

Funding for Innovation: Cooperative Intelligent Transport Systems



Department
for Transport

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)*:

Northamptonshire County Council

Bid Manager Name and position:

Ian Achurch, Head of Development Infrastructure and Funding

Contact telephone number: 01604 366057

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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:

<http://www.northamptonshire.gov.uk>

SECTION A - Scheme description and funding profile

A1. Scheme name: Smart Corridor Project – Smart and Connected Parking

A2. Headline description:

Northampton's innovative Smart and Connected Parking project addresses the problems created by on-street parking on a busy central corridor. The project utilises the latest technology including parking bay sensors, which help define areas which are over or under utilised in order to guide drivers to available spaces, on board units, and variable message signs. It will also enable traffic managers to manage the corridor more effectively, particularly during peak periods through tidal flows. It will provide benefits to all road users, including buses affected by parking and cyclists, the local community, and the newly opened Northampton International Academy.

A3. Geographical area:

The Smart Corridor Project – Smart and Connected Parking is focused on the A508 (Barrack Road) running North from the crossroads with the A428. The newly constructed Northampton International Academy is the starting location of the Smart Parking sensors; the exact location can be found at the references below:

OS Grid Reference: SP 75368 61373
Postcode: NN2 6AX

Please see Appendix A for a map of the proposed scheme, existing transport infrastructure and other points of particular interest to the bid, specifically the location of Northampton International Academy, Northampton Town Centre and the Waterside Enterprise Zone.

A4. Type of bid

C-ITS: Connected Vehicle - Yes
C-ITS: Real Time Information - Yes
C-ITS: Smart Parking - Yes
C-ITS: Vulnerable Road Users - Yes

A5. Equality Analysis

Has any Equality Analysis been undertaken in line with the Equality Duty? Yes

SECTION B – The Business Case

B1. The Scheme – Summary/History

The project is seeking to address the problems created by parking, particularly during peak periods, on a busy central corridor. These problems are likely to worsen as a result of significant housing plans and the opening of a new Academy School. The key outcomes sought are to increase the capacity of the corridor, improve journey time reliability (especially for buses), improve safety for vulnerable road users (cyclists) which currently have to avoid parked cars, and address poor air quality. C-ITS is essential in delivering these outcomes as it will enable parking to be managed much more effectively than by using more traditional parking enforcement. By connecting the occupation of spaces to other data including journey times it will also enable capacity to be managed more effectively and tidal flows to be considered. It will include a comprehensive network of sensors. The project will enable accurate real-time information to be provided to traffic managers and motorists (via OBUs and apps) so that street parking is utilised more efficiently, aid parking management, and improve traffic flows delivering benefits to *all* road users. Self-enforcement will be promoted by linking sensors to on-street variable message signs (VMS) that inform drivers of offending vehicles directly.

B2. The Strategic Case

Smart and Connected Parking is part of the wider Northamptonshire Smart Corridor programme. This showcases how the latest C-ITS can deliver transformational outcomes. The focus of the programme is Northampton. It has been chosen because new and innovative approaches are needed to cater for the increased demand for travel and the potential for worsening congestion and associated problems. This aims to extend learning and deployment to other growth centres.

The Kingsthorpe corridor has been selected for Smart and Connected Parking. This is because on street parking currently adds to congestion particularly during the peak hours. There are also concerns that the situation will worsen significantly with major new housing plans coming forward and the opening of a major all through secondary school with the first intake of 360 students in September 2016. Eventually this school will accommodate 2,220 students plus staff and visitors.

By providing information on parking spaces and occupancy to drivers including parents dropping off at school, both on-line and via VMS, the number of drivers driving around looking for spaces will be reduced, as will inappropriate parking. The data collected by Intelligent Parking bay sensors helps define areas which are over or underutilised. With a strategy set within the system, it will be possible to guide drivers to spaces that they were not aware existed, also using journey time data to guide motorists away from congestion (influencing driver behaviour). It will also be possible to optimise parking on the corridor to improve capacity and flows, including looking at tidal flow lanes during the peaks.

Some of the expected benefits include:

- increased capacity;
- better journey time reliability, especially for buses;
- improved safety for vulnerable road users (cyclists);
- better air quality

Further benefits include the potential for providing intelligent parking data for connected and autonomous vehicles and encouraging the adoption of electric vehicles (e.g. by providing EV space availability to vehicles, thus easing the 'range anxiety' and helping to combat issues with emissions). Moreover, there will be avoided costs associated with traditional methods of parking enforcement and helping to address local community concerns regarding the impact of development.

