

CABINET
19 APRIL 2018**WORCESTERSHIRE 5G CONSORTIUM**

Relevant Cabinet Member

Dr K A Pollock

Relevant Officer

Director of Economy and Infrastructure

Recommendation

1. **The Cabinet Member with Responsibility for Economy and Infrastructure recommends that Cabinet:**
 - (a) **endorses the work undertaken by Worcestershire Local Enterprise Partnership (WLEP), Worcestershire County Council and other partners in the successful application and entry into the Department of Digital, Culture, Media and Sport's (DCMS) Phase One of the 5G Testbed and Trials programme;**
 - (b) **notes the award of the grant from DCMS of £4.81m and the role of Worcestershire County Council as the lead partner and accountable body for WLEP, managing the programme, assuring and financing partners claims and drawing down the funding;**
 - (c) **recommends Council notes the additional £4.81m income and matching expenditure that will form part of the Economy and Infrastructure revenue budget in 2018/19, for this project;**
 - (d) **notes and accepts both the potential opportunities and risks that are identified within this report;**
 - (e) **authorises the Director of Economy and Infrastructure in consultation with the Head of Legal and Democratic Services to finalise and agree the necessary agreements to progress and support the programme; and**
 - (f) **authorises the Director of Economy and Infrastructure to take necessary actions to progress and support the Worcestershire 5G Consortium, including support investigations for alternative funding sources to potentially extend the project.**

Why is this decision important?

2. **The Worcestershire 5G Consortium has been successful in its bid for Government funding to test and explore 5G (fifth generation). Understanding of 5G technology is**

emerging, it will build on the foundation created by 4G Long Term Evolution (LTE), the current standard. This has the potential to revolutionise the Internet of Things (IoT).

3. From its launch, the Worcestershire 5G Consortium will begin one of the country's most comprehensive industrial 5G Testbed trial with a team of 5G specialists and business experts pioneering the concept of 'Industry 4.0' i.e. the current trend of automation and data exchange in manufacturing technologies. The consortium of partners includes national network operators and research and development facilities.

4. The 5G Testbed will provide a revolutionary platform for local and national businesses to develop next-generation technology focused on improving the UK's industrial productivity. Founder companies Worcester Bosch and Yamazaki Mazak have already been selected to experiment with preventative and assisted maintenance using robotics, big data analytics and augmented reality. QinetiQ, the multinational defence technology company, will use the Test Bed to advance cyber security application, providing assurances on the 'security by design' of "Internet of Things" (IoT) technology.

Background

5. Worcestershire is one of the fastest growing economies in the country. As part of the 'Open for Business' agenda and promoting World Class Worcestershire, the County Council works in conjunction with Worcestershire's Local Enterprise Partnership (WLEP) on programmes and projects that drive economic growth for the County, as part of the Strategic Economic Plan. In November 2016 colleagues in Worcestershire, including representatives of Cabinet, WLEP Board, senior County Council officers and partners from the local district councils, identified that Digital Connectivity would continue to be an important strand of this work and in particular noted the opportunities presented by the development of 5G technologies.

6. Since November 2016, considerable work has taken place developing the connectivity plans within Worcestershire. This preparatory visionary work was given a 'call to action' in the shape of a national funding programme launched by the Department for Digital, Culture, Media and Sport (DCMS) which invited applications for funding for a Phase One 5G Testbed and Trials Programme.

7. The Worcestershire 5G Consortium submitted one of only six successful bids into Phase One of the Government's 5G Testbed and Trials programme to test and explore 5G connectivity to revolutionise the way future business will operate both in the UK and globally. The Worcestershire 5G Consortium has secured £4.8m in grant funding from the Government, and £3m in contributions from the partners over an initial 12 month period to deliver one of the country's most comprehensive industrial 5G testbed and associated trials. This could give Worcestershire businesses the opportunity to be at the forefront of innovative new technologies with the aim of creating new jobs, educational programmes and driving internal investment into the county.

Project Summary

8. The aim of the project is to deliver a quantified assessment of how 5G technology can increase industrial productivity and support new business models.

9. The testbed will comprise of 5 individual and interconnected indoor test areas located at:

- Yamazaki Mazak;
- Worcester Bosch Group;
- QinetiQ Malvern;
- Malvern Hills Science Park (MHSP) (also outdoor mast planned);
- Heart of Worcestershire College (planned as next phase connection).

