

## PERTH AND KINROSS COUNCIL

## Strategic Policy and Resources Committee

29 November 2017

**DIGITAL INFRASTRUCTURE ACROSS PERTH AND KINROSS  
PROGRESS REPORT**

Report by Depute Chief Executive, Chief Operating Officer

**PURPOSE OF REPORT**

The purpose of the report is to provide an update on progress with national programmes to provide superfast fibre broadband infrastructure in Perth and Kinross. It also outlines local community initiatives aimed at providing broadband in rural areas and suggests that the Council continue to support these community initiatives as the R100 programme progresses through its procurement stages.

**1. BACKGROUND**

- 1.1 Members of the former Enterprise and Infrastructure Committee received a report on progress of the Scottish Government led Digital Scotland Superfast Broadband (DSSB) programme covering the Rest of Scotland (RoS) in January 2017. This report outlines the latest progress being made on delivering superfast fibre broadband in Perth and Kinross. It looks ahead to the likely coverage to be achieved by the DSSB programme by the end of 2018 and timescales for the procurement and implementation of the new Reaching 100% (R100) programme providing 100% coverage across Scotland. It also highlights communities that are developing their own broadband solutions assisted either by the Council's Rural Broadband Fund, Community Broadband Scotland or BTOpenreach.
- 1.2 The DSSB programme contracted with the BT Group in 2013 to provide access to fibre broadband to 95% of premises in Scotland by December 2017. Progress on this has been good nationally and the programme has been extended to the end of 2018. So far across the whole of Scotland around 800,000 premises now have access to fibre through DSSB and around 639,000 in the RoS area. Across the whole of Scotland around 88.9% of premises now have access to speeds of >24Mbps through DSSB and commercial deployment and 90.9% in the RoS area.
- 1.3 Perth and Kinross is one of six rural Council areas (along with Aberdeenshire, Angus, Dumfries and Galloway, Scottish Borders and Stirling) that need more complicated and costly engineering solutions and which lag behind other areas in delivery of the programme. However, Digital Scotland anticipates Perth & Kinross will achieve a minimum of 90.0% fibre coverage by the end of 2018 with 83.1% of premises in having access to speeds greater than 24Mbps.

- 1.4 In March, the First Minister announced additional funding for fibre deployment. This was made available by BT through the existing contract (£11.3m) and through 'Gainshare' funds (£15.6m), Gainshare funding is created when there are high levels of take-up of broadband services through DSSB structures. This means DSSB Rest of Scotland deployment has been extended for a further year until December 2018, and the six local authority areas mentioned above are the main beneficiaries of this additional funding. Gainshare areas in Perth and Kinross are shown in Appendix 1.
- 1.5 Those premises in parts of the Perth and Kinross area currently lacking superfast fibre broadband (10% of premises) at the end of the current DSSB contract in 2018 will be left to the R100 programme to enable by 2021. This will cover approximately 13,800 'white premises' (premises not served by broadband or due to be served within 3 years) in Perth and Kinross.
- 1.6 The Council has worked with communities in the remotest rural areas in Perth and Kinross in the period since the DSSB Programme started and will continue to do so, until the R100 Programme completes in 2021. It is doing this by working collaboratively with Community Broadband Scotland in the areas least likely to benefit from the DSSB rollout and by providing direct assistance through the Rural Broadband Fund and the Rural Perth and Kinross LEADER Programme.
- 1.7 Finally, since the last report the UK Government has committed to introduce a Universal Service Obligation (USO) for broadband by 2020 through the Digital Economy Act 2017. This intends to provide a legal right for citizens to order a broadband connection at a minimum speed – initially set at 10Mbps – upon reasonable request. The Scottish Government has written to the UK Government and Ofcom urging them to establish a working group involving the Devolved Administrations' to oversee the design of the proposed USO. Meanwhile, BT Openreach has also made a commitment to voluntarily deliver a 10Mbps service to all premises by 2020.

