Funding for Innovation: Cooperative Intelligent Transport Systems

Application Form

The level of information provided should be proportionate to the size and complexity of the scheme proposed. As a guide, we would suggest around 10 to 15 pages including annexes would be appropriate.

A separate application form should be completed for each scheme.

Applicant Information

Local authority name(s)*: Luton Borough Council

*If the bid is a joint proposal, please enter the names of all participating local authorities and specify the lead authority

Bid Manager Name and position: Keith Dove
Transportation Strategy & Regulation Manager

Contact telephone number: 01582 547211
Email address: keith.dove@luton.gov.uk

Postal address: 4th Floor
Town Hall
Luton
LU1 2BQ

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:

www.luton.gov.uk/highwaysandstreets/transportplanning
SECTION A - Scheme description and funding profile


A2. Headline description:

Please enter a brief description of the proposed scheme (in no more than 100 words)

LutonBC proposes to connect live car park availability data to VMS and to drivers’ satnav systems, directing them straight to available spaces via the most efficient route.

This will reduce congestion, by cutting circulating mileage (hunting for spaces) and inappropriate use of over-trafficked corridors, hence saving time and improving air quality.

The project will also serve as a national proof of concept, developing an interface between highway authorities and the UKs largest fleet of connected vehicles, Vauxhall cars.

It will be majority funded by LBC with all partners already involved at the scoping stage, reducing dramatically the usual project risks.

=100 words

A3. Geographical area:

Please provide a short description of area covered by the bid (in no more than 50 words)

OS Grid Reference: 
Postcode: LU1 2

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.

The project area covers Luton Town centre and all main arterial highway approaches to it.

The map at Appendix D shows the positions of proposed VMS, including upgraded existing dynamic signs within the town centre (to include live routeing information), and new dynamic VMS displays on the main approaches.

= 49 words

A4. Type of bid (please tick relevant box):

C-ITS: Connected Vehicle   X
C-ITS: Real Time Information X
C-ITS: Smart Parking  X
C-ITS: Vulnerable Road Users
Other (please specify)

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 – and the importance of C-ITS technology/innovation in delivering these outcomes.

LutonBC propose to introduce a dynamic VMS and Connected Vehicle system that advises drivers going to the town centre of the location of available parking spaces and informs them of the most convenient (free flowing) route to reach these, transmitting this to VMS and for compatible vehicles direct to the inbuilt satnav.

This will relieve congestion caused by unnecessary circulating traffic and redistribute traffic from over-used to under-used links on the network. In doing so, the scheme will yield benefits in journey time, trip reliability and air quality for all commuters and users of the town, as well as improving the journey experience with good quality information and potentially encouraging appropriate modal shift.

C-ITS will allow the space and congestion data to be fed live to the roadside VMS and will enable the Connected Vehicle element - a proof of concept pilot scheme for the UK in general. Data will be linked from the LBC control centre to the locally based General Motors/Vauxhall control centre which connects to all OnStar equipped vehicles. OnStar’s ‘Destination Download’ function is standard on all current Vauxhalls and LBC will work closely with General Motors, who are a key partner in this scheme.

≈198 words

B2. The Strategic Case (Maximum 350 words)
This section should set out the rationale for making the investment and evidence of the existing transport problems.

In particular please provide evidence on the relevant questions/issues in the accompanying Competition guidance.

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.

What are the current problems to be addressed by your scheme? (Describe any transport, environmental, social problems or opportunities which will be addressed by the scheme.

What options have been considered and why C-ITS may provide the best solution?

What are the expected benefits / outcomes?

Please provide information on the geographical areas that will benefit from your scheme. You should indicate those areas that will directly benefit, areas that will indirectly benefit and those areas that will be impacted adversely.

What is the impact of the scheme?

The Luton Local Plan, currently going through its Examination in Public, will regenerate derelict sites around the Town centre, enabling 4330 new jobs, safeguarding existing ones, and delivering 1993 new homes. The plan will also improve access to the University of Bedfordshire sites and enable expansion of the Mall and relocation of Barnfield College.

However, town centre congestion and inappropriate routeing by current traffic must be tackled to encourage the necessary interest in the 30 hectares of commercial and residential development needed, to safeguard access and to ensure the success of this Local Plan.

