Funding for Innovation: Opening Local Authority Transport Data Application Form

Please ensure that you have read and understood the criteria and advice in the "Funding for Innovation: Opening Local Authority Transport Data" guidance note. **Bidders should at least ensure that they address all the guidance highlighted in bold in this guidance**.

A separate application form should be completed for each scheme.

Applicant Information

Local authority name(s)*: Cambridgeshire County Council

Bid Manager Name and position: Michael Stevens – Smart Cambridge Project Manager

Name and position of officer with day to day responsibility for delivering the proposed scheme.

Contact telephone number: 01223 715918
Email address: Michael.stevens@cambridgeshire.gov.uk

Postal address: SH1312
Shire Hall
Castle Hill
Cambridge
CB3 0AP

When authorities submit a bid for funding to the Department for Transport, as part of the Government's commitment to greater openness in the public sector under the Freedom of Information Act 2000 and the Environmental Information Regulations 2004, they must also publish a version excluding any commercially sensitive information on their own website within two working days of submitting the final bid to the Department for Transport. The Department for Transport reserves the right to deem the business case as non-compliant if this is not adhered to.

Please specify the web link where this bid will be published:
https://www.cambridgeshire.gov.uk/transport-funding-bids-and-studies/transport-funding-bids/

SECTION A - Scheme description and funding profile

A1. Scheme name: DfT open transport data for Cambridgeshire project

A2. Headline description:

Please enter a brief description of the proposed scheme (<u>in no more than 250 words</u>)

Cambridgeshire recently undertook a transport data audit that identified which datasets should be made open as a priority. These are:

UTC Data – The system contains a rich source of real time traffic data for the city and surrounding market towns. This data can currently only be accessed by UTC 'operators' and cannot be easily extracted for other teams or organisations for analytical and developmental purposes.

Bluetooth Data – There is a network of 38 Bluetooth sensors across Cambridge and the data is currently only available to operators via the supplier's software.

Real-time Car parking data – From Cambridge off street car parks, Pay and Display machines and Park and Rides

These data sources will be opened by establishing Datex2 feeds from the suppliers into our UTMC common database platform for real time traffic management applications which will also then provide a feed to both our data platforms.

Our Intelligent City Platform (iCP) developed in conjunction with the University of Cambridge will process the data and make it available in person and machine readable formats through an API meeting the five stars of open data. This data will be made available both internally and publically to identify areas where highway operation can be improved, provide live incident management, support transport planning activities and projects and support the development of innovative products/solutions.

The data will also feed into the Geospock platform that we have a licence for, allowing it to be visualised and analysed providing powerful insights for policy development and operational deployments.

A3. Geographical area:

Please provide a short description of area covered by the bid (<u>in no more than 50 words</u>)
The data covers the city of Cambridge (See Appendix A) as well as providing data in several key market towns including Huntingdon, St Neots & Wisbech (See Appendix B). There will also be an opportunity for our EEH colleagues in the Cambridge-Oxford corridor and Peterborough (See Appendix C) to utilise the data infrastructure.

OS Grid Reference: **N/A**

Postcode: **N/A**

Please append a map showing the location (and route) of the proposed scheme, existing transport infrastructure and other points of particular interest to the bid e.g. development sites, areas of existing employment, constraints etc.

A5. Equality Analysis

Has any Equality Analysis been undertaken in line with the Equality Duty? ☒ Yes ☐ No

SECTION B – The Business Case

B1. The Scheme – Summary/History (Maximum 200 words)

Please outline what the scheme is trying to achieve – indicate what data you expect to collect and your approach, what applications you will deliver from the connected data etc.

This should also provide a clear statement on data privacy and security.

The aim of the project is to better utilise the rich traffic data that is currently held by Cambridgeshire but is undiscoverable and not available for re-use, by making it open for research, assessment and innovation.

The data collected and made open will include, at a minimum: Average speed, traffic flow, detector occupancy, congestion levels and saturation levels, Bluetooth data – traffic counts and journey times, live car-parking data from our main car parks, on-street pay and display machines and Park & Rides.