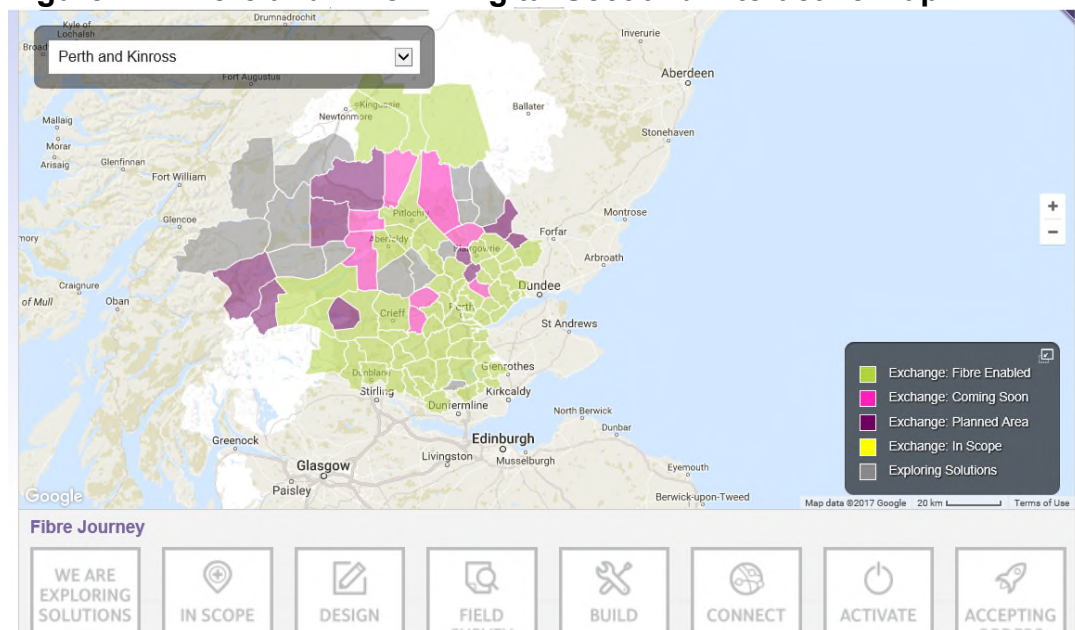
## **2. MAIN ISSUES**

### **Digital Scotland Superfast Broadband Programme**

- 2.1 The DSSB Programme is a partnership between Scottish Government, UK Government, Highlands and Islands Enterprise, BT, local authorities and the European Regional Development Fund to deliver fibre broadband to at least 95% of premises by the end of 2017 when existing commercial roll-out plans are also taken into account. Perth and Kinross Council made a contribution of £1.2m at the start of the programme to a total investment of over £400m made by these partners.

- 2.2 The total fibre coverage for a local authority area is made up of three elements:
- Predicted commercial coverage as understood on the basis of the Open Market Review 2012;
  - Baseline targets to be achieved by the end of December 2017; and
  - Gainshare targets to be achieved by the end of December 2018.
- 2.3 Based on these three elements, the total fibre coverage anticipated to be achieved by the DSSB programme by the end of December 2018 for Perth & Kinross is expected to be at least **90.0%** with **83.1%** having speeds of over 24Mbps.
- 2.4 At the start of the programme (July 2013), the anticipated commercial coverage for Perth & Kinross was **41.2%** of all premises and, without public intervention, this would not have increased significantly. Combined with the deployment to date, the coverage figure at the end of June 2017 was **82.4%** and of these premises **79.1%** currently have access to speeds of greater than 24Mbps.
- 2.5 The current and planned deployment through the DSSB Programme is shown on the Digital Scotland 'Where and When' interactive map website (Figure 1) showing planned deployment by BT Exchange area where green areas are fibre enabled exchanges; lights and dark purple are planned areas; and grey areas are where solutions are still being explored. It can be seen that there are still very large parts of Perth and Kinross where fibre is still planned or where solutions are still being explored.

