LIGHTSPEED EVOLUTION

SUMMARY

1.1 This report seeks approval to:

- The principle of a city-wide high speed data network and the provision of superfast broadband Fibre to the Premises (FttP) for Derby.

- Procure a delivery partner to deliver the city-wide high speed data network and superfast broadband Fibre to the Premises (FttP).

- Endorse Derbyshire County Council's bid for Broadband Delivery UK funding.

RECOMMENDATION

2.1 To commence the procurement of a delivery partner for the provision of a managed city-wide high speed data network and superfast broadband Fibre to the Premises (FttP) for the City of Derby.

2.2 To mandate officers to report back to a future Cabinet the proposed terms of the financial, technical and contractual arrangements, including details of Regional Growth Fund (RGF) funding to be sought and any financial commitments that this Council would be required to make.

2.3 To endorse a Derbyshire County Council bid to the Broadband Delivery UK (BDUK) broadband roll out fund.

REASONS FOR RECOMMENDATION

3.1 The provision of high-quality superfast broadband, ultimately fibre to the premises (FttP), is gaining recognition as the essential enabling infrastructure without which our economy will suffer in comparison with global competition.

3.2 The overall objective of this project is to ensure Derby's economy remains globally competitive, public services are delivered in the most inclusive and cost-effective way and to mitigate climate change and improve resilience.

3.3 The provision of fibre to the premises (FttP) will transform the opportunities for Derby businesses, helping the private sector access new markets, work in new ways, and

attract new companies into the area. It is expected to be a basic requirement of business in the future, especially the high growth sectors that are critical to our future economic success, such as advanced engineering, low carbon and the creative industries. Ultimately it will help safeguard existing jobs and create new jobs, in particular in high growth and high value sectors.

3.4   The endorsement of Derbyshire's BDUK bid, which strategically takes account of Derby City's plans, would strengthen their proposal, and demonstrate our joint commitment to improve the connectivity for Derby and Derbyshire.

SUPPORTING INFORMATION

Strategic Imperative

4.1   The Government has demonstrated their support for the roll out of superfast broadband with the BDUK funding, the Urban Broadband Fund and the requirement for high speed broadband in Enterprise Zones.

4.2   Studies in Europe and North America have shown a 'GDP' increase of 1% as a result of installing a city-wide high speed data network. The anticipation is that a GDP increase of 1% through more market availability, more growth and more local spend could add approximately 500 new jobs per year to Derby

4.3   The larger companies can, and do, procure their connectivity between their sites. However their supply chain companies are left to the general market which is ill served to meet their needs. The current market processes with its reliance on incumbents and barriers to entry for new providers makes it difficult for typical supply chain Small and Medium Enterprises (SMEs) to access additional bandwidth without incurring high cost and suffering poor customer service. The FttP network will influence and benefit the SME Community, who currently would not be able to afford their own dedicated high speed broadband provision.

4.4   Businesses of all sizes can draw a number of benefits from increased broadband speeds. As a business grows, the speed and data throughput generally increases exponentially, since additional staff generate more digital activity and thereby overall traffic within a business, as well as traffic flowing into and out of a business as its links with customers and its supply chain grow accordingly.

4.5   More and more Derby companies are reporting serious constraints upon their business due to problems with speed and capacity of their broadband connections. An independent study by Atkins in June 2011(interim) and November 2011 (final) undertook a survey involving over 550 businesses in Derby. Of businesses responding;

- 76% said broadband connectivity was important to business operations with only 25% saying current broadband connectivity does **not** negatively affect business operations
- 69% said they required at least 4 times extra bandwidth.

- 60% of businesses were concerned about the future level and quality of connectivity

- 55% stating that the provision of superfast broadband would improve overall business performance. A variety of businesses were interviewed face to face and confirmed that current capacity needs to be increased and connection is too slow at present. 'Capacity' and 'faster' are linked where the transfer of large data files is concerned.