The data will be made available in its raw format through a Datex2 feed to our UTMC common database. The data will then be fed into our data platforms, processed into a useable format and made available in both person and machine readable formats. The data platforms will provide analysis of the data that can be utilised by the council to inform future decision making.

The UTC system itself does not collect any personal data whilst the bluetooth system hashes all identifiers with the processing carried out at the edge before the processed data is sent back. Any data collected from users of the platforms will be dealt with in a GDPR compliant manner by the platform providers.

B2. The Strategic Case (Maximum 500 words)

This section should set out the rationale and strategic context for making the investment. This section is the most important and bidders should ensure that they address the guidance (particularly the text **in bold).**

Supporting evidence may be provided in annexes – if clearly referenced in the strategic case. This may be used to assist in judging the strength of your strategic case arguments but is unlikely to be reviewed in detail or assessed in its own right. So you should not rely on material included only in annexes being assessed.

Some of the questions you may wish to consider are:

How can opening data improve your transport service and what is the strategic context and value?

33,500 homes are being built and an expected 44,000 jobs created in the Greater Cambridge area over the next 12 years (see Appendix D), congestion has been identified as a barrier to economic growth and is set to significantly increase as new housing comes on-line. We have a target of getting 1:4 people out of their cars and onto public transport. This information will feed in to public transport policies and the reallocation of highways space to manage demand more effectively, maximising use of existing infrastructure to reduce journey times and help mitigate the impact of congestion on the economy and air quality. The data will also support active traffic management via our UTMC system.

We completed an independent data audit (see Appendix E) which identified available datasets within the authority. These were mapped against the questions we want to answer and the frequent requests we get to open-up data. After analysis we have prioritised UTC, Bluetooth and Parking datasets as opening these offers maximum impact for the lowest cost.

What are the expected benefits / outcomes of your strategy?
Community and environment – The data will support the cities work in source attribution for poor air quality and inform policies and projects supporting electric cars/buses and deliveries. It will build on the work the Smart Cambridge team has done using data to nudge behaviour.

Operational/efficiency – The data will be used by the Integrated Highways Management Centre to inform strategies for improving network management and giving the travelling public better information. Highways colleagues will be able to use the network and parking data to better manage parking and create efficiencies in maintenance regimes.

User experience – The data will help build on recent "Smart Transport Information" work that has focused on turning data into intelligence/information through an App (Motionmap), "Smart Panel" Lobby Screens and totems. This is used to encourage modal shift getting travellers out of cars onto more sustainable modes. (Further information at:
https://www.connectingcambridgeshire.co.uk/smart-places/smart-cambridge/)

Safety/regulation – We will ensure that all regulations are adhered to. In the event that legislation proves to be a barrier to delivering benefit we will work with DfT on possible solutions.

Economic Growth – Primarily we will use the data to address issues of congestion recognised as the most significant barrier to economic growth for the Greater Cambridge area.

What is the predicted impact of opening the data and how will you measure the benefits?
In our experience measuring impacts of opening data are difficult, however the outcomes have always been positive. We propose to measure the benefits by setting a number of KPI's – uplift in the numbers of people accessing transport information and evidence of modal shift, operational savings, economic benefits of commercial data use, projected savings to public health as clean air policies are enacted based on the data.

How will you transform the data into intelligence and how will this help your value for money assessment?
The new data sources will feed into the Geospock platform along with existing data which will be used to visualise layers of data both geographically and temporally allowing policy makers to gain insight into correlations. The platform uses AI/Machine Learning to be able to make predictions based on historic patterns. It is this intelligence that increases value for money as unprocessed data doesn't drive benefits stated in the KPIs.

B3. The Financial Case – Project Costs

Before preparing a proposal for submission, bid promoters should ensure they understand the financial implications of opening the data (including any implications for future resource spend and ongoing costs relating to maintaining and updating the data), and the need to secure and underwrite any necessary funding outside the Department for Transport's maximum contribution.

Please complete the following tables. **Figures should be entered in £000s** (i.e. £10,000 = 10).

Table A: Funding profile (Nominal terms)

Bidders should provide a cost breakdown, and justification, of the different stages of opening data that the Department will provide funding for.