B3. The Financial Case – Project Costs

Table A: Funding profile (Nominal terms)

<i>£000s</i>	<i>2016-17</i>	<i>2017-18</i>	<i>Total</i>
<i>DfT Funding Sought</i>		<i>£235,000</i>	<i>£235,000</i>
<i>LA Contribution</i>	<i>£35,000</i>	<i>£30,000</i>	<i>£65,000</i>
<i>Other Third Party Funding</i>	<i>£0</i>	<i>£0</i>	<i>£0</i>

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.

Northamptonshire County Council has allocated £65,000 from the budget of the Smart Northamptonshire project.

- 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? N/A

- 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.

N/A

B5. The Financial Case – Affordability and Financial Risk

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?

The risk allowance built in the project cost is 10%.

b) How will cost overruns be dealt with?

This will be dealt with in terms of materials and staff time.

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

The main risks to project delivery are highlighted in Appendix 2. The risks will be managed through the Smart Northamptonshire schemes.

B6. The Economic Case – Value for Money

The number of vehicles that will be affected by the scheme can be seen below:

07:00 – 19:00 12hrs traffic flows

Cars	LGV	OGV1	OGV2	Buses	M/C	Cycle
12,191	1,731	195	101	419	92	49

There are a number of reasons for adopting an Intelligent Parking system. Intelligent Parking systems improve driver information and enrich the driving experience; the data produced helps shape traffic behaviour, with the statistics being vital for town planning; emissions and pollution are reduced as a result of reducing vehicles circling around looking for parking; links to enforcement systems could help improve parking compliance. All of these benefits represent excellent value for money, and will have real benefits to all of the users of the corridor.

One of the key benefits of the Siemens Intelligent Parking system is its integration with Stratos, the Siemens hosted traffic management solution. Stratos provides the ability to monitor and control parking spaces, utilising the sensor input for the creation of strategies using road and virtual signs, journey times and environmental information.

Intelligent Parking enriches the driving experience, reducing the time spent in needlessly looking for parking (which in turn also reduces emission and pollution). Having the ability to influence driver behaviour to shape how town traffic flows, using parking statistics to help shape long-term strategies. Shoppers feel more encouraged to visit shops and boost local economy. Drivers are guided away from areas of planned road works, easing congestion. Drivers are guided to spaces they may not have known previously existed.

B7. The Commercial Case

The preferred procurement route for the scheme is through the existing Northamptonshire Highways Services Contract framework with KierWSP, utilising their partnership working with Siemens. The Siemens Stratos platform is currently deployed and used by the ITS team for remote monitor of the county's traffic signals. The additional smart parking module will extend the systems use, making this an effective solution. Delivery through the framework contract will

be the responsibility of the Capital Programme Delivery Board and will be included within the existing Smart Corridors and Smart Commuter projects.

B8. Management Case - Delivery

Delivered as part of the wider Smart Northamptonshire project the delivery of the smart parking project will be split into the 4 project management stages:

Stage 1 – Detailed design

The detailed design will be carried out by our service provider KierWSP through the Highway Services Contract.

Stage 2 – Mobilisation

A mobilisation stage is included to enable the placing of all necessary purchase orders and the preparation of the construction phase documentation.

Stage 3 – Construction

The supply and installation of the smart parking will be carried out at the beginning of the overall construction phase of the Smart Northamptonshire Kingsthorpe Corridor Scheme.

Stage 4 – Post Completion

The post completion survey will include all necessary site validation and acceptance testing.

B9. Management Case – Governance

Northamptonshire County Council's project governance arrangements for this scheme are headed up by a Capital Programme Delivery Board which acts as the co-ordinating body for the delivery of the authority's total highways capital programme. The Capital Programme Delivery Board is a high-level structure which oversees the delivery of all transport capital schemes across Northamptonshire, co-ordinating overall programme resources to ensure coherence in scheme delivery, particularly where different promoting partners are involved. For this scheme the Senior Responsible Owner is a member of the Capital Programme Delivery Board. The Delivery Board works through a Capital Programme Delivery Unit (CPDU) which provides clear governance and project management guidance and co-ordinates progress of all projects moving forward.

Specific governance for this scheme will be controlled by a Project Board comprising of key senior members from the delivery organisations representing the client, consultant, the CPDU and the contractor. The Project Board meets in a steering role on a monthly basis, to monitor the delivery of the key stages of the scheme and taking an overview of delivery based on exception reporting.

Delivery is directly the responsibility of the Project Board. The Project Board is also responsible for setting the scheme budget against the identified key stages and ratifying all communication with stakeholders and elected members. With the assistance of Project Assurance staff, it is also responsible for ensuring all corporate procedures are followed and reviews the scheme against the policies and objectives of the County Council.