Over the past 35 years, strategic highway works have improved the centre’s environment whilst retaining accessibility for a vibrant economy. A ring road around the south, and links across the north-west have facilitated removal of vehicular traffic and created a more pedestrian-friendly environment, including pedestrianisation of George Street and Bridge Street. Opening of the Gateway Link in September 2014 provides an alternative route across the north side of the town and allowed the pedestrianisation of the central section of Guildford Street.

The full potential of this new road is however not currently being used as some drivers still continue to use the southern section of town’s ring road resulting in congestion at some junctions and from there into the centre.

This Connected ITS scheme is targeted to balance the circulation of traffic around the town centre and improve access to the town centre businesses, homes and car parks. It will also better inform drivers of the availability of car parking at Luton Airport as part of the Airport Surface Access Strategy. This will result in improved air quality, an improved traveller experience through journey information and the parking and routeing information may also encourage voluntary modal shift.

Other options considered included traffic restrictions and increased parking tariffs. C-ITS has been selected as it will redistribute traffic to under-used routes and eliminate wasted mileage hunting for spaces, rather than simply force traffic out of the centre. As such, it makes best use of the highway asset and maintains the footfall needed for a viable town centre.

=349 words

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**B3. The Financial Case – Project Costs**

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Before preparing a scheme proposal for submission, bid promoters should ensure they understand the financial implications of developing the scheme (including any implications for future resource spend and ongoing costs relating to maintaining and operating the asset), 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)**

<table>
<thead>
<tr>
<th>£000s</th>
<th>2016-17</th>
<th>2017-18</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>DfT Funding Sought</td>
<td>43.5</td>
<td>30</td>
<td>73.5</td>
</tr>
<tr>
<td>LA Contribution</td>
<td>59</td>
<td>96</td>
<td>155</td>
</tr>
<tr>
<td>Other Third Party Funding</td>
<td>(GM self-funded)</td>
<td>(GM self-funded)</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
1. Department for Transport funding must not go beyond 2017-18 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 only financial input other than DfT is from LBC, and is from existing S.106 contributions held for this purpose.

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**

*(See Appendix B)*

c) Please list any other funding applications you have made for this scheme or variants thereof and the outcome of these applications, including any reasons for rejection. **Not Applicable.**

**B5. The Financial Case – Affordability and Financial Risk** *(maximum 300 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?
A contingency of £75,000 has been allowed in budget preparation – see (b) below

b) How will cost overruns be dealt with?

Firstly by release of contingency budget. The highway authority has already secured S.106 contributions in excess of the £155k budget, and retains the option to release the remainder (up to £50k) to this project if warranted. It is also expected that in the ordinary course of events further S.106 funds will be collected during the project. The consultant is also interested in funding research work under the HMRC R&D Expenditure Credits scheme (up to £25k) should their own element of the work warrant this.

Secondly the project has been designed to allow reduction of scope without sacrificing the key objectives. If necessary, the density/number of VMS can be reduced yet still produce a working interface to infrastructure and vehicles, prove the concept and provide a working system onto which further signs can be added as and when various sources of Council funding allow.

c) What are the main risks to project delivery timescales and what impact this will have on cost?

Many of the normal programme risks such as securing partners and budgets have been mitigated by arranging these in advance of this submission. The capacity implications on supply chain and statutory undertakers are also very light and considered ‘business as usual’. The main partners, LBC, GM and Jacobs are all aware of the scope and implications and have scoped the project to fit comfortably within the 1.5 year timeline.

VMS sign manufacture and supply remains a possible risk outside the core project team, as does consultation or local issues when installing, though these are managed routinely by LBC – i.e. programme implications but not cost. There is also a potential for corporate issues within GM over the use of data in a two-way exchange with the vehicles, though this is removed by containing the scope to I2V only, and not V2I.

=283words

B6. The Economic Case – Value for Money

If available, promoters may provide an estimate of the Benefit Cost Ratio (BCR) of the scheme (particularly for schemes costing more than £100,000)

Where a BCR is provided please provide separate reporting in the form of an Annex to the bid to enable scrutiny of the data and assumptions used in deriving that BCR.

