SMART Places – Live Labs Competition Winners

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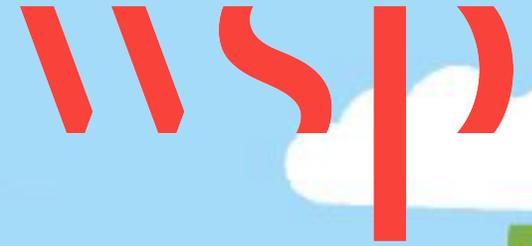
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RINGWAY

Lead Authority	Partners
Buckinghamshire	Ringway Jacobs, Transport Systems Catapult, Aylesbury Garden Town, Aylesbury Vale, Coldharbour Parish, EEH, Bucks & Thames Valley LEP, Enlight
Title	Creating a SMART Connected Community in Aylesbury Garden Town, Bucks.
Pitch	A SMART Connected Community project at Fairford Leys, Buckinghamshire. The project will combine a range of technological solutions, each complementing the other, implemented over time to help BCC deal with a range of complex and inter-related needs, all within this well-defined setting. The project will bring together learning and experience from both the public and private sectors in the UK and globally, to test innovative materials, communications, energy and mobility solutions, broadly grouped into 4 key project elements. The success of the Live Lab will be measured using quantitative performance data and feedback from residents, which will inform future strategies which can effectively be replicated across the Garden Town, Buckinghamshire and ultimately, widely in other similar urban settings.
Location	Fairford Leys, Aylesbury
Highlights	• Illuminated Data Access Points (iDAP): 170 recycled, composite, data / sensor / light / EV col's • Smart Communications using iDAPs and Central Management Systems for air quality, temperature, gullies, etc. • Road / pavement energy generation, kinetic, solar and wind + storage and charging • Integration with AMEY AV pod proposal + 10 hire eBikes • Future ready for 5G and EV
Funding	£4.49m
Innovation	• New materials and 3D printing for columns • Energy generation and storage • Integration with 5G programmes

Buckinghamshire

Lead Authority	Partners
Central Bedfordshire	Ringway Jacobs, Morgan Sindall, Jacobs, Vinci
Title	Power Roads – Harvesting renewable energy from solar, kinetic and thermal source
Pitch	An unrivalled opportunity to test the performance of innovative materials and systems to harvest renewable energy. CBC is working in collaboration to install, monitor, and evaluate test sites as part of their capital programme of works. The test sites will encompass three types of energy generation; solar, kinetic and thermal. The live labs will review construction techniques, maintenance protocols, and measure energy generation, storage, and distribution. Revenue models will be developed as part of the trial, as well as enabling best practice guidance for both installation techniques and prediction of benefits
Location	Key development and connectivity projects in Central Bedfordshire
Highlights	• A421 Project: It is proposed that the surfacing of the footway be surfaced with a material containing solar power capability as a trial for creating and storing energy • Flitwick Town Centre: Install new surface to footway in Flitwick town centre (approx. 802m2) using a surface course with solar or kinetic power capability. • A421 Project: Install 'Power Road' solution developed by Vinci to power infrastructure and as a de-icing solution in sub-zero weather conditions.
Funding	£1.05m
Innovation	• Energy generation, storage and use in local roads sector – lighting, de-icing • Mitigating rising energy cots through technology • Overcoming fear of failure

Central Beds.

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Cumbria

Lead Authority	Partners
Cumbria	DSD Limited, University of Nottingham, University of Central Lancashire (UCLAN), University of the Sunshine Coast - Queensland, Australia, University of California - California USA, MacRebur Limited, Gaist Solutions Ltd
Title	Developing the use of plastic roads on the local road network
Pitch	To develop a process for the selection and testing of plastic in surfacing and structural treatments on the local road network from minor patching work and pothole repairs through to major surfacing. To provide an innovative and cost effective solution that will assist councils across the UK and abroad and provide a catalyst for use of recycled single use plastic in roads. A guidance document and App based solution will be used for the design and specification of plastic asphalt.
Location	Cumbria
Highlights	• Test and trial using single use recycled plastic • Integrates local waste and highways functionality • Uses existing production facilities • Publication of guidance for selection and use
Funding	£1.6m
Innovation	• App based, suite based approach • International products • Academic support

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Lead Authority	Partners
Kent	Amey, Birmingham Univeristy, Map 16, UI, Rezatec **NOTE – THIS IS A JOINT PROJECT WITH STAFFORDSHIRE COUNTY COUNCIL**
Title	Local Highways Asset Management Technology Incubator
Pitch	This project provides answers two key needs within innovation and asset management on the local network: firstly, the creation and management of a centralised digital hub for all asset management data, presented within a unified dashboard, with the resource and software to analyse linkages and broker information between co-operating parties. Secondly the incubation and scale of data-led service re-design, combining dynamic network sensors, with the central hub to provide commercially viable alternatives to cyclical and reactive maintenance.
Location	Kent
Highlights	• Asset Management Control Hub - SAMMS, Drainage and Winter sensors • SAMMS Capability to predict areas of high risk terrain degradation whereby transport, energy and urban systems will be disrupted • SmartDrainage is the second sensor based service that will be feeding back into the control hub • SmartWinter installing 120 road surface sensors to feed the hub • temperature sensors (RST) • Late-stage SME smart technology scale up
Funding	£3.95m (shared with Staffordshire County Council)
Innovation	• Platform based approach to 'smart' predictive asset management • IoT sensors at scale in the road way • Technology to deliver scalable efficiencies