£000s	2019-20	Total
DfT Funding Sought	*Bluetooth Journey time data feed from Drakewell* *UTC data feed via VPN from Siemens (included in traffic signals UTC contract)* *On Street Parking Data – via Conduent contract* *Integration of Bluetooth journey time data feed with Argonaut common database by Idox* *Integration of UTC data feed with common database by Idox* *Datex 2 feed from common database by Idox* *iCP platform development for database, analysis, API provision and creation of user interface by University of Cambridge* *CCC Project Management*	*£94k*
LA Contribution	*Provision and additional development of ICP data platform– data analysis via Geospock*	
Other Third Party Funding	*N/A*	*N/A*

Notes:
(1) Department for Transport funding must not go beyond 2019-20 financial year.
(2) A local contribution of 5% (local authority and/or third party) of the project costs is required.

B4. The Financial Case - Local Contribution / Third Party Funding

Please provide information on the following points (where applicable):

a) The non-DfT contribution may include funding from organisations other than the scheme promoter. Please provide details of all non-DfT funding contributions to the scheme costs. This should include evidence to show how any third party contributions are being secured, the level of commitment and when they will become available.

The Council has committed £110,000 for the provision and additional development of data platforms. The Smart Cambridge Programme has been instrumental in the development and testing of these platforms and access to these platforms will be available for use by the start of the project. This commitment represents 53% of the overall project cost outlined in the bid.

b) Where the contribution is from external sources, please provide a letter confirming the body's commitment to contribute to the cost of the scheme. The Department for Transport is unlikely to fund any scheme where significant financial contributions from other sources have not been secured or appear to be at risk.

Have you appended a letter(s) to support this case? ☐ Yes ☐ No ☒ N/A

B5. The Financial Case – Affordability (maximum 200 words)

This section should provide a narrative setting out how you will mitigate any financial risks associated with the scheme.

Please provide evidence on the following points (where applicable):

a) What risk allowance has been applied to the project cost?
There is minimal risk as the data mostly comes from existing contracts with known costs. In the event of an overrun in that area, the CCC would cover up to an additional £2k or a maximum 5% of the Idox estimates

b) How will cost overruns be dealt with?
The Smart Cambridge Programme has funding available for trialling and deploying new sensors across the city to generate traffic data. In the event of a cost overrun for this project, there is scope for some of this funding to be re-allocated in order to make our existing data sources available.

c) What are the main risks to project delivery timescales and what impact this will have on cost?
Greater than expected time and resource requirements to integrate the feeds into the Data Platforms and to process the data in to a useable format on both data platforms pose the main risk to delivery timescales. Given that a significant part of the work is expected to be completed within existing contracts, the cost impact of this risk is considered to be low

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B6. The Economic Case – Value for Money (maximum 200 words)

Bidders are requested to provide at least a qualitative description of the benefits that will be delivered from the data opened and how these could provide potential benefits going forward.

This should also capture any examples which generate revenue from the data collected and an indication on the number of users that benefits.

The data made available is expected to deliver multiple benefits particularly when combined with existing open data including bus journey times and air quality. Using data to better manage traffic flows both in real time and at a strategic level will reduce time lost to the economy from congestion, which one report suggests on average is 31 hours a year - equivalent to £1,168 per person in peak hour traffic.

Improving public transport information and optimising transport routes will allow an improved service to be provided encouraging the uptake of public transport. The analysed data can be used to inform policy to maximise the use of highway land to ensure there is sufficient space for all users. Encouraging sustainable transport methods will improve air quality as well as general health reducing the impact on the NHS.

Cambridge has a cluster of tech start-ups related to transport who have already requested access to our data to provide analytical support as well as to develop new ideas/products. These developments will likely lead to job creation and opportunities in the local area. We would run a number of hackathons to encourage use of available data sets building on previous events.

B7. The Commercial Case (maximum 200 words)

This section should set out the procurement strategy that will be used to select a contractor and, importantly for this fund, set out the timescales involved in the procurement process to show that delivery can proceed quickly.