Economic Benefits

4.6　Installation work of the new city-wide high speed data network and FttP will support job creation within Derby's construction sector. By installing a city-wide high speed data network and FttP solution across Derby, it will enable innovation, deliver better service and ultimately grow the Derby economy, continuing job retention and job creation. The city-wide high speed data network and FttP are crucial to Derby's plans for its global technology cluster and other employment areas.

4.7　Derby will receive the following benefits from having a FttP network:

- A technology platform from which to innovate, open new markets and ultimately deliver new jobs and a commercial platform to serve existing businesses in Derby as well as attracting new businesses to the city

- Major businesses and more importantly their supply chains will have access to world leading connectivity and benefit from cost saving for network connectivity

- Cost saving for network connectivity

- Job creation, through the construction phase and (indirectly) business growth and retention in Derby through access to better ICT

- Supply chain business will have the choice to access new technology processes such as cloud based services therefore reducing operating costs

- Derby businesses can develop more markets and develop more services

- The network will be open access – any service provider can have commercial access to the platform

- 25 – 30 year future proof network

Fit with Derby's Economic Strategy

4.8　Derby's Economic Strategy is intended to deliver the city's economic outcome statement: "In 2026 all people in Derby will enjoy a thriving sustainable economy" for which the DRB has identified three drivers:

- Creating a culture where enterprise thrives
- Ensuring Workforce skills match business needs
- Maximising quality of life

4.9 While it is anticipated that the city-wide high speed data network and FttP would create the necessary conditions to support all these drivers, it is anticipated that they would be particularly relevant in supporting 'Creating a culture where enterprise thrives', which the Strategy seeks to achieve by:

- Stimulating an enterprise culture with innovation and creativity;
- Supporting growth of companies and relocation opportunities; and
- Improving Derby as an investment proposition.

4.10 As well as being crafted to meet local needs and opportunities, Derby's Economic Strategy has been designed to mesh nationally and sub-regionally:

- The economic strategy contributes to the national Strategy for Sustainable Growth – which highlights the importance of a skilled workforce, infrastructure investment, and encouraging entrepreneurialism; and

- The economic strategy's three drivers underpin the D_2N_2 LEP Priorities – Sharing the benefits of sustainable economic growth across our cities, towns and rural communities.

Delivery of public services

4.11 A city-wide high speed data network is a strategically important opportunity for the City and could be a way to share costs and services with other public sector bodies. The city-wide high speed data network would connect key strategic sites within the city, including Council sites and as such offers an opportunity as part of the procurement process to deliver efficiency savings to the Council and other public service providers. This would be part of the assessment criteria for the procurement.

4.12 The installation of a FttP network makes possible the transformational delivery of public services by increasing the effectiveness and efficiency of service delivery by linking together different providers, cost savings and the development of new services: some of these services may depend on high bandwidth in itself, for example, some video-based services.

Benefit in terms of social inclusion and to community

4.13 Fibre to the Premises (FttP) enables people to work from home as easily as they can work in the office, helping to build a greener economy. It means that the way residents can access services can be transformed: from accessing further and higher education online, accessing more online public services, having medical conditions remotely monitored, and enabling vulnerable and elderly people to be supported to stay in their own homes for longer. For the public sector this can enable services to be delivered in a much more cost efficient manner.

4.14 A recent Office of Communications (OFCOM) report highlights the fact that with superfast broadband FttP older and disabled people will be able to achieve greater social and economic inclusion and engagement. This can be achieved through improved access to products and services, increased participation, improved wellbeing and richer entertainment. Even a 20Mbps connection struggles to deliver all these services at once.

4.15   Related to this are the issues of Telecare and Telemedicine, where these services are increasingly being seen as potential solutions to one of society's most pressing healthcare issues, that of long-term care of elderly or vulnerable people. Whether for personal or environment monitoring or delivering healthcare services, increasing demands on the broadband connection require substantial speeds to support concurrent services.