Where a BCR is not available/appropriate other values of value for money should be demonstrated. These should be commensurate with the value of the scheme – examples are set out in paragraph 20 of the Guidance.

The main benefits associated with this C-ITS scheme are:
1. Reduced vehicle kilometreage (hunting for spaces)
2. Reduced town centre congestion as a result of the above and hence reduced delay to other drivers and road users
3. Improved journey time reliability
4. Improved air quality from the above
5. Potential to encourage modal shift through provision of live trip information
6. The Connected ITS scheme will also be used to better inform drivers of the availability of car parking at Luton Airport as part of the Airport Surface Access Strategy.

In order to quantify the benefits, the Council has recently commissioned a survey of all town centre junctions and is planning to update its traffic model of the town centre. Following this, a BCR will be available, founded on solid empirical data.

Given that local highway schemes routinely produce a positive BCR when reducing the sort of congestion which this C-ITS scheme will tackle, and the much reduced cost of technology projects when compared to civil works, a BCR in excess of 4 is anticipated.

This includes time and travel cost reductions for up to 3200 daily drivers parking in on and off street spaces and equivalent benefits for up to 27000 daily travellers on the arterial approaches and in the town centre, based upon recent counts (below are for AADT, above text relates to peaks, during which benefits may be realised due to congestion).

<table>
<thead>
<tr>
<th>Locations on key routes inbound to the town centre</th>
<th>24 hr average weekday traffic volume, combined direction</th>
<th>Road</th>
<th>w/c</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>London Road</td>
<td>20/06/2016</td>
<td>15288</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dunstable Road</td>
<td>20/06/2016</td>
<td>16796</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hatters Way</td>
<td>12/10/2015</td>
<td>29481</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crawley Green Road</td>
<td>20/06/2016</td>
<td>18132</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Bedford Road</td>
<td>05/10/2015</td>
<td>23587</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windmill Road</td>
<td>14/03/2016</td>
<td>23646</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Whilst we await the traffic model updates to populate a formal BCR calculation, we would stress that from a DfT perspective, the benefits are at least trebled when compared to many other schemes, since two thirds of the funding is coming from Luton, not the minimum 5%. The input from GM which will be provided at no cost to DfT will improve this ratio further.

It may be said therefore that the BCR on the DfT funds contributed to this scheme will be around 3 times that of a typical ITS project, so perhaps 12:1 in total.

Subject to funds, the Bedfordshire strategic model will also be used to test detailed benefits of the scheme and as a monitoring tool for ongoing benefits following implementation as the scheme may be expanded by LBC beyond this project.

=315 words (no limit given)

B7. The Commercial Case (maximum 300 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.
*It is the promoting authority’s responsibility to decide whether or not their scheme proposal is lawful; and the extent of any new legal powers that need to be sought. Scheme promoters should ensure that any project complies with the Public Contracts Regulations as well as European Union State Aid rules, and should be prepared to provide the Department for Transport with confirmation of this, if required.

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.

LBC currently works with a number of suitable VMS sign providers and contractors for on-site implementation. These organisations also have in place arrangements for power and communications.

Our partners for the in-vehicle component (GM) and system integration and project management (Jacobs) are also already in place. Particular specialist consultancy, if required beyond our secured partners and their supply chain can be sourced via the Select List of our procurement partner, Guidant.

By identifying the key parties and the LBC S.106 funding, and developing the project scope and this bid submission collaboratively, much of the potential programme risk is eliminated, allowing a ‘hit the ground running’ start immediately after award of funds.

Whilst the technological solutions being proposed here amount to a genuine advancement in what is currently available nationally – a pilot or proof of concept – the procurement routes are low risk and traditional – commercially it is largely ‘business as usual’ for Luton.

≈152 words

B8. Management Case - Delivery (maximum 300 words)

Deliverability is one of the essential criteria for this Competition and as such any bid should set out if any statutory procedures 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.

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.

A Gantt chart of major programme activities is attached at Appendix E, together with the lead partners who will own each task. Senior engagement has been secured throughout the planning of this project, which has already involved a variety of stakeholders culminating in the commitment though the declarations by Senior Responsible Officer and S151 Officer on behalf of the Authority (and project partners GM and Jacobs) in section D below.
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.