**Figure 1: Where and When – Digital Scotland Interactive Map**



- 2.6 So far, more premises connected to the network are modelled to receive speeds which exceed 24 Mb/s than is set out in the contract. Lower than expected costs and higher than expected take-up combine to mean that £26.8 million more is available to extend broadband coverage through the DSSB programme to December 2018.
- 2.7 The postcode areas that Gainshare will affect are shown in Appendix 1. This information is compiled from information provided by Digital Scotland but a rider given with this information is that where a postcode area is shown as getting coverage that does not mean that every premise in that postcode will receive access to fibre through the DSSB programme.
- 2.8 It can be seen that rural areas such as Kinloch Rannoch, Blair Atholl and Strathtay are included for extended build as are Bridge of Cally and the area south of Kenmore alongside Loch Tay. There are a scattering of postcodes to the east of Perth and to the west and south of Blairgowrie and Rattray. Additionally, postcodes to the east of Crieff including Monzie and Madderty are shown, along with areas around Auchterarder and Glendevon. The extent of this extended build is important as it affects the eligibility of premises without fibre for the Better Broadband voucher scheme but also whether Community Broadband Scotland is able to assist these communities.
- 2.9 The deployment of cabinets to rural parts of Perth and Kinross over the past few months has been progressed by Digital Scotland and BT Openreach and the following settlements (or parts thereof) have benefited recently or will benefit soon from the installation of BT cabinets allowing the communities to order broadband services:
- Aberfeldy
  - Abernethy
  - Auchterarder
  - Ballingluig
  - Bankfoot
  - Blairgowrie
  - Burrelton
  - Caputh
  - Comrie
  - Crieff
  - Dunkeld
  - Errol
  - Glenfarg
  - Inchtute
  - Killin
  - Kinross
  - Methven
  - Muthill
  - Pitlochry
  - Scotlandwell

- 2.10 The Council receives communication from Digital Scotland of where deployment of cabinets will take place in the next six months but this information is covered by a Non-Disclosure Agreement. Areas in Highland Perthshire will benefit from new cabinets linked to the extended build facilitated by Gainshare.
- 2.11 Recently, Digital Scotland has communicated to the Council that Kinloch Rannoch, Meikleour and St Fillans exchanges which are Gainshare exchanges originally scheduled for July to December 2017 have been moved back to July to December 2018 because some structures have been reprioritised to maximise the number of premises who will be able to connect to enabling infrastructure before the end of the baseline programme. Craigton, Lintrathen, Bridge of Cally, Madderty and Strathardle exchanges have also been moved back to July to December 2018 for the same reasons.
- 2.12 When Cabinets are deployed Digital Scotland undertakes specific local demand stimulation activities with a focus on communities where take up is low and has included promotional events promoting the benefits of accessing higher speed broadband. Areas such as Pitlochry and Crieff have been the focus of attention for Digital Scotland over the last few months and resulted in a 4-6% increase in take-up of broadband services there. Take up through BT Cabinets in Perth and Kinross stands at **33.99%** as at July 2017 and stimulation activities are being undertaken in Aberfeldy, Strathtay, Ballinluig, Birnam and Dunkeld where take up is slightly lower. However, Digital Scotland considers that in terms of take-up Perth and Kinross is performing ahead of expectation and in line with the national average.
- 2.13 For premises too far from Cabinets or on Exchange Only lines where speeds are below 2Mbps, there is a Better Broadband Scheme where householders can apply for a £350 subsidy for deployment of alternative solutions using wireless or satellite. This remains the best current option for many homes in Perth and Kinross, however, it can only be used if premises will not benefit from the current phase of the Digital Scotland Superfast Broadband roll out and is only available until the end of 2017.

### **The Reaching 100% (R100) Programme**

- 2.14 The Scottish Government is committed to reaching 100% coverage of broadband by 2021 and the R100 Programme procurement process is now in progress. This is supporting the deployment of superfast broadband connections to premises that will not receive a superfast (now defined by EU as 30Mbps or more) service with existing or planned infrastructure as part of the current roll out. This will prioritise premises currently receiving less than 15Mbps from existing operators.

