READING BOROUGH COUNCIL

REPORT BY DIRECTOR OF ECONOMIC GROWTH AND NEIGHBOURHOOD SERVICES

TO:	POLICY COMMITTEE		
DATE:	10 JUNE 2019		
TITLE:	PROJECT FUNDING AWARD – ADEPT/DFT £4.75M GRANT FUNDING FOR THAMES VALLEY BERKSHIRE LIVE LABS		
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1. EXECUTIVE SUMMARY

1.1 The purpose of this report is to inform Members of the Committee of a £4.75M grant award from the Department of Transport (DfT) through the Association of Directors of Environment, Economy, Planning and Transport (ADEPT) for a two-year technological trial to help futureproof roads and transport.

1.2 The project (*Thames Valley Berkshire Live Labs*) objectives are to deploy data science and Internet of Things (A network of internet connected objects able to collect and exchange data – commonly abbreviated as IoT) in Reading and across Berkshire to boost productivity, improve health and travel conditions.

1.3 This innovation initiative will trial technologies and working practices to tackle issues impacting on Reading and the wider Berkshire area productivity and population incorporating health, congestion, air quality, road surface quality and potholes, energy consumption and carbon emissions. The project aims to harness the value of data to demonstrate how to make a measurable difference to the health of the region's population and the operational efficiency of the region's road network, whilst reducing CO2 emissions and improving the region's productivity.

1.4 The grant award has been accepted and half the funding has already been received with the remaining funding expected later this year. The project has essentially commenced with our mobilisation plan delivered to the

ADEPT/DfT programme board on 10th May 2019. This report seeks approval to spend the grant in accordance with the project objectives and the grant conditions.

2.	**RECOMMENDED ACTION**
2.1	**That the Committee note the contents of this report.**
2.2	**That the Committee gives scheme and spend approval for the *Thames Valley Berkshire Live Labs project* totalling £4.75M of grant funding to deliver the objectives of this 2-year technological trial.**
2.3	**That delegated authority is given to the Executive Director for Economic Growth and Neighbourhood Services, the Assistant Director of Legal & Democratic Services and the Assistant Director of Finance to enter into contracts as are required to deliver the project objectives.**
2.4	**That further reports on progress of each project theme be reported to the relevant Committees.**

3. **POLICY CONTEXT**

3.1 This is an innovation initiative for a 2-year technological trial to help futureproof roads and transport which is aligned to current central government and local government policies. The local objectives also meet the broader vision of the council's Local Transport Plan (LTP).

4. **BACKGROUND, PROPOSALS AND RECOMMENDATIONS**

4.1 This report informs Members of the Committee of a £4.75M grant award from the DfT through ADEPT. The grant award is for a 2-year project under the title – *Thames Valley Berkshire Live Labs.* The project objectives are to deploy data science and Internet of Things ((A network of internet connected objects able to collect and exchange data – commonly abbreviated as IoT) in Reading and the wider Berkshire area to boost productivity, improve health and travel conditions.

4.2 This innovation project will trial technologies and working practices to tackle issues impacting on Thames Valley Berkshire productivity and populations health - congestion, air quality, road surface quality and potholes, energy consumption and carbon emissions. The project aims to harness the value of big data, IoT and data science to demonstrate at scale how to make a measurable difference to the health of the region's population and the operational efficiency of local authorities, whilst reducing CO2 emissions and improving the region's productivity.

4.3 The project spans the unitary authorities of Berkshire, focusing on five inter-related themes: pot holes, air quality & exposure, traffic flow, energy and health. Each of the 5 project areas are described as:

- Potholes & Road Surface Quality
  The impact of potholes stretches far beyond a minor inconvenience for motorists. They exacerbate noise issues from larger vehicles in residential areas, leading to disturbed sleep and negative impacts on health, wellbeing and productivity. Road maintenance remains a significant challenge for local highway authorities; it is 20 times more expensive to carry out reactive maintenance than planned, preventative maintenance.

  This project will fuse a variety of data including O2 mobile phone data, local authority traffic systems data, GeoTab telematics data (GPS Fleet Tracking) and existing traffic sensor data. The developed platform will inform local authorities of the most heavily used routes with the poorest road surface quality, this will be presented in a web-based interface to help the local authorities take a planned, preventative approach to road maintenance.