10. The businesses and organisations at these sites are part of the 'trials' and are supported by the other partners in the bid including; Telefonica, BT, Huawei, AWTG and 5G Innovation Centre at the University of Surrey. WLEP and Worcestershire County Council take on the role of lead partners managing the programme, processes and coordinating activity.

11. With Worcestershire as the exemplar, the benefits of this investment will be:

- to put the Midlands Engine at the heart of the UK in Advanced Manufacturing
- to stimulate use cases to improve productivity and improve underperformance;
- used as a fundamental building block of the Midlands Engine Vision for Growth and our response to Section 2.19 of Government's Midlands Engine Strategy and
- to help to bridge the £54bn gap in productivity.

12. Within the 5G testbed trials, local businesses, namely Worcester Bosch and Yamazaki Mazak, will focus on ways to increase industrial productivity through preventative and assisted maintenance using robotics, big data analytics and Augmented Reality using 5G technology. The cyber security aspect involves QinetiQ providing assurances on the 'security by design' of 5G and IoT technologies.

13. Whilst the initial trial focusses mainly on 'industry' and 'security' type applications of 5G technology the social benefits it may present are not being overlooked. The project includes work with the Heart of Worcestershire College and University of Worcester, seeking to establish new content and courses to ensure local students have the opportunity to learn about new technologies and skills for the expectant changes in the job market.

14. Partners are excited by the opportunities that 5G technology could offer and recognise there is an element of risk in the work being undertaken as testing and trialling new technologies and pioneering new models are not without their inherent risks. The combination of partners within the project consortium offers a balance of small and medium sized enterprises through to global organisations. All commercial partners have been required to contribute financially to the project and are evidently committed to make the project a success.

The role of Worcestershire County Council

15. Worcestershire County Council will not be delivering the project in totality but will secure project and programme management and subject matter experts in conjunction with Worcestershire LEP using part of the grant award and will act as the accountable body for the grant, receiving it on behalf of the consortium. The amount of grant awarded to the

consortium for the 2018/19 period is £4.81 million. As a public body the County Council is able to claim back 100% of eligible costs incurred on the project.

16. It is anticipated that the grant would be used to fund additional revenue spending during 2018/19 only. The additional income and matching expenditure would form part of the Economy & Infrastructure budget in 2018/19.

17. The Council, in conjunction with partners, also has a role to "champion" the project across the country.

Summary of Risks

18. A summary of high level project risks for Worcestershire County Council are detailed at **Appendix A**.

Next Steps

19. Next steps, subject to approval, include:

- Continue with set up and initialisation of the project to meet the Grant Pre-conditions;
- Work through 12 month project delivering on Key Milestones;
- Investigate and seek opportunity to progress a Phase Two application and seek to establish the commercial model that will allow the testbed to continue operating beyond 12 months.

Legal, Financial and HR Implications

20. The Legal implications for undertaking the 5G project are that Worcestershire County Council is the Lead Partner and Accountable Body for the WLEP. As Lead Partner, WCC has assumed certain obligations to DCMS under the Grant Agreement and, as far as possible, will pass these down to partners through the Collaboration Agreement. As a Public Body providing financial support to private-sector undertakings, State Aid guidance has been provided by the Department of BEIS and WCC Legal & Democratic Services with regards to the funding, advising that such funding may constitute 'authorised state aid' on the basis that a General Block Exemption for aid for research and development and innovation applies.

21. An amount of funding has been accounted for in the project budget to support legal costs during the project.

22. The total amount expected to be spent on this project is £7.87m with £4.81m funded by the DCMS grant and the remaining £3.06m from partner contributions. As the Accountable Body for the grant, the £4.81m would be added to the 2018/19 Economy & Infrastructure revenue budget, with a corresponding amount added as grant income.

23. Worcestershire County Council will be responsible for overall programme management and ensuring subject matter expertise is available to support the project and provision has been included within the bid to cover the costs associated with this,

along with legal, commercial, communications and financial support and any irrecoverable VAT that may be incurred by the Council through partner reimbursement.

24. The grant will be claimed from DCMS in arrears once defrayal has been confirmed and therefore, as with a number of external grants, there may be small cash flow implications relating to claiming reimbursement for County Council costs. Worcestershire County Council will be required to make payments to partners in line with the milestones once the grant funding has been received from DCMS. In order to ensure that exposure to ineligible expenditure by partners is mitigated and sufficient documentation is received in advance from partners to enable a full grant claim process, a Consortium Collaboration Agreement is required to be signed by all partners clearly setting out the requirements.