- 2.15 An Open Market Review has identified that in Scotland there are around 280,000 state aid eligible premises to be addressed by the R100 Programme with 14,000 in the Perth and Kinross area (Appendix 1). All but 30,000 premises mainly in large urban areas are expected to form the focus of the initial procurements. Further consultation with commercial providers and stakeholders was conducted over the summer to ascertain and map the proposed intervention area.
- 2.16 It seems likely that Perth and Kinross may be split across two lotting areas – one for the Central Belt and one for the Highlands and Islands area. There will also be a lotting area for the southern Scotland area. The procurement and delivery structure for R100 is being progressed to a timetable including the imminent publication of an OJEU notice and a tender process from December 2017 with contract being awarded in December 2018. It is unlikely that any work on the ground will begin until spring of 2019.
- 2.17 The R100 Programme is looking to City Deals in Scotland to join together funding through the identification of a ‘City Deal Intervention Area’ which could form part of the overall R100 Intervention Area. Discussions with Scottish Government on the potential funding available for the Tay Cities are due to start in November. In accordance with state aid approval any public sector investment must take a premises from below 30 Mbps to above 30 Mbps with at least a doubling of speeds.
- 2.18 The Tay Cities Deal has also expressed an interest in the UK Government Local Full Fibre Network Programme (LFFN) that would incentivise ultrafast broadband to the main urban areas and employment sites.

### **Community Broadband Scotland**

- 2.19 Community Broadband Scotland (CBS) is a Scottish Government initiative led by Highlands and Islands Enterprise (HIE). Over the past five years it has been supporting remote and rural communities across Scotland to gain access to faster broadband by supporting them to create and manage their own infrastructure.
- 2.20 CBS focus is on those areas least likely to benefit from the Digital Scotland Superfast Broadband rollouts. When a community expresses an interest or has been identified by Community Broadband Scotland (CBS) as a difficult area to reach through the DSSB programme, CBS provides advice regarding available options. The range and number of communities assisted by CBS in Perth and Kinross includes the Highland Perthshire Community Partnership, Loch Tay Internet, Lunan Valley and Mount Blair.

- 2.21 However, the CBS approach has been criticised for being overcomplicated and bureaucratic and to date only 14 communities have been assisted to set up and manage their own broadband projects since 2012. Although it states that it is currently working with a further 15 projects, CBS funding is frozen whilst EU funding is being reviewed linked to Brexit and also whilst independent consultants review the activities of CBS since it was established. The consultants are reviewing a range of innovations that CBS has considered to improve its delivery and how CBS could contribute to the R100 programme.

### **Support for remote rural communities**

- 2.22 Support to remote rural communities that will not receive superfast fibre broadband from the current DSSB Programme and are in areas that the R100 Programme will find hardest to reach will fall within the remit of the R100 contractors or a revamped Community Broadband Scotland or to the communities themselves.
- 2.23 Several local community projects are being supported by the Council either financially or through other advice and support. In February 2017 the Council agreed to provide £200K from an original allocation made in 2015/16 to support communities through a Rural Broadband Fund and LEADER funded project to develop alternative solutions including:
- technical feasibility studies and options to improve broadband access;
  - support to communities to procure technology solutions; and
  - match fund public or private funding to install and trial technology solutions.
- 2.24 The Rural Broadband Fund has the potential to support the ambitions of rural communities to have high speed internet access – using a range of technology solutions - to improve quality of life in rural areas, reduce the 'digital divide' and boost productivity of many small rural businesses. Given the timescales of the R100 programme many communities are eager to develop their own solutions rather than wait for fibre to arrive in 2021. Council funding can only be provided at a 'de-minimums' level to avoid breaching EU State Aid rules.
- 2.25 In some cases Council funding is being used by communities to match with Rural Perth & Kinross LEADER Programme funding allowing more premises to be connected. The following communities have asked for or submitted applications for funding to the Rural Broadband Fund:
- Classloch Digital (Loch Leven area) (approved and implemented see Appendix 2)
  - Lyon Internet (in draft)
  - Kinloch Rannoch (draft submitted)
  - Loch Tay Internet (submitted)
  - Mount Blair (in draft)

- 2.26 Linked to this the Council is currently mapping the extent of existing and planned digital and mobile communications infrastructure in Perth and Kinross and across the Tay Cities area. This mapping will help identify potential community areas that could be supported to develop their own solutions because of their geographical location, technical constraints or need for immediate connectivity for economic or social reasons but that will not be reached for several years by the R100 programme.