  The Thames Valley Berkshire Live Lab project will establish a link with the Cumbria Live Lab project to share learning on this area. We anticipate using research and insights from the Cumbria Live Lab project to investigate the feasibility of using locally-sourced non-recyclable plastics to reduce the carbon impact of road surfacing and repair. A potential source of non-recyclables will be through the Berkshire based Re3 waste contract for Reading, Wokingham and Bracknell Forest Boroughs.

- Air Quality & Public Exposure
  The relationship between transport, pollution and local air quality is complex. Poor air quality is a significant environmental risk to public health in the UK. Long term exposure (years) reduces life expectancy due to respiratory diseases and lung cancer, whilst short term exposure (hours/days) exacerbates asthma and increases cardiovascular and respiratory hospital admissions. Providing people with better information about air quality is important so they can make informed choices to reduce their exposure, for example taking different walking or driving routes to work and school.

  This project will develop an innovative approach for measuring air quality and corresponding public exposure to NOx, particulate matter (PM10 and PM2.5) and CO emissions in the study area. An innovation competition will run in parallel to create an engaging way to disseminate the insights.

  Siemens has completed a market scanning and field testing programme and will deploy up to 36 sensors across 6 or more pilot locations including the A4 and A322/A329 corridors and other locations to be determined such as around schools, potholed roads etc. Each location will be monitored for a minimum of three to six months, before sensors are moved elsewhere, allowing a detailed dataset across a range of different pilot use cases to be established. The visualisation and modelling of public exposure will form one of

the WAYRA challenges (Advancing healthcare through digital innovation).

- Traffic Flow
  The project establishes a real time view of traffic flow to improve network management. Data from existing detection infrastructure (traffic system loop counters, Bluetooth journey time monitors and Automatic Number Plate Recognition (ANPR) cameras) will be combined with data capture methods deployed for this project. The combination of these datasets will create a real time view of network activity, providing previously unavailable information about trip types, origins and destinations and how incidents affect the network. This will facilitate better management of the network to improve journey times, reduce pollution and respond dynamically to changes in traffic flow and incidents. The platform will allow all modes to be considered and targeted interventions to be delivered. By example; optimising the network to improve air quality around schools and smoothing flow in the areas that have the most benefits for people. The project will focus on key areas including sections of the A4 and A322 that pass through most of the Berkshire local authority areas. This is alongside other areas such as around schools or major employment areas. Over the course of the project the net benefits are anticipated to grow through increased data levels, machine learning and as changes in user behaviour become more common.

- Energy
  The growth of Electric Vehicles (EVs) and onsite renewables is a positive step in tackling carbon emissions, yet supporting infrastructure needs to ensure these systems are run efficiently to maximise energy and carbon saving opportunities. We, along with other Berkshire UAs, are converting to Electric Vehicles (EVs) and installing charging points to reduce their carbon impact. EVs substantially reduce the carbon impact of each trip (by about 50% based on current UK electricity generation mix), eliminate NOx pollution, and reduce particulate emissions by c50%. However, they are not zero emission and so for the local authorities to maximise the environmental benefits of EVs they need to optimise both when vehicles are used, to minimise electricity use, and when vehicles are charged, to maximise the proportion of renewable energy drawn.
  The project will deliver a high-functionality, high value demonstration of the integrated, smart transport and energy digital platform with applications for dashboards, analytics, optimised operation and planning at selected Local Authority sites.

- Health
  All of the deliverables of this project impact on health, and the proposal here is to create a dynamic public health risk tool and trial it within our area. O2 and the University of Reading will work with an innovation partner to build the tool, who will be appointed using an

open innovation call. Integrating mobility data from the project, open data and local authority data, insights will be created that measure public health risks. By mapping public health risk we will be able to see where future public health costs will emerge from. It is the creation of insights when looking at these datasets in combination that reveals a new perspective on the causes of public health issues – in particular obesity, respiratory disease, loneliness and frailty. These insights will enable targeted interventions specific to both the area and the underlying issues to be monitored for their efficiency.

4.4   The project incorporates an innovation competition for local start-ups and Small to Medium size Enterprises (SME's) who will be awarded funding to address the issues and challenges related to potholes, local travel choices, local pollution and congestion. The two year £4.75M project is funded in its entirety by the Department for Transport therefore there is no match funding requirement from the Council.