25. The HR implications include WCC resourcing the Project Management, Technical expertise and commercial model functions and as a result will be recruiting new staff into fixed term arrangements to March 2019. In the short term, due to the short timescale between notification of project success and project commencement, and rapid mobilisation required, processes are in place to secure temporary staff and commission specific services in order to ensure that the project is not delayed due to lack of available resources.

Privacy and Public Health Impact Assessments

26. No adverse impacts have been assessed but this will be kept under review as the project develops.

Equality and Diversity Implications

27. To be carried out in the early stages of the project.

Contact Points

County Council Contact Points

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Specific Contact Points for this report

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Background Papers

In the opinion of the proper officer, in this case the Director of Economy and Infrastructure, there are no background papers relating to the subject matter of this report.

Appendix A: Risks

Risk	Mitigation
<p>Impact of situation if funding is withdrawn / clawed back / deemed not State Aid compliant</p>	<p>A dedicated programme resource and professional financial resource are secured to support the project.</p> <p>Collaboration Agreement between partners.</p> <p>State Aid Guidance was sought from Department of BEIS, their view concurred with view of County Council legal, that the Grant Funding is compatible aid for a research and development project within the "experimental development" category of Article 25 of the General Block Exemption Regulation.</p>
<p>Ensuring Value for Money across all partners in an innovative space with established supply chains</p>	<p>Specific requirements are set out in the 'Collaboration Agreement' to seek value for money. Private sector partners also contribute their own funding at either 60% or 50% ratio, therefore commercial practices lead to VfM being sought.</p> <p>In areas that only one supplier is suitable due to either 'latest technology' and "timescales" required the appropriate VfM assurances will be sought.</p>
<p>Funding Competition rules require that partners should build any risk contingency into their financial models</p>	<p>All partners are aware of the restrictions of funding at each milestone, if costs are exceeded it is expected that partners will only claim up to their allocated amount. If required revised Cash profiles can be submitted, but these will only allow for relief within the total cap for each partner.</p> <p>For WCC, existing Finance staff are resourced against the programme to monitor spend.</p>
<p>Not Managing Stakeholder Expectations / Reputational damage / 5G Technologies are new and inherently risky, should use cases not deliver on expected benefits, how is this viewed</p>	<p>It is recognised the 5G project contains large commercial companies, educational providers, public sector and SMEs. All partners have a seat on the project board and are expected to engage in regular coordination / agile meetings to minimise the risk of ongoing concerns / issues.</p> <p>In Q&A sessions partners have shared fears and concerns and all are clear this is a 'Trial' and 'Testbed' and that not all applications will work as expected. It is recognised that 'failure' may be an acceptable outcome provided sufficient learning is provided, to avoid</p>

Risk	Mitigation
	similar issues in future.
Reputational / concerns raised as to safety of radio frequencies used by 5G applications	The appropriate test licenses have been secured from Ofcom and equipment providers and network operators will comply with all ISO guidance. One of the communications work packages will provide standard information to support partners communicating this message to concerned stakeholders, whether they are staff in a factory or nearby neighbours.
Partner withdraws from programme	Within the Collaboration Agreement there are provisions that require partners to meet their obligations. If a partner were to withdraw they would be expected to deliver to the point so that all other partners could still deliver their milestones. Regular Board meetings and support from the core team help to align partners and keep them focussed on task.
With a strict 12 month deadline to complete project Delays to Project caused by technology not being available / refused planning / licences etc. Funding not fully drawn down.	<p>Key staff within the partnership are engaging in national networks such as 5G Innovation Network and also maintaining a focus on changes in industry or planned release dates. For some areas the risks need to be accepted and cannot be mitigated within the project.</p> <p>Should it not be a technology release date causing a delay, the project will be incorporating a combination of Prince and Agile project management methodologies and have included for additional support at peak times. The capacity of some larger partners will also allow for an element of mitigation if the concern is resource.</p>
Breach of GDPR / Security Breach of network. Reputational and Financial Risk	<p>All partners have been asked to complete GDPR questionnaires and agree to conditions within the Collaboration Agreement. Much of the data to be shared in connection with the project is machine to machine, with no personal data included.</p> <p>Part of what the project is seeking to achieve is 'Security by Design', the partners in QinetiQ and the network operators have significant experience and are well placed to resolve issues if they arise.</p>