### **Other technologies available for rural areas**

- 2.27 The copper telephone wires that are used to carry standard (ADSL) broadband are the main issue with the DSSB programme delivery. These slow the internet connection down the further they have to travel from the telephone exchange to the home. The further the premises is from the exchange, the slower the broadband will be. In remote rural areas such as parts of Highland Perthshire some homes are several miles from their local telephone exchange. As a result, broadband speed tests have revealed speeds as slow as old-fashioned dial-up connections.
- 2.28 Whilst fibre optic cables being installed by BT Openreach for superfast broadband are better than copper wires, there is still a copper connection to the home because BT uses Fibre to the Cabinet (FTTC) technology rather than Fibre to the Premises (FTTP) technology (see Glossary, Appendix 3). Not all properties are connected to a roadside cabinet and are on an 'exchange only' line. There are a large number of these in Perth and Kinross and slow speeds are a feature of these lines. Sadly the provision of FTTP premises especially to many rural premises is very expensive, but may be achievable for some communities (see Classlochie case study, Appendix 2) where there is an active community able to assemble several funding streams through a BT Fibre Partnership.
- 2.29 Below are a few examples of other technologies that can be deployed by local community initiatives outside of the national programmes:

### **Community FTTP**

- 2.30 In some communities where residents are experiencing slow standard broadband and aren't eligible for FTTC broadband, groups of residents have decided to install their own FTTP networks. FTTP can deliver up to 1Gbps broadband straight into a customer's home, without the need for a street cabinet. In the Classlochie case this work has been done by BT Openreach through a BT Fibre Partnership but in other areas such as the B4RN project in Lancashire, residents have dug their own trenches and laid their own fibre and are now providing their own ISP services.

## **Wireless Broadband**

- 2.31 Some rural areas such as Loch Tay Internet opted for high-speed wireless networks which are installed by private companies who connect a fibre line and wireless access points on rooftops or poles around the community. Subscribers to the network then use their own aerials to pick up the signal. Though the company providing this service recently went into liquidation and services are now being provided by another company, the wireless technology installed remains sound.
- 2.32 Wi-Fi is generally viewed as a short to medium-term solution for communities waiting to be upgraded to fibre broadband. There are some drawbacks in that a Wi-Fi signal can be blocked by trees or buildings and weakened by bad weather and interference, which means it may not be as reliable as fixed or mobile broadband. However, in some cases, wireless broadband is the only way to get a connection in areas that are a fair distance away from the exchange and that struggle to get a strong mobile signal.

## **4G Mobile broadband**

- 2.33 The fourth generation of mobile broadband, known as 4G, is the fastest so far and is currently available across many areas of the UK. Although it can't compete with the fastest fixed broadband speeds, it can offer a significant boost for those who can't get a strong connection through their home broadband. Mobile broadband can be more expensive than traditional broadband and to get 4G you need to live in an area with sufficient coverage and either use a dongle or a 4G router.

## **Satellite broadband**

- 2.34 Satellite broadband is frequently the solution offered as part of the Better Broadband Scheme. The subsidy provided under this scheme provides equipment including a dish and receiver and an annual subscription. Satellite broadband delivers a maximum download speed of 20Mb and a maximum upload speed of 6Mb which may cause connection lags with heavy usage.

## **TV White Space**

- 2.35 TV White Space (TVWS) has the ability to deliver high speed broadband over long distances in sparsely populated areas, regardless of line-of-sight factors. The TVWS spectrum band was only liberalised by Ofcom on 1 January 2016, and the first commercial network was only beginning construction in March 2017. TVWS is also very quick to deploy, given the low environmental impact of the transmitter stations.