What is the preferred procurement route for the scheme? For example, if it is proposed to use existing framework agreements or contracts, the contract must be appropriate in terms of scale and scope.

The project will utilise our existing contracts with Siemens (as our UTC provider), Drakewell (as our Bluetooth journey time provider), the University of Cambridge (as our research data platform provider), Geospock (as our analytical data platform provider) and Idox (as our UTMC system provider).

Our assessment of the work required for this project suggests that the majority of tasks will fall within the scope of existing contracts. If further investigation suggests that any work falls outside the existing scope of contracts, an exemption will be sought under the Councils procurement regulations. The initial cost of setting up the data sources and the data platform infrastructure means that it would not be viable for a 3rd party supplier to offer better value for money in the provision of data or analysis in these circumstances.

There will therefore be a minimal lead time of 2-3 weeks from receiving the funding to obtaining quotes and raising purchase orders for the work to be carried out.

An assurance that a strategy is in place that is legally compliant is likely to achieve the best value for money outcomes is required from your Section 151 Officer below.

B8. Management Case - Delivery (maximum 200 words)

Deliverability is one of the essential criteria for this Competition and as such any bid should set out if any statutory procedure are needed before it can be delivered.

a) An outline project plan (typically in Gantt chart form) with milestones should be included as an annex, covering the period from submission of the bid to scheme completion. The definition of the key milestones should be clear and explained. The critical path should be identifiable and any contingency periods, key dependencies (internal or external) should be explained. (See Appendix F)

Has a project plan been appended to your bid?   ☒ Yes   ☐ No

b) A statement of intent to deliver the scheme within this programme from a senior political representative and/or senior local authority official. (See Appendices G & H)

Graham Hughes, Executive Director - Place and Economy - Cambridgeshire County Council

"I am responsible for the operational services and infrastructure delivery on the transport network. Our aims include the improvement of the operational efficiency of our network by optimising the use of highway land, improving our public transport offering and using more intelligent traffic management. Opening up our existing data will provide a key component in supporting each of these.

In the existing funding climate it is of particular importance that we get the most out of the resources we have available. The existing transport data infrastructure covers the main

transport corridors in Cambridge and provides a cost effective way of supporting the improvement of the services we provide and the transport policies we put in place.

The Smart Cambridge programme is working across Cambridgeshire to improve the way we use data and drive innovation in support of our transport delivery. The programme has a track record of strong collaboration, working with other local Councils, the University of Cambridge, businesses and our local communities to provide new solutions to existing problems. I fully support this bid to make our transport data more accessible and underpin our service improvement objectives."

B9. Management Case – Governance (maximum 300 words)

Please name who is responsible for delivering the scheme, the roles (Project Manager, SRO etc.) and set out the responsibilities of those involved and how key decisions are/will be made. An organogram may be useful here. This may be attached as an Annex. (See appendix I for structure chart)

SRO – Programme Manager – Noelle Godfrey – Noelle will be responsible for ensuring that the project meets its objectives of opening the data to a 5 star open data standard whilst also staying to budget and delivered in the project timeframe as per the Project Plan.

Project Manager – Michael Stevens – Michael will be responsible for the day to day running of the project from the initial design, execution, monitoring, controlling and closure of the project. He will work closely with the Suppliers and Team Leaders to ensure the successful integration of the various data sources and data platforms.

Senior Programme Support – Sue Dabbs – Sue will undertake the administrative duties to support the successful delivery of the project including finance and meetings.

Team Leaders – Richard Ling, Richard Burnett & Phil Hammer – Each will be responsible for providing support and resource to ensure that their systems for Traffic Signals, Bluetooth journey time and car parking data can be accessed. They will provide technical support in the integration of the systems and ensuring the quality of the raw data. Richard Burnett is additionally responsible for the UTMC system and will provide a resource to ensure that the data is accepted in to the common database and made available to the data platforms.