4.5   The proposed main project partners are Reading Borough Council and the other Berkshire authorities, O2, WAYRA (Health technology), PBA (Programme managers), Siemens, Shoothill (custom software development), Smarter Grid Solutions (distributed energy resources management systems), Thames Valley LEP and Reading University.

4.6   The intention is that the project will be delivered through the main project partner O2, with RBC as grant holder and the client. The proposal is that O2 will create contracts with all other delivery partners and any other sub-contractors. Contract and procurement issues will be reviewed by our in-house legal and procurement resource as a part of the overall risk management and governance of the project.

4.7   It is proposed that O2 will assume responsibility for overall project management in partnership with PBA. O2 propose to resource a Project Manager with extensive in field technology deployment experience who will lead the project Steering Group. They will have support from the O2 smart cities team and other specialist contractors such as our current traffic systems supplier Siemens.

4.8   As lead partner RBC has overall responsibility for Project Governance and Scrutiny to ensure that the project Grant funding is spent in accordance with local authority requirements for spend scrutiny and in accordance with the conditions of grant. The grant will also be utilised to fund a dedicated RBC Project Manager to take on overall responsibility as client of the project for the Council.

4.9   A quality assurance process will be set up to check all documents produced by the project to report on outcomes and the benefits of the project. This is proposed to be set up by O2 and PBA who are quality assured to ISO 9001. Suitable peer reviewers will be selected from within the project to

undertake this checking and where the University publishes research outputs these will be externally peer reviewed using their systems.

4.1 Policy committee is asked to grant scheme and spend approval to this innovative project with delegated authority to enter into contracts to deliver the project objectives.

5. CONTRIBUTION TO STRATEGIC AIMS

5.1 These proposals contribute to the Council's strategic aims of:

- Safeguarding and protecting those that are most vulnerable
- Providing the infrastructure to support the economy.
- Keeping the town clean, safe, green and active.
- Remaining financially sustainable to deliver these service priorities

These proposals also contribute to developing Reading as a Green City with a sustainable environment and economy at the heart of the Thames Valley.

The proposals will fully support the aspirations of the Council under the declared Climate Emergency

6. COMMUNITY ENGAGEMENT AND INFORMATION

6.1 The project requires community engagement for it to be successful. The funding award encourages community involvement with opportunities to get involved through live trails as they develop.

7. LEGAL IMPLICATIONS

7.1 Funding will be paid as grant under Section 31 of the Local Government Act 2003. The conditions attached to the Local Transport Capital Block Funding (Integrated Transport and Highway Maintenance) Specific Grant Determination 2019/20 No 31 apply to this grant award. The project has been awarded as part of competitive process where the DfT received 28 separate bids. Our award is one of 8 projects to receive this grant funding.

7.2 The DfT have indicated that there are no State Aid issues due to the competitive bidding process and the nature of this as a research and development project. However, the council will need to satisfy its legal requirements respect of receiving and distributing the grant funding before entering into any contracts, also that contracts entered into are compliant with the council's Contract Procedure Rules and the Public Contracts Regulations 2015.

7.3 Match funding is not part of this project therefore the £4.75M grant is the total funding for this project.

8. EQUALITY IMPACT ASSESSMENT

8.1   In addition to the Human Rights Act 1998 the Council is required to comply with the Equalities Act 2010. Section 149 of the Equalities Act 2010 requires the Council to have due regard to the need to:-

- eliminate discrimination, harassment, victimisation and any other conduct that is prohibited by or under this Act;

- advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it;

- foster good relations between persons who share a relevant protected characteristic and persons who do not share it.

8.2   The Council does not consider that the proposals will have a direct impact on any groups with protected characteristics. However, this will be reviewed as a part of the project implementation and assessed throughout as appropriate.

9.   FINANCIAL IMPLICATIONS

9.1   This project is a £4.75M grant awards from the DfT as explained within this report. There is no match funding requirement placed on local authorities so the project funding shall not exceed the grant award. The Council will assess and monitor all aspects of this project including the finance as a part of its internal governance processes.

10.   BACKGROUND PAPERS

10.1 None.