### 3. CONCLUSION AND RECOMMENDATIONS

- 3.1 The report has reviewed progress on the existing DSSB Programme to improve digital connectivity across Perth and Kinross and notes that fibre coverage will only extend to 90% of premises by the end of December 2018 with only 83.1% having speeds of greater than 24Mbps. It outlines the further investment of gainshare funds to areas of Perth and Kinross which will take place until the end of 2018.
- 3.2 The report also outlines procurement now being undertaken by Scottish Government for the R100 Programme to reach 100% coverage of superfast broadband in Scotland by 2021. The Tay Cities Deal has identified a City Deal Intervention Area and expressed an interest in the UK Government Local Full Fibre Network Programme that would incentivise ultrafast broadband to the main urban areas and employment sites and potentially also include funds for rural broadband.
- 3.3 The report highlights certain rural communities where local solutions are being sought some of whom the Council is supporting through the Rural Broadband Fund and the Rural Perth and Kinross LEADER Programme. It concludes that the Council should continue to support these communities whilst the DSSB programme completes and the R100 Programme procurement proceeds.
- 3.4 It is recommended that the Committee:
- i) Notes the progress made to improve broadband connectivity across Perth and Kinross by Digital Scotland and the R100 Programme.
  - ii) Notes the support being provided by Community Broadband Scotland, the Council and the Rural Perth and Kinross LEADER Programme to provide connectivity to remote rural communities.

#### Authors:

| Name            | Designation                             | Contact Details |
|-----------------|-----------------------------------------|-----------------|
| Graham Pinfield | Smart Perth and Kinross Project Officer | 01738 475000    |

#### Approved:

| Name          | Designation                                     | Date            |
|---------------|-------------------------------------------------|-----------------|
| Jim Valentine | Depute Chief Executive, Chief Operating Officer | 9 November 2017 |

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## 1. IMPLICATIONS, ASSESSMENTS, CONSULTATION AND COMMUNICATION

| <b>Strategic Implications</b>                       | <b>Yes / None</b> |
|-----------------------------------------------------|-------------------|
| Community Plan / Single Outcome Agreement           | <b>Yes</b>        |
| Corporate Plan                                      | <b>Yes</b>        |
| <b>Resource Implications</b>                        |                   |
| Financial                                           | <b>Yes</b>        |
| Workforce                                           | <b>No</b>         |
| Asset Management (land, property, IST)              | <b>Yes</b>        |
| <b>Assessments</b>                                  |                   |
| Equality Impact Assessment                          | <b>Yes</b>        |
| Strategic Environmental Assessment                  | <b>Yes</b>        |
| Sustainability (community, economic, environmental) | <b>Yes</b>        |
| Legal and Governance                                | <b>Yes</b>        |
| Risk                                                | <b>Yes</b>        |
| <b>Consultation</b>                                 |                   |
| Internal                                            | <b>Yes</b>        |
| External                                            | <b>No</b>         |
| <b>Communication</b>                                |                   |
| Communications Plan                                 | <b>Yes</b>        |

### 1. Strategic Implications

#### Community Plan / Single Outcome Agreement

- 1.1 The activities contribute to the Community Plan's strategic objectives of 'Promoting a prosperous, inclusive and sustainable economy' and the 'Outcome of a thriving, expanding economy', including the enhancement of digital broadband locally to increase the capacity to access services digitally and support more local working.

#### Corporate Plan

- 1.2 Perth and Kinross Council Corporate Plan 2013/2018 set out five strategic objectives:
- (i) Giving every child the best start in life;
  - (ii) Developing educated, responsible and informed citizens;
  - (iii) Promoting a prosperous, inclusive and sustainable economy;
  - (iv) Supporting people to lead independent, healthy and active lives
  - (v) Creating a safe and sustainable place for future generations.

- 1.3 This report relates to Objective No (iii) 'Promoting a prosperous, inclusive and Sustainable economy' and the outcome of 'Thriving, expanding economy' by ensuring that all our communities benefit from improved digital connectivity. It will also support Perth City Plan to make sure that Perth City is digitally connected with access to superfast broadband to encourage business growth.

### **Resource Implications**

#### Financial

- 1.4 The financial commitments relating to Perth Super-Connected City Project are mainly project management and marketing costs which will be funded from the approved Environment Service revenue budget in 2015/16.
- 1.5 Perth and Kinross Council agreed £1.2M on 19 December 2012 to support the roll-out of the Scottish Government Step Change (Rest of Scotland) Programme, to be met from the Council's Capital Grant. The Scottish Government confirmed this financial commitment and reduced the Capital Grant accordingly, as reported to the Strategic Policy and Resources Committee on 18 September 2013.
- 1.6 The Head of Finance has been consulted and has confirmed the financial commitments. Other funding streams for broadband solutions will be investigated including European funding opportunities.