The Council’s Corporate Project Management Framework sets out the processes and procedures to be followed throughout a project lifecycle using standard document templates and working practices. Given the scale of this project, together with its location on the southern approaches to the Town Centre, the following Governance arrangements will apply:
- Progress reports to Council’s Town Centre Co-ordination Group (bi-monthly)
- Updates to Members at the Engineering & Street Services Portfolio Holders meeting (monthly)

The Project sponsor and the Project Leader attend both of these meetings and will report project progress as required. The structure showing how these two posts relate to the wider project team is shown below:

Other internal support is provided by the Council’s finance, legal and property (Capital & Asset Management) services.

In addition to the cooperation with GM, a consultancy partner has already been secured.

Global engineering consultancy Jacobs will apply the same project management governance they use throughout the world for system integration projects (such as the technology schemes on Smart Motorway projects for DfT/HE).

In their internal working to supply interface protocols, General Motors will employ the governance rigor of their Product Lifecycle Management processes as applied to the rapid development of all automotive products.

≈245 words
B10. Management Case - Risk Management

Risk management is an important control for all projects but this should be commensurate with cost. For projects where the costs exceed £100,000, a risk register covering the top 5 (maximum) specific risks to this scheme should be attached as an annex.

Risks will be managed in accordance with the Council’s Corporate Strategy for the Effective Management of Risks and Opportunities (2010), which embeds risk management into its culture, process and structure to ensure that opportunities are maximised and objectives are met. In particular the risk management seeks to assess the probability of an event happening and its consequences. Each risk is assessed (from 1 to 9) using the Risk Assessment Matrix which combines the Impact (Critical, Significant, Noticeable) and the Likelihood of Occurrence (Low, Medium, High).

Further details of the application of the Councils risk strategy applicable to this project are included in Appendix C, together with a register of the top 5 risks (with mitigation).

As mentioned previously, our significant investment to date in planning the programme, securing partners and allocating internal funding has provided mitigation for many of the typical risks on projects such as this.

*Please ensure that in the risk register cost that you have not included any risks associated with ongoing operational costs and have used the P50 value.*

Has a risk register been appended to your bid?  

Yes  No

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 technologies 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 could be achieved by logic maps, text descriptions, etc.

This should be proportionate to the cost of the proposed scheme.

The overall approach to the project set out in section B1 of this submission is summarised in Appendix A. This also summarises the generic outputs and outcomes that are specifically identified below:

1. Reduced vehicle kilometreage (hunting for on street and off street spaces)
2. Reduced town centre congestion as a result of the above and hence reduced delay to other drivers and road users
3. Improved journey time reliability
4. Improved air quality from the above
5. Potential to encourage modal shift through provision of live trip information
6. The Connected ITS scheme will also be used to better inform drivers of the availability of car parking at Luton Airport as part of the Airport Surface Access Strategy.

=119 words
C2. Monitoring and Evaluation (maximum 250 words)

Evaluation is an essential part of scheme development and should be considered and built into the planning of a scheme from the earliest stages. Periodic monitoring and evaluating the outcomes and impacts of schemes, in addition to evaluation findings towards the end, is also important to show if a scheme has been successful.

Where possible, bidders should describe any baseline info (or other counterfactual) they will use for the evaluation.

Please set out how you plan to measure and report on the benefits identified in Section C1, alongside any other outcomes and impacts of the scheme. Scheme promoters are expected to contribute to platforms for sharing and disseminating the lessons learned, as directed by the Department for Transport.

As part of its regular monitoring of travel within Luton, the Council already carries out extensive monitoring of travel on all routes in and around the town centre. Journey time information on approaches to and around the Town Centre is available from Trafficmaster data. Costs of all these surveys, and any reporting, together with any other required surveys will be covered by the Council’s annual monitoring programme budget.

We hope also within the project to acquire V2I data (as opposed to the core I2V) which would then give highly granular floating vehicle journey times before and during any interventions, using the same fleet of GM Vauxhall cars that are being sent the routeing information after the system go-live.

It should also be possible to divide the fleet into two at any time (this will happen inherently as some drivers choose to use OnStar and other don’t) and in that way to monitor the benefits in terms of shorter town centre journey times for participants compared to non-participants. This will remove ordinary sources of error and bias such as historical error (the effect from one week to the next of roadworks and other events on the network not related to this project).