B10. Management Case - Risk Management

Has a risk register been appended to your bid?

Yes, a risk register is included as Appendix 2.

SECTION C – Monitoring, Evaluation and Benefits Realisation

C1. Benefits Realisation

This project is expected to generate a number of benefits including:

Reduced congestion and improved traffic flow for all road users: the County Council has traffic surveys from 2015 that can be used as “before” data. We will also seek data from existing traffic counts to contribute to baseline data and take account of the new Academy’s impact on flows. We will replicate the data in order to establish changes;

Enhanced network reliability for bus passengers: we have real time passenger information and bus punctuality data which can be compared as “before” and “after” the implementation of the project;

Improved air quality along the transport corridor: monthly data on air quality is collected by Northampton Borough Council which can be compared as “before” and “after” the implementation of the project;

Improved road safety for all road users: the baseline data will be road traffic accident data 2015/16 which can be compared to data collected post-implementation of the scheme;

Increase in walking and cycling: Northamptonshire County Council collects cycle monitoring data and pedestrian data, as well as details on cycle hire usage. This can also be compared as “before” and “after” the implementation of the project; and

Improved user experience/customer satisfaction: feedback will be collected in order to ascertain how successful the project is and whether people perceive a positive change from what has been implemented.

C2. Monitoring and Evaluation

Monitoring and evaluation is a critical element of the wider Smart Commuter concept, as getting real time information to the public is fundamental to the projects ongoing success. A Travel Portal is currently in development in order to tie together all of the monitoring and evaluation from every aspect of the Smart Commuter project. This includes details on congestion and traffic flow, network reliability, air quality, and road safety. All of this will be tracked over time to demonstrate how it changes. Included in this will be the pure parking elements that are specific to the Smart and Connected Parking project. This information will be online for the public to view in real time, and for any other interested parties to review (both live and historical data). This will transparently demonstrate the effectiveness of the project, and whether the benefits realisations detailed in C1 are achieved.

SECTION D: Declarations

D1. Senior Responsible Owner Declaration

As Senior Responsible Owner for Northampton's Intelligent Parking Project I hereby submit this request for approval to DfT on behalf of Northamptonshire County Council and confirm that I have the necessary authority to do so.

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

Name: Ian Achurch

Signed:

Position: Head of Development Infrastructure and Funding



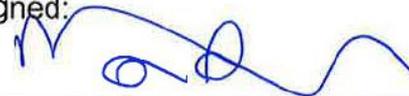
D2. Section 151 Officer Declaration

As Section 151 Officer for Northamptonshire County Council I declare that the scheme cost estimates quoted in this bid are accurate to the best of my knowledge and that Northamptonshire 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: Matt Bowmer (LGSS Director of Finance, Section 151 Officer Northamptonshire)

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 1: Map of the Kingsthorpe Road Smart Corridor



Appendix 2: Smart Parking Risk Register

Tender Risk Management Book

RISK REGISTER																		
Project name		Smart Parking				Project No		TBC				Employer					NCC	
Risk no.	Risk <i>(the risk is that.....)</i>	Consequences of uncontained risk <i>(time/cost etc)</i>	Mitigation measures <i>(to reduce effects of risk)</i>	% Likelihood of occurrence	Likelihood of occurrence	Impact of occurrence	Importance	Cost of risk if it occurs £k				Risk allowance £k <i>(maximum / allowance)</i>	Risk Owner <i>(organisation)</i>	Responsibility <i>(person)</i>	Notes	Risk no.		
								Optimistic	Most Likely	Pessimistic	Statistical <i>(negative distribution)</i>							
1	Traffic Regulation Order objections	Programme delay and design change	Liaison with stakeholders	30%	Likely	Medium	Medium	2	5	10	5.7	1.7	Employer	PM		1		
2	Road Safety Audits	Programme delay and design change	Early design fix and integrated audits	50%	Likely	Low	Low	5	10	20	11.7	5.8	Employer	PM		2		
3	Excessive traffic congestion during construction	Additional cost and programme delay	Reactive traffic management and reduced working hours or night working	50%	Likely	Medium	Medium	1	5	10	5.3	2.7	Employer	PM		3		
4	Pedestrian/vehicle conflicts during construction	Programme delay and design change	Non motorised user audits	10%	Unlikely	Medium	Low	1	2	3	2.0	0.2	Employer	PM		4		
5	Performance of finished scheme not as expected	Additional cost	Transport modelling	10%	Unlikely	High	Low	2	5	10	5.7	0.6	Employer	PM		5		
6																6		
											Total (K)	£11						

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