Kent

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Lead Authority	Partners
Reading	Siemens, University Of Reading, O2 Telefonica, Peter Brett Associates, Wyra, Smarter Grid Solutions, Wokingham BC, Bracknell Forest Council, West Berks Council, Slough BC, Royal Borough of Windsor, Thames Valley LEP, Shoothill
Title	Thames Valley Living Lab
Pitch	Berkshire local authorities plan to build over 500 new homes per year over the next decade. Critical infrastructure is already under stress. Deploying connected vehicles and communications infrastructure enables optimisation of traffic flow tackling congestion, air quality and road surface problems, allowing growth in population and employment. Combining location information with smart energy monitoring will improve the resilience of the local energy grid. The sustainability of the approach will be tested with a novel, replicable commercial model that will create a shared revenue opportunity for local government.
Location	Thames Valley Berkshire Local Enterprise Partnership Area.
Highlights	• Utilise existing infra. and smart coms tech. and data from Intelligent Mobility partners • Existing sources of data from traffic signal detectors and Bluetooth journey time units will be fused with mobility data from O2 and traffic signal data • The live data will be fused with the current transport network data to derive a multi-modal view of real time movement across the Thames Valley • The real time and historical data will inform transport, environment and planning • projects throughout Thames Valley
Funding	£4.75m
Innovation	• Integrated approach to large scale data management to inform networks • Wide area coverage and application • Open approach to data sharing

Reading

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Lead Authority	Partners
Solihull & Birmingham	Transport for West Midlands (TfWM), Hanwha Corporation, T.I.S (Mansfield) Ltd, 4sight Imaging, Birmingham City Uni.,, Walsall BC, Sandwell MBC, Warwickshire
Title	#KeepWestMidlandsmoving – A collaboration of regional proportions unlocking analytics.
Pitch	The West Midlands is changing rapidly. Population is forecast to grow by nearly half a million by 2035. HS2, Metro, Sprint and cycle corridors are on the way. The disruption will be worth it as we want to make the West Midlands the best region in the UK to do business. We want to fully utilise analytics to keep people moving and empower others to use it. We want to use our assets better, helping other local authorities to navigate tricky legal issues and risk. We want to listen to residents and tailor targeted messaging so they may make informed travel choices. We will provide infrastructure and joined up messaging. Then it's up to our residents, businesses and visitors to choose what they can do.
Location	Key local road corridors, including the Key Route Network and key feeder roads in Birmingham, Solihull, Walsall, Sandwell and potentially Warwickshire
Highlights	• Data from video analytics pilots in 10 selected local road corridors, collect, analyse and model. • Using video analytics to work out point to point vehicle journey times during different times • ANPR recognition + other features and colours e.g. logistics company brands • Analytics through to push messaging via existing apps to message to target segments • Look at human behaviour using ethnographic and market research
Funding	£2.65m
Innovation	• Data and AI / analytics led approach to influencing travel /mobility behaviour • Wide area / corridor coverage • Integration with existing programmes & initiatives

Solihull & Birmingham

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Lead Authority	Partners
Staffordshire	Amey, Keele University, UI **NOTE – THIS IS A JOINT PROJECT WITH KENT COUNTY COUNCIL**
Title	Transport Systems Living Live Lab
Pitch	This project addresses the issue of how the concept of a Smart Highways network can be extended from primary roads to a local road network. The project will be developed around the private road network on the "small town" living laboratory of the Keele University campus. The project will develop, test and demonstrate how such a network can be enabled to retrofit Smart Highway design, construction and maintenance to support the use of alternative approaches to both people and freight transport. A Control Centre to function as an asset and data manager will be integrated with sensor and control technologies. The living laboratory will be adjacent to a proposed public transport hub to enable rapid roll-out of development.
Location	Keele University campus
Highlights	• Focus on the development, testing and demonstration of Smart infra. and its interaction with new service propositions, CAVs and people and alternative fuels • Establish a new control centre to act as an asset manager and data broker • Integration with the deployment of sensors across the campus road and energy network • Live-lab will provide a 'base-line' of interconnectivity, information and data collection capability, which can be leveraged by users looking to test new technology and services
Funding	£3.95m (shared with Kent County Council)
Innovation	• Building on the existing £15m BEIS / EU investment in a "small town" living laboratory for a Smart Energy Network Demonstrator (SEND) • Campus / small town environment integrating energy and mobility • Academic / student engagement

Staffordshire

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Lead Authority	Partners
Suffolk	Kier, Kier Housing, University of Suffolk, Proving Services & Future Highways Research Club, CU Phosco, Telensa, enLight, BT, BSi, ILP, HEA
Title	A Smarter Suffolk
Pitch	Suffolk County Council has an excellent record of introducing award-winning innovation to the highways sector – including a traffic signals-based 'dark fibre' network and transformative, pioneering street lighting technology. Early adoption of large-scale, remotely managed node technology has yielded highly effective, energy-efficient light distribution. Our successful small-scale, rigorous field testing of motion-sensitive adaptive lighting is now set for significant upscaling. This presents an outstanding opportunity to examine smart technology capability across Suffolk's urban and rural environment, combined with fully exploring how any authority's street lighting infrastructure adopts a far broader social function and potentially act as a future income generator.
Location	Suffolk's urban and rural highway network, building on the planned European Union part-funded roll-out of adaptive street lighting in Ipswich, expanding into the suburb of Kesgrave
Highlights	• Renewable Energy – Rural Environments • Sensor Ready and Future-Proof Infrastructure • Communication Networks • Hub for Sensor Data & Sensors • Lighting, environment, gillies, assets, adult & social care, estate
Funding	£4.41m
Innovation	• Upscaling of existing proven programme • Integrated approach to network assets, building assets and vulnerable citizens • Concession framework approach to commercial roll-out

Suffolk

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