tfl\_scp\_002501 Improving sustainability across roadworks and our road network

Market Sounding Questionnaire

22 July 2024

Contents

[1. Introduction 2](#_Toc172557973)

[2. Problem Statement: Carbon in roadworks 3](#_Toc172557974)

[a. Background Information 3](#_Toc172557975)

[b. Problem Statement 3](#_Toc172557976)

[c. Solutions we might want to explore 3](#_Toc172557977)

[3. Problem Statement: Flooding, drainage and run-off contamination 5](#_Toc172557978)

[a. Background Information 5](#_Toc172557979)

[b. Problem Statement 6](#_Toc172557980)

[c. Solutions we might want to explore 6](#_Toc172557981)

[4. Legal Notice 7](#_Toc172557982)

[5. Freedom of Information 7](#_Toc172557983)

[6. Feedback request 9](#_Toc172557984)

[7. Questionnaire 10](#_Toc172557985)

1. Introduction

This Market Sounding Questionnaire (MSQ) is issued by Transport for London (TfL). Ahead of a potential funded competition, we want to engage with the market to:

* Understand what additional solutions exist that could improve sustainability across TfL’s road network
* Understand what technologies and processes exist in other cities, locations and industries that might be applicable to road network in London
* Gauge suppliers' interest, capabilities, and capacity to engage in a potential future trial

We are interested in learning about all solutions that could improve sustainability in roadworks, however there are two areas that this challenge will focus on:

* Carbon in roadworks
* Flooding & drainage

**Note: We are still interested in your solution as long as it’s relevant to sustainability across roadworks and TfL’s road network. Funding may be made available for future trials with solutions that fall outside of the two problem areas above.**

1. Problem Statement: Carbon in roadworks
   1. Background Information

Road maintenance is a significant source of carbon production through the entire lifecycle of a road. With over 9,000 miles of road in London alone, changing the way we maintain our roads has the potential to contribute greatly to public health and the reduction of associated emissions.

* The majority of UK roads are surfaced with asphalt (95%) , made from distilled crude oil and mineral aggregate, they are a finite resource and in short supply[[1]](#footnote-2)
* Pollution from road materials and vehicle emissions is higher in areas with heightened levels of deprivation[[2]](#footnote-3)

The road and streetworks sector is encouraged to reconsider its approaches and materials, emphasising a reduction in carbon footprint as a measure to improve the Earth's climate.

* 1. Problem Statement

*How might we… reduce the carbon impact of highway maintenance activities to meet London’s 2030 net zero emissions commitment.*

* 1. Solutions we might want to explore

**Reduce carbon emissions during reinstatements**

We are looking for innovative solutions that can help reduce the amount of carbon emitted when carrying out roadworks reinstatements.

This could include products that:

* Replace current reinstatement materials
* Improve production methods for reinstatement materials
* Reuse / recycle excavated material on site
* Limit/reduce the need of transporting materials to site

**Increase the longevity of roads**

We are looking for innovative solutions to prolong road lifespan and lower carbon emissions, while maintaining safety requirements (i.e. skid resistance)

Please consider the following:

* Materials that are used in ‘self-healing’ roads that are being tested across Europe.
* Use of secondary sources (such as fly-ash) as a sustainable interim fill-in material.
* Sustainable binding materials in asphalt

**Carbon absorption and new manufacturing materials**

We are looking for innovative solutions that can absorb carbon from the atmosphere as part of undertaking roadworks

This could include products that:

* Can be used within roadworks reinstatements
* Can be applied to the road surface (like surface dressing)
* Utilising Street furniture which can act as a carbon soak.

1. Problem Statement: Flooding, drainage and run-off contamination
   1. Background Information

As climate change progresses, London will experience warmer, wetter winters and hotter, drier summers with sporadic intense rainfall.[[3]](#footnote-4) These trends will result in increased risk of flooding events, which has significant implications for road and transport use, sustainability, safety and repair costs.

One of the biggest risks facing London is surface water flooding. This happens when rain falls so fast that the underlying ground and existing drainage networks cannot absorb or drain the water away fast enough. Roads can become like rivers and, if there is a lot of water, it can flood buildings and damage infrastructure. It can occur very quickly and without much warning.

London is particularly vulnerable to surface water flooding due to the large proportion of its area that is impermeable (for example, because of buildings and roads). In addition, much of London’s permeable surface is underlain by London Clay, which cannot absorb water as quickly as other substrates.

In addition, drainage asset data is inconsistent, resulting in limited knowledge of assets including their location, specification and condition, this means, for instance that we often don’t have good knowledge of the connections between highway gullies and the drainage system.