B10. Management Case - Risk Management

Risk management is an important control for all projects but this should be commensurate with cost. A risk register covering the top 5 (maximum) specific risks to this scheme should be attached as an annex. (See Appendix J)

Has a risk register been appended to your bid?   ☒ Yes   ☐ No

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SECTION C – Monitoring, Evaluation and Benefits Realisation

C1. Benefits Realisation (maximum 250 words)

The competition is seeking to build up the business case for the relevant dataset(s) opened and use cases. Please provide details on the profile of benefits, and of baseline benefits and benefit

ownership and explain how your will lead to the outputs/ outcomes. This should be achieved by logic maps, text descriptions, etc. (See Appendix K)

We also request that your bid clearly articulates how you are expecting to use the data collected and the expected benefits for both users and road op. Please also outline how you could measure the expected benefits from the application of the harvested data.

The data we collect will include real time, weekly, monthly annual traffic analysis (congestion, queues, journey times, flows). We can extract the current data from the UTC and Bluetooth systems manually using this to create the historical baseline.

Improvements and/or impacts on traffic flows due to interventions both temporary and permanent can then be compared to historic data and other data sources over time and therefore strategies that have an overall positive impact on traffic flows can be identified by analysing and creating visuals of the before and after data in the data platforms. This will feed in to transport policy and traffic management strategies.

We have access to existing bus patronage data from our P&R services, this information can be correlated against any improvements that are provided either by changed routing or the information/travel options we can provide. Again this can be used for before and after analysis of changes to the service.

The iCP currently monitors the number of users subscribed to and using our API. Once the new data is added to the iCP platform we will be able to monitor the impact this has on the uptake of the API. There is a stream of work looking to improve our bus predictions within the iCP with work being undertaken to compare our predictions to reality, the addition of the new data to improving the predictions can easily be assessed.

We will also be able to monitor revenue received by adding value to data through detailed analysis.

C2. Monitoring and Evaluation (maximum 150 words)

The Department expects bidders to set out a clear strategy and commitment to monitor and evaluate the impact of opening the data and share practical experience and knowledge.

We will assess the data infrastructure we have created and create a report on any issues of integrating the various data sources and data platforms. We will assess the quality of data sources and how these can be best utilised in particular regard to data analysis.

As case specific projects arise such as infrastructure projects, we will create and make available reports on the impact of the initiatives and how these can be used to inform decision making/best practice.

We will make available the number of users that are subscribing to our APIs and which data is most utilised as well as the revenue figures generated from processed data and the type of data that is being requested.

We will share experience through a number of networks – including a city forum that meets regularly (Oxford, Exeter, Greenwich, Peterborough), BSI IoT network, Cambridge Wireless and the EEH innovation and Transport groups.

SECTION D: Declarations

D1. Senior Responsible Owner Declaration

As Senior Responsible Owner for DfT open transport data for Cambridgeshire project I hereby submit this request for approval to DfT on behalf of Cambridgeshire County Council and confirm that I have the necessary authority to do so.

I confirm that Cambridgeshire County Council will have all the necessary powers in place to ensure the planned timescales in the application can be realised.

Name: Noelle Godfrey	Signed:
Position: Programme Director, Connecting Cambridgeshire & Smart Cambridge	

D2. Section 151 Officer Declaration

As Section 151 Officer for Cambridgeshire County Council I declare that the scheme cost estimates quoted in this bid are accurate to the best of my knowledge and that Cambridgeshire County Council

- has allocated sufficient budget to deliver this scheme on the basis of its proposed funding contribution
- will allocate sufficient staff and other necessary resources to deliver this scheme on time and on budget
- accepts responsibility for meeting any costs over and above the DfT contribution requested, including potential cost overruns and the underwriting of any funding contributions expected from third parties
- accepts responsibility for meeting any ongoing revenue requirements in relation to the scheme
- accepts that no further increase in DfT funding will be considered beyond the maximum contribution requested
- has the necessary governance / assurance arrangements in place
- has identified a procurement strategy that is legally compliant and is likely to achieve the best value for money outcome
- will ensure that a robust and effective stakeholder and communications plan is put in place.

Name: TOM KELLY, Head of Finance	Signed:

Submission of bids:

The deadline for bid submission is **23.59 on 8 February 2019**.

An electronic copy only of the bid including any supporting material should be submitted to: traffic.comp@dft.gov.uk