4.16   Superfast broadband FttP for the home is clearly about much more than multi-player gaming, faster music downloads or high definition TV. However these are the basic services that we are beginning to expect to happen instantly. The average household with superfast broadband will benefit from:

- Streaming HDTV programmes
- Busy homes with multiple IP-connected devices accessing streaming services will be able to concurrently view high-bandwidth content
- E-learning can be delivered at optimal speeds at any time of the day (currently much education is streamed at 'quiet' periods to avoid congestion)
- No 'fair use' policies, since the speeds attainable do not require any traffic shaping
- Faster photo and video uploads, particularly when others are also accessing these services
- Audio and video downloads happen almost instantaneously avoiding delays and replicating the services that we are beginning to get used to in our work/school environments
- Better ping rates and multiple character rendering for gamers, allowing more interactivity

4.17   The higher capacity of a FttP network can enable new services, including services that work on other types of broadband connections which can nonetheless benefit from the higher bandwidth provided by FTTP because the total available bandwidth is not aturated by other services delivered at the same time. Such a current example can be sensor networks with services video surveillance, smart grid systems, traffic and congestion charges, accident avoidance through the monitoring of buildings and social functional infrastructure. Many of these services can be individually operated over copper infrastructure, but the aggregate bandwidth of the growing number and the increase in data-intensive services, are best supported by fibre connection.

Why fibre to the premises?
4.18   City-wide high speed data networks are a future-proof infrastructure that is easy to upgrade, and provides virtually unlimited capacity. FttP is the only technology with enough bandwidth to handle projected consumer demands during the next decade reliably and cost effectively.

4.19   A key benefit to FttP is that it provides for far faster connection speeds and carrying capacity than normal copper services. For example, a single copper pair conductor can carry six phone calls, whereas a single fibre pair can carry more than 2.5 million phone calls simultaneously.

4.20 Organisations of all sizes can draw a number of benefits from increased broadband speeds, future-proofing an organisations digital capacity is therefore one of the main reasons for deploying the highest possible broadband connection speed. A copper-based connection, like the system currently available cannot offer that future-proofing. Likewise any hosting or server functions are simply not possible where high speeds are not available.

4.21 Although local exchanges are starting to be enabled for Fibre to the Cabinet , there are additional reasons for ensuring a seamless FttP connection:

- Robustness – fibre in the ground or carried overhead is more robust than copper and less likely to be cut for theft

- Longevity – fibre has a longer life expectancy than copper – it doesn't corrode

- No weather dependency – weather can be problematic with copper cables and termination equipment

- Fibre optics are not affected by electromagnetic interference

- Fibre is a 'fit-and-forget' technology requiring little or no maintenance over its life

Project Delivery

4.22 To support business expansion and make FttP viable, Derby requires a city-wide high speed data network within the city, akin to an electrical "ring main". This city-wide high speed data network would enable the provision of dark fibre and unlimited bandwidth between sites. This means that there will never be any restrictions on the types of applications that can run across the network (Video, Voice, Data, Cloud Computing, Telepresence, E learning, E Health). Everyone on the network can change the way they use connectivity to improve their business model, to reduce operating costs and to grow with predictable costs. The project delivery will involve two phases

Phase 1 – Core Network

4.23 The proposal is to deploy across the city the latest generation of city-wide high speed data network infrastructure available in the UK - a 288 fibre metropolitan ring connecting all strategic existing and proposed employment sites and industrial parks, the University and Derby College, data centres, offices, key Council locations, schools and hospitals. This will create an ultrafast, stable and scalable broadband infrastructure, anticipated to be in place by April 2013.The contribution from public sources, including from the Council and potentially Regional Growth Fund, based on industry estimates, could be around £6m.

Phase 2 - Fibre to the Premises

4.24 FttP will enable next generation access to citizens throughout city. The city-wide rollout will be completed by 2013/14 to pass approximately 95% of all homes & businesses in Derby. The additional private sector investment of £30m-£35m to install a city-wide Open Access FttP network to Derby's residents and businesses would be secured by the building of the city-wide high speed data network. Potential private sector partners have confirmed this level of private sector investment would be achieved by the procurement of the city-wide high speed data network, this investment would be one of the tender requirements.