As well causing flooding, the increasing frequency of high-intensity rainfall will lead to poor water quality:

* Much of London’s drainage network is over 150 years old and is not designed for the city’s current and growing population. The combined system (which covers most of inner London) takes both sewage and rainfall, and so can reach capacity with only 2mm of rain. With nowhere else for the excess water and sewage to go, it is released into the Thames. Each year, around 39 million tonnes of untreated sewage are released into the river.[[4]](#footnote-5)
* Dry summers allow for the build-up of pollutants from traffic, which are then swept at high concentrations into watercourses by intense summer rainfall (particularly in outer London, where the drainage network is separate from the sewage network), affecting biodiversity and water quality. Environmental charity Thames21 has launched an interactive map, co-funded by the Mayor of London, Transport for London (TfL), and the Environment Agency, which highlights over 280 miles of London roads at "high risk of causing road runoff”[[5]](#footnote-6)

Locations across our road network can experience flooding after very short periods of heavy rain, and can incur hefty repair costs.

* 1. Problem Statement

*How might we… improve drainage to deal with the increased risk of surface water flooding in London, whilst mitigating against issues such as polluting nearby watercourses?*

* 1. Solutions we might want to explore

We are interested in prioritising solutions that could reduce the risk of flooding, particularly solutions that can deliver against a wider range of TfL’s priorities (e.g. supporting biodiversity, improving water quality).

Types of questions we may be looking to answer include:

* Can gully sensors be used to examine high-water level alarms?
* Can the cost of gully clearance be reduced without compromising on performance?
* Can we examine how to reduce toxicity levels through filtration of surface water?
* Can we improve storm prediction systems which can give us more reliable predictions (based on historical and live data)

1. Legal Notice

Information provided within this MSQ (the EME documents) does not purport to be comprehensive or verified by TfL or its advisers. No representation or warranty, express or implied, is or will be given by TfL or any of its officers, employees, servants, agents or advisers with respect to the information or opinions contained in the EME documents. Any liability in respect of such representations or warranties, howsoever arising, is hereby expressly disclaimed but nothing in the EME documents shall exclude or restrict liability for fraudulent misrepresentations.

TfL reserves the right without prior notice to amend the information provided, including, but not limited to, changing the timetable, the scope and nature of the procurement and the procurement process. In particular, TfL reserves the right to issue circulars to interested parties providing further information or supplementing and / or amending the procurement process. In no circumstances shall TfL incur any liability in respect of any changes. This will be subject to the requirements of public law, the UK and EU procurement rules and Treaty on the functioning of the European Union rules and general principles.

TfL reserves the right without prior notice not to follow up the EME documents in any way or with any interested parties. TfL also reserves the right to terminate this process at any time without awarding a contract. TfL will not enter into a contract based solely on the responses to the EME documents and no information contained within the EME documents or in any communication made between TfL and any interested party in connection with the EME documents shall be relied upon as constituting a contract or representation that any contract shall be offered.

Direct or indirect canvassing of the Mayor, any members of the Greater London Authority, employees, directors, board members, agents and advisers of TfL and any of its subsidiaries by any person concerning the EME documents or any related procurement process and any attempt to procure information from any of the foregoing concerning the EME documents may result in the disqualification of the person and / or the relevant organisation from consideration during the market engagement or for any associated procurement.

1. Freedom of Information

TfL is committed to open government and to meeting their legal responsibilities under the Freedom of Information Act 2000. Accordingly, all information submitted to a public authority may need to be disclosed by the public authority in response to a request under the Act. TfL may also decide to include certain information in the publication scheme, which TfL maintains under the Act.

If an interested party considers that any of the information included in their Market Sounding Questionnaire (MSQ) response is commercially sensitive, it should identify it and explain (in broad terms) what harm may result from disclosure if a request is received, and the time period applicable to that sensitivity.

Interested parties should be aware that, even where they have indicated that information is commercially sensitive, TfL might be required to disclose it under the Act if a request is received.

Interested parties should also note that the receipt of any material marked ‘confidential’ or equivalent by TfL should not be taken to mean that TfL accepts any duty of confidence by virtue of that marking.

1. Feedback request

Feedback is requested in relation to Problem Statements in this document and other solutions you would like to submit which are relevant to sustainability in roadworks. Your input is important as it will allow us to understand how we might go forward from here in terms of a potential future procurement process or trial.

