Commission is particularly interested in the use of case studies (both international and domestic) to enhance the analysis of this study and learn lessons from others.
- 6.4 Delivery of the above analysis will require the successful bidder to work with other consultancies undertaking research for the NIC on the value of the freight system, demand drivers of freight, and approaches to deliver a low/no carbon freight system. This will involve sharing of information and outcomes, in order to deliver a coherent package of research based on consistent assumptions and data.
- 6.5 We anticipate that this requirement can largely be achieved through secondary research methods, though we recognise that there may be cause for including primary research in the form of workshops, interviews, roundtables or questionnaires. Suppliers should explicitly state their methodologies for each stage of the research process, demonstrating the suitability of this methodology to the task.
- 6.6 The Commission operates within a fiscal and economic remit. We expect that, where applicable, the analysis will indicate its implications for the fiscal and

economic remit. Further details of the Commission's fiscal and economic remit can be found [here](#).

- 6.7 The supplier will be responsible for the development of a project plan and timetable, to meet the needs of the NIC (indicative timescales are set out in **Section 7** below).
- 6.8 At the start of the project we would expect to hold an inception/scoping meeting with the successful supplier, and for a short inception report to then be provided which clarifies the approach to be taken, along with a plan setting out key milestones and dates for regular updates, deliverables, risks and how these will be managed etc. – for agreement, before proceeding to carry out the analysis. During the evidence gathering and subsequent phases we expect the bidder to work closely with the Commission, including through regular meetings and other communication.
- 6.9 The Provider should also be prepared to present to technical and non-technical members of the Commission in a clear and concise fashion, to set out the key findings from their work, and the key assumptions, results, and caveats in a clear and concise fashion, to ensure these are fully understood.
- 6.10 Analysis should be derived from a broad range of credible sources, in particular drawing on information and analysis that is already in the public domain and analysis of locally held data and intelligence.

## 7. KEY MILESTONES

- 7.1 The Potential Provider should note the following project milestones that the Authority will measure the quality of delivery against:

Milestone	Description	Timeframe
1	Project inception meeting with NIC to include draft inception report to be provided, and agreed by NIC, clarifying the approach to be taken, along with a plan setting out key milestones and dates for deliverables, risks and how these will be managed, etc.	Within 2 weeks of contract award
2	Presentation of key research areas and outline methodology, agreed with the NIC	Mid July 2018
3	Presentation of early findings and key themes to the NIC	Early-mid September 2018
4	Draft report provided to the NIC for review and comment	End September / early October 2018
5	Final materials, including a peer reviewed report, provided to the NIC for sign off	End October 2018



## **8. AUTHORITY'S RESPONSIBILITIES**

- 8.1 The Commission will provide relevant evidence gathered through previous stages of its work. The NIC has already undertaken a significant amount of engagement with key stakeholders and where appropriate will be able to provide analysis, background information and views from those engagements to ensure that the contract runs smoothly.

## **9. REPORTING**

- 9.1 The NIC will work with the adviser to put in place weekly meetings between project leads, and a monthly emailed reporting regime in order to track progress, resource needs, and budget.

## **10. VOLUMES**

- 10.1 N/A

## **11. CONTINUOUS IMPROVEMENT**

- 11.1 The successful Provider will be expected to give due consideration to how the way in which the required Services are to be delivered throughout the Contract duration can be continually improved.
- 11.2 Changes to the way in which the Services are to be delivered must be brought to the Authority's attention and agreed prior to any changes being implemented.

## **12. SUSTAINABILITY**

- 12.1 N/A

## **13. QUALITY**

- 13.1 The Commission will be looking to use the research and analysis to inform its interim report and recommendations to Government in Autumn 2018 and final recommendations to Government in Spring 2019. Therefore it is critical that the project runs to time, with all assumptions and caveats clearly highlighted.
- 13.2 This is a substantial piece of work – the expectation is that all the outputs and related materials will be of a high quality and publishable standard.
- 13.3 The Commission will also seek views from its expert technical panel on the work and findings of this research. Any advice or comments will be fed back to the supplier via the NIC.

## **14. PRICE**

- 14.1 Prices are to be submitted via the e-Sourcing Suite using Appendix E pricing table excluding VAT. This excel spreadsheet is to be submitted at question level on the Emptoris system.



14.2 The maximum budget for the full requirement is £80,000 (exc. VAT), and bids received over this budget will be deemed non-compliant.

14.3 Prices should be inclusive of all expenses and exclusive of VAT.

## **15. STAFF AND CUSTOMER SERVICE**

15.1 The Authority requires the Potential Provider to provide a sufficient level of resource throughout the duration of the Contract in order to consistently deliver a quality service to all Parties.

15.2 Potential Provider's staff assigned to the Contract shall have the relevant qualifications and experience to deliver the Contract.

15.3 The Potential Provider shall ensure that staff understand the Authority's vision and objectives and will provide excellent customer service to the Authority throughout the duration of the Contract.

## **16. SERVICE LEVELS AND PERFORMANCE**

16.1 The Authority will measure the quality of the Supplier's delivery with reference to the key milestones set out in paragraph 7 and delivery against the research areas as outlined in paragraph 6.

16.2 As referenced in paragraph 13.3, the Commission will seek and feedback views of the NIC's Technical panel, which should be factored into the supplier's work. In addition, all suppliers must have a peer review process included as part of their proposal.

## **17. SECURITY REQUIREMENTS**

17.1 The supplier will acknowledge and protect all sensitive and confidential information its employees have access to during the contract period. The supplier will also ensure their IT security systems are sufficiently robust to prevent confidential and sensitive material being made available in the public domain.

## **18. INTELLECTUAL PROPERTY RIGHTS (IPR)**

18.1 All analysis (including any calculations and models) used to generate the outputs should be provided to the Commission for future use.

## **19. PAYMENT**

19.1 Payment can only be made following satisfactory delivery of pre-agreed certified products and deliverables.

- 19.2 Before payment can be considered, each invoice must include a detailed elemental breakdown of work completed and the associated costs.

## **20. ADDITIONAL INFORMATION**

- 20.1 The supplier should demonstrate that they are open to working collaboratively with other suppliers, contracted by the Commission in order to deliver related pieces of analysis.

## **21. LOCATION**

- 21.1 The location of the Services will be carried out at the offices of the supplier. However frequent meetings will need to take place with the National Infrastructure Commission at the supplier's offices, or at the Commission's offices at Eastcheap Court, 11 Philpot Lane, London, EC3M 8UD. It is likely that, while this work is being delivered, the Commission will move to new premises, also in central London. The supplier will be advised in good time of any change in the Commission's offices.
- 21.2 Suppliers should factor in any travel and subsistence (T&S) costs as part of their overall price as T&S claims will not be paid separately.