Changes in air quality may be monitored via physical stations or by proxy, factoring such benefits from measured improvements in journey times.

= 224 words
SECTION D: Declarations

D1. Senior Responsible Owner Declaration
As Senior Responsible Owner for the Luton Town Centre VMS system I hereby submit this request for approval to DfT on behalf of Luton Borough Council and confirm that I have the necessary authority to do so.

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

Name: ALEX CONSTANTINIDES  
Position: SERVICE DIRECTOR

D2. Section 151 Officer Declaration
As Section 151 Officer for Luton Borough Council I declare that the scheme cost estimates quoted in this bid are accurate to the best of my knowledge and that Luton Borough 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: Dev Gopal  
Signed: 

Submission of bids:
The deadline for bid submission is **5pm, 30 September 2016.**

An electronic copy only of the bid including any supporting material should be submitted to: TRAFFIC.COMP@dft.gsi.gov.uk
APPENDIX A

Diagrammatic representation of the study approach

Establish / Seek Funding

- Project initiation / Scope definition / outcomes
- Concept Development
- Data Collection
- Infrastructure / System ‘soft’ model / test
- Design
- Procurement
- Implementation
- Continued Development

Outputs
- Signing / Routing strategy;
  - New Infrastructure;
  - Scalable system;
  - Testing / Implementation of next generation data sources within a connected environment.

Outcomes
- Improved signing;
  - Data sharing;
  - Innovative implementation of Connected Technologies;
  - Collaborative approach for multiple stakeholder benefit realisation.
Letters of support

Placeholder - Agreed letter from GM has not arrived at the time of submission – this will be supplied upon receipt – for enquiries, please contact the nominated SRO.
APPENDIX C

Risk Register (top 5 risks only)

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Risk</th>
<th>Impact</th>
<th>likelihood of occurrence</th>
<th>mitigation</th>
<th>Impact/likelihood of occurrence after mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Securing competent partners + budgets</td>
<td>Critical</td>
<td>High - engagement of a motor manufacturer in particular</td>
<td>Secure partners and budgets in advance of bid. Develop brief and scope jointly.</td>
<td>Low - mitigated</td>
</tr>
<tr>
<td>2</td>
<td>VMS manufacture and supply delays</td>
<td>Significant</td>
<td>Medium: project team should know within first 3 months of project</td>
<td>Since LBC are funding most of the project, this element could continue to be funded beyond the Q1 2018 calendar year after DfT involvement has stopped.</td>
<td>Low - largely mitigated</td>
</tr>
<tr>
<td>3</td>
<td>VMS cost over-runs</td>
<td>Significant</td>
<td>Low: LBC and Jacobs have recent experience procuring VMS</td>
<td>A contingency fund of up to £75000 (32% of budget) has been planned in, as detailed in main body text. Also, As a demonstrator project, a minimal number of signs will prove the concept. LBC can therefore adjust the number to suit available budget, adding signs to a proven system as and when funds allow beyond the life of this project.</td>
<td>Low - benefits of the full scheme would be delayed with fewer signs, but research goals all achieved.</td>
</tr>
<tr>
<td>4</td>
<td>VMS installation delays (consultation / statutory undertakers)</td>
<td>Significant</td>
<td>Low: Business as usual activity for LBC</td>
<td>Since LBC are funding most of the project, this element could continue to be funded beyond the Q1 2018 calendar year after DfT involvement has stopped.</td>
<td>None - mitigated</td>
</tr>
<tr>
<td>5</td>
<td>Legal or IP issues around supply of connected vehicle data from GM</td>
<td>Significant</td>
<td>Low - Partner engaged already - no problem anticipated</td>
<td>Core scope does not require data from the car, only to it. Data is anonymised and security issues can be achieved using webservices which provide a virtual air-gap.</td>
<td>Low - mitigated</td>
</tr>
</tbody>
</table>

Approach to risk management

C.1 Risk assessment

All highway projects delivered by Luton Borough Council involve an element of risk. It is therefore standard practice to undertake risk assessments at the project initiation phase and to monitor and manage these as the project progresses.