Please complete the questionnaire either [online here](https://forms.office.com/e/whJCCLBxXb) (recommended option), or you can email this completed paper copy to [msqinnovation@tfl.gov.uk](mailto:msqinnovation@tfl.gov.uk) . If you have any issues submitting via MS Forms or wish to raise any clarifications please email [msqinnovation@tfl.gov.uk](mailto:msqinnovation@tfl.gov.uk)

For your feedback to be taken into account, your completed MSQ must be received **by 1pm GMT the 6 September 2024.**

All timelines provided are subject to change at TfL’s discretion:

|  |  |
| --- | --- |
| **Activity** | **Date** |
| Market Sounding Questionnaire Issued | 22nd July 2024 |
| Market Sounding Questionnaire Deadline | 6th September 2024 |

1. Questionnaire

As part of this market sounding exercise, TfL wishes to seek your knowledge of potential solutions, as well as understand the extent of your capabilities and appetite to participate in a potential future trial.

Please provide your feedback in the following questionnaire. Should you consider a particular question is not applicable to your organisation, please state “not applicable” in the tables/boxes provided.

This exercise does not form part of a formal procurement process. All responses will be carefully considered but will not bind TfL to undertaking a procurement or any particular approach to a procurement, nor will responses be treated as conveying any promise or commitment on the part of the respondent.

**Please complete your details below, followed by the MSQ questions**.

1. Organisation name:
2. Key contact name:
3. Key contact email:
4. Key contact telephone number:
5. How large is your organisation:
   1. Small (less than 20 employees)
   2. Medium (20 to 200 employees)
   3. Large (over 200 employees)
6. What problem does your proposed solution best tackle?
   1. Carbon in Roadworks
   2. Flooding & Drainage
   3. Other Sustainability related problem
7. Please select where you would best place the maturity of your solution:
   1. Concept (The idea of the solution has been identified and partially designed, but no working solution has been delivered.)
   2. Prototype (An early-stage solution or concept has been delivered and is workable.)
   3. Stable and Deployed (The solution has been developed from prototype stage and is now reliably operating meeting its expected specifications and requirements.)
   4. Optimised (The solution is stable, and has been refined based on feedback to maximise the efficiency of the solution.)
   5. New solution (The solution is operating within its target scope and is now identifying and adding new services and features beyond its expected specification.)
8. Please feel free to provide additional comments for the stage of development your solution(s) is at



1. Based on your understanding of the background information and problem statements, please provide details of any proposed solution(s) your organisation would be able to provide, including:  
   1. Describe what your solution is
   2. How the solution would result (either directly or indirectly) in a measurable improvement in environmental sustainability across TfL's road network, and/or improving drainage symptoms in London
   3. How the solution/technology would be applied in London
   4. Any assumptions about TfL’s infrastructure and resources
   5. If you would intend to subcontract for any part of the solution

If you have photos, diagrams and/or videos you would like to share in response to this answer, please send the attachments via email to [msqinnovation@tfl.gov.uk](mailto:msqinnovation@tfl.gov.uk) with the subject ‘Improving Sustainability in Roadworks MSQ Attachments’. Please only send us attachments directly addressing this question (Maximum 500 words):



1. Has your solution been deployed in a similar environment(s) to the London road network? What were the conditions of this deployment and what were the outcomes? (Maximum 300 words)



1. If you were to participate in a trial with TfL to test your solution, what requirements would you have, including infrastructure, resource and any operational changes? How long should we run the trial to test your solution? What are your expectations beyond a trial? (Maximum 400 words)



1. Based on your answer to the previous question, how much would it cost to trial your solution in a non-live and/or live test environment? Please explain your answer including any assumptions (Maximum 300 words)



1. How would you propose to assess the effectiveness of a trial of your solution? (Maximum 200 words)



1. What do you consider to be the top three risks to the successful trial of your solution? What action do you think can be taken to mitigate these risks?  (Maximum 300 words)

|  |  |  |
| --- | --- | --- |
|  | **Risk and description** | **Mitigation** |
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |

1. What critical scope information would you need to be contained in competition documents to allow you to make an effective submission and why?



1. Please provide any further comments you would like to share below. (Maximum 300 words)



1. https://www.ukmsn.info/roads-uk [↑](#footnote-ref-2)
2. http://uk-air.defra.gov.uk/assets/documents/reports/cat09/0701110944\_AQinequalitiesFNL\_AEAT\_0506.pdf [↑](#footnote-ref-3)
3. https://climatelondon.org/climate-change/flooding/ [↑](#footnote-ref-4)
4. https://www.ofwat.gov.uk/households/supply-and-standards/thames-tideway/ [↑](#footnote-ref-5)
5. https://www.bloomberg.com/graphics/2022-london-property-flood-map [↑](#footnote-ref-6)