Procurement

4.25   The project will be managed by the City Council, through its Regeneration, IT and Procurement Departments. It is proposed to use an EU Compliant procurement process, which meets the requirements for State Aid rules.

4.26   The procurement of the city-wide high speed data network in this way will ensure that there is proper competition:

- Firstly, the tender documents will set out a clear criteria against a range of benefits which the successful tenderer must achieve as a condition of funding support for the creation of the city-wide high speed data network; and

- Secondly, the terms and conditions will require that the city-wide high speed data network is genuinely 'Open Access' to ensure that it can be used to carry services by the widest possible range of communications/service providers. With its dark fibre capacity, it will have the potential to offer far better value unrestricted bandwidth capacity than is accessible from carriers over the existing infrastructure.

4.27   The Assessment Framework for the procurement is being prepared in conjunction with Derby City Council IT and Procurement Departments The assessment criteria were formulated in part using independent research and studies undertaken by LightSpeed Derby, an independent partnership which has worked to promote and facilitate the roll-out of superfast broadband in the Derby area.

Timetable

4.28   Phase One - It is anticipated that the city-wide high speed data network will be completely installed and running by April 2013, with key sites and buildings starting to come on on-line by December 2012.
Phase Two - It is planned that 50% of the city is covered by FttP by December 2013 with complete city coverage by December 2014.

Derbyshire BDUK Funding Bid

4.29   Broadband Delivery UK (BDUK) funding is required to assist Derbyshire to meet the government's vision of providing a minimum of 2MB broadband to all and "superfast" for 90% of the UK by 2015. BDUK funding is specifically aimed at those areas that are unlikely to be supported by the market, this is usually rural areas.

4.30   Derbyshire County Council are submitting a bid to the Government for funds to improve connectivity across the County. Businesses in Derby are likely to have staff who live in the County Council's area, and vice versa, including close supply chain linkages between businesses in our respective areas.

4.31   The City Council and County Council could develop an integrated approach to market making, including demand stimulation, which would be supported by our procurement of a city-wide high speed data network and FttP.

OTHER OPTIONS CONSIDERED

5.1 **Option 1** – Do not procure the city-wide high speed data network and Fibre to the Premises (FttP) and let the market bring forward the development when economic conditions improve.

5.2 Government is supporting investment in urban infrastructure by making the provision of superfast broadband a corner-stone for Enterprise Zones and, only recently, by establishing a competition for funds for those core cities who want to become 'super-connected cities'.

5.3 These initiatives with the Broadband Delivery UK initiative will take up industry capacity, with a relatively small number of infrastructure companies tendering and installing for years to come, creating the potential for a massive log jam.

5.4 It could put Derby's economy at a disadvantage if Derby has to suffer delays from waiting in a long queue, before accessing the benefits of a city-wide high speed data network and FttP.

This report has been approved by the following officers:

Legal officer	Stuart Leslie
Financial officer	
Human Resources officer	
Service Director(s)	Nick O'Reilly Director of IT, Richard Williams Director of Regeneration
Other(s)	Alan Smith – Head of Economic Development, Greg Jennings – Head of Regeneration Projects

For more information contact:	Neil Johnson 01332 641619 neil.johnson@derby.gov.uk
Background papers:	1. Atkins LightSpeed Derby Evaluation Interim June 2011
	2. Atkins LightSpeed Derby Evaluation Final November 2011
	3. OFCOM Report Next Generation Services for Older and Disabled People - September 2010
	4.The Impact of Broadband on Growth and Productivity - Micus (2008), a study commissioned by the European Commission
List of appendices:	Appendix 1 – Implications

IMPLICATIONS

Financial and Value for Money

1.1   This report commits the Council to funding the costs of the procurement of a delivery partner. The cost of the procurement would initially be met by the Regeneration Fund and are estimated to be £100,000. This will be included in a future Cabinet Report providing an update on the Regeneration Fund.