This chapter outlines the methodology for managing risks identified as part of the Dunstable Road scheme. By identifying the risks associated with this project Luton Borough Council will be better placed to prevent those risks from happening and in the cases where this is not possible, be better placed to react and mitigate against their impact.

The application of risk management should be the responsibility of all officers who are working on the scheme, from design right through to implementation. This document and its related risk register will therefore be deposited in a place where it can be accessed by all.

C.2 Risk Management Approach

The standard model for risk management seeks to identify, analyse, plan and manage risk. This approach is embedded within the LBC corporate risk management strategy, which is the basis for all risk management within the organisation.
Risks will not remain static. They will be reviewed at regular intervals and if a risk event occurs. Risks could then be assigned a new risk score.

Within the corporate framework, risk registers are created to assess risk within set areas. Luton Borough Council Highway Authority has its own risk register relating to all highway issues including work on and maintaining the public highway. These risks form the basis for the risk register for each scheme.

All risks are created using a template based on the Luton Borough Council corporate risk management system, JCAD. This system allows all elements of the risk to be entered and will include risk status and risk scores. Risk scores are based on a set risk profile matrix as shown below.
There are different methods for dealing with different types of risk. The strategies for dealing with risk are listed in JCAD and responded to accordingly.

Risks will be assigned to individual officers. This information will be recorded in JCAD and the system will email reminders to officers advising of pending risks to be reviewed.

The project manager will have the overall responsibility for ensuring the risk register is kept up to date and to react to any changes to the status of individual risks. If mitigation is required it will be the responsibility of the project manager to advise the project board.

The contractor is better placed to advise of the status of risks during the construction phase of the project. It is therefore required that a representative for the contractor updates the project board at project review meetings.

C.3 Risk Identification

Within Luton Borough Council there are layers of risk. Risk is identified on three levels as shown below.
The corporate risks are an umbrella of risks that impact across the whole organisation of Luton Borough Council. The Highway Authority risks will encompass some corporate risks but will mainly be focused on the risks that have a direct impact on the public highway and its associated infrastructure. Scheme specific risks drills down further to include risks that are specific to the impact and delivery of each individual scheme.

As highlighted in Risk Monitoring and Control, all risk registers are input into the corporate risk management system JCAD. The JCAD system holds pre-defined categories for risk which are used to suit the needs of each risk register. This system will identify when risks need to be reviewed and will prompt for information to be added if there are any changes to any given risks.

JCAD is a web-based system that can be accessed by all officers.

C.4 Project Specific Risks

Corporately risks are defined based on specific strategy areas such as Political, Financial, Social Environmental and Technological

Highway Authority risks elaborate on this to include the impact of statutory duties, highway users and so on. For the Century Park access road project, the aforementioned risks are considered; however, the focus of the register will be based on events affecting the key tasks and milestones as outlined in the project plan. This includes items such as the critical dates for related projects.

Each of the identified project specific risks have been assessed to establish the probability of the risk occurring and the potential impact of the risk. This information is partly established from ‘lessons learned’ from previous projects of a similar nature.

C.5 Quantitative Analysis

Quantitative analysis will provide information on the potential financial impact of a risk event occurring. However, risk management is embedded into the project management process within Luton Borough Council and therefore the financial impact of risk is included as a contingency within project costs. This approach has proved the most successful due to the nature of highway work.
Geographical Coverage
## Programme

### Note: Major tasks and rolled up tasks include one calendar quarter (3 months) contingency within the main coloured line below

### Programme (calendar years)

<table>
<thead>
<tr>
<th>Lead</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>q4</td>
<td>q1</td>
<td>q2</td>
<td>q3</td>
</tr>
<tr>
<td>q4</td>
<td>q1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### All
- Programme Management: LBC/Jacobs
- Combined system architecture: Jacobs
- VMS supplier assess + procure: LBC
- VMS system architecture: VMS
- VMS civils & streetworks process: VMS
- VMS install: VMS
- VMS commissioning: VMS

### 12V
- 12V system architecture: GM
- 12V interface design: GM
- 12V development environment: GM
- 12V production environment: GM/Jacobs
- System Acceptance Testing: Jacobs

### Handover into maintenance/updates: LBC

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**APPENDIX E**