1.2   A further report will be brought back to Cabinet once the procurement process is complete identifying the preferred development partner, detailed financial terms, technological options and proposals for the phases of works. This report will seek approval to enter into or otherwise a contract.

1.3   The anticipated contribution from public sources, including from the Council and potentially Regional Growth Fund, based on industry estimates, could be around £6m. The additional private sector investment of £30m-£35m to install a city-wide Open Access FttP network to Derby's residents and businesses would be secured by the building of the city-wide high speed data network.

1.4   Potential private sector partners have confirmed this level of private sector investment would be achieved by the procurement of the data network, this investment would be one of the tender requirements.

1.5   Officers are investigating the options for funding the project, including the option for RGF funding, any financial commitment this Council would be required to make would be included in the Cabinet Report mentioned in 1.2 above.

Legal

2.1   Section 2 of the Local Government Act 2000 provides "(1) Every local authority are to have power to do anything which they consider is likely to achieve any one or more of the following objects (a) the promotion or improvement of the economic well-being of their area…… and (2) The power under (1) may be exercised in relation to or for the benefit of (a) the whole or any part of a local authority's area or (b) all or any persons resident or present in the local authority's area.

Personnel

3.1   Delivery of the project will require a significant staff commitment in project management, contract management, communications and demand stimulation. It is anticipated that this will come from existing resources.

Equalities Impact

4.1 **Equality and Diversity**
The deployment of improved broadband connectivity will help ensure all Derby residents and businesses have access to a range of online digital services. A full equality impact assessment will be undertaken as part of the project to ensure all Derby residents are best able to benefit from improved broadband connectivity.The proposed project will help address issues of "digital exclusion" because of access to services and a reduction in connectivity costs.

Health and Safety

5.1 There are no direct Health and Safety issues arising directly from this report.

Environmental Sustainability

6.1 This project is likely to have positive environmental and social benefits, as well as economic returns. It will support the establishment of digitally dependant businesses in Derby, together with improved efficiency for existing businesses and reduced congestion by reducing the need to travel, because of the facilitation of home working.

6.2 In the medium to long term, delivery of this project is likely to have a positive impact on carbon emissions by reducing travel and facilitating home working.

Asset Management

7.1 Locations which can offer access to affordable fibre-based superfast broadband, will be more likely to retain existing businesses, and even attract new ones which have chosen to move away from areas with poor broadband provision.

Risk Management

8.1 The risks associated with this report are considered low if the preferred option is implemented. Leaving the scheme completely to market forces has a risk of the development not coming forward for some time in the current economic climate leaving it almost as a do nothing option. The impact on our economy could make Derby uncompetitive and unattractive as a business location.

Risk	Risk Assessment	Risk Level	Risk Management
Procurement	Does not deliver anticipated benefits in terms of Derby's economy or technology advances	Med	Specification and assessment criteria will be agreed with Regeneration, IT and Procurement and be assessed independently.

Procurement	Insufficiently competitive process engenders challenge	Med	Framing of requirements to ensure valid process.
Finance	Actual cost of project is too expensive or does not deliver value for money	Med	Costs have been estimated based on Industry discussions. Market analysis has suggested the market would respond to the procurement by delivering private sector funds to deliver FttP with the implementation of a city-wide high speed data network. Value for money and affordability assessments will be undertaken before any recommendation regarding an entry into a contract. This report only commits Derby City Council to the cost of the procurement.

Corporate objectives and priorities for change

9.1 This initiative meets all six of the Corporate Plan Objectives by bringing forward a development that ;

- Makes the city more attractive to new businesses and investors and creating jobs in the hi-tech sector

- Improves access to, and the reduces the cost of technology

- Assisting access to learning opportunities

- Providing the opportunities for Assisted Living and healthcare such as Telecare

- Enabling more effective ways for public service providers to link together to share information and provide services

- Encourage local communities to influence the design and delivery of services and influence local decisions

- Improves the way cultural life is accessed and experienced in the city.