#### Workforce

- 1.7 Project management support is provided by the Business Development Team within the Environment Service.

#### Asset Management (land, property, IST)

- 1.8 The development of digital and wireless connectivity may occasionally need to use Council's assets (e.g. fibre, lampposts, CCTV, buildings) and also the Council's Wireless Area Network (WAN) which links Council buildings, schools, libraries and community centres. Such use will be negotiated and agreed using the current procedures for such use.

## **2. Assessments**

#### Equality Impact Assessment

- 2.1 Under the Equality Act 2010, the Council is required to eliminate discrimination, advance equality of opportunity, and foster good relations between equality groups. An equality impact assessment needs to be carried out for functions, policies, procedures or strategies in relation to race, gender and disability and other relevant protected characteristics. This supports the Council's legal requirement to comply with the duty to assess and consult on relevant new and existing policies.

- 2.2 The function, policy, procedure or strategy presented in this report was considered under the Corporate Equalities Impact Assessment process (EqIA) with the following outcome: the proposal could have a positive impact on older people, people with a disability or people on low income or not working by offering more opportunities to access services and develop social interactions. However, specific targeted activities would have to be developed to promote positive impact and address digital divide.

#### Strategic Environmental Assessment

- 2.3 The Environmental Assessment (Scotland) Act 2005 places a duty on the Council to identify and assess the environmental consequences of its proposals. The proposals have been considered under the Act and no further action is required as it does not qualify as a PPS as defined by the Act and is therefore exempt.

#### Sustainability

- 2.4 Under the provisions of the Local Government in Scotland Act 2003, the Council has to discharge its duties in a way which contributes to the achievement of sustainable development. In terms of the Climate Change Act, the Council has a general duty to demonstrate its commitment to sustainability and the community, environmental and economic impacts of its actions. The activities in this report will contribute towards sustainable economic development, reduction of travel to access services from/to work and improved access for rural communities.

#### Legal and Governance

- 2.5 The consideration of the report is in line with the Council's Scheme of Administration and specifically the role of the Environment, Enterprise and Infrastructure Committee in developing measures to support and promote economic activity and to plan key infrastructure. There are no legal implications arising from the proposals contained in this report. The governance arrangements for the project are in place using Prince2 principles. The project management structure links directly to the Council's Governance structure via the Director (Environment) as the Project sponsor and the Head of Planning and Regeneration as the Project Executive.

#### Risk

- 2.6 Risks and the controls required to mitigate any risks will be reported through the Council's risk management process where the Council is the lead on individual projects. The main risks in relation to the roll-out of DSSB (Rest of Scotland) programme relate to the ability of BT Openreach to deliver the infrastructure on time and on budget as well as meeting standard requirements. The risks have been mitigated by the Scottish Government who is the contract signatory by transferring most of the risk to the contractor as part of the contractual arrangements and by having on-going mechanisms to monitor any arising risks through the deployment.
- 2.7 The risks have been mitigated by securing specialist technical advice and meeting DCMS project assurance requirements.

### **3. Consultation**

#### Internal

- 3.1 Other services are involved and consulted upon in terms of the delivery of the DSSB Programme.

#### External

- 3.2 Community Broadband Scotland, the Scottish Government, telecommunication operators are part of the DSSB project and therefore kept regularly informed or have been consulted on an on-going basis.

### **4. Communication**

- 4.1 As the project enters its final phases, Digital Scotland have been increasing the use of communication channels to ensure effective internal and external communication. The nature of, and the interest in, the project would require regular contacts with elected members, interested parties, general public and businesses. The Council's Corporate Communications Team is part of the Project management.

## **2. BACKGROUND PAPERS**

No background papers, as defined by Section 50D of the Local Government (Scotland) Act 1973 (other than any containing confidential or exempt information) were relied on to any material extent in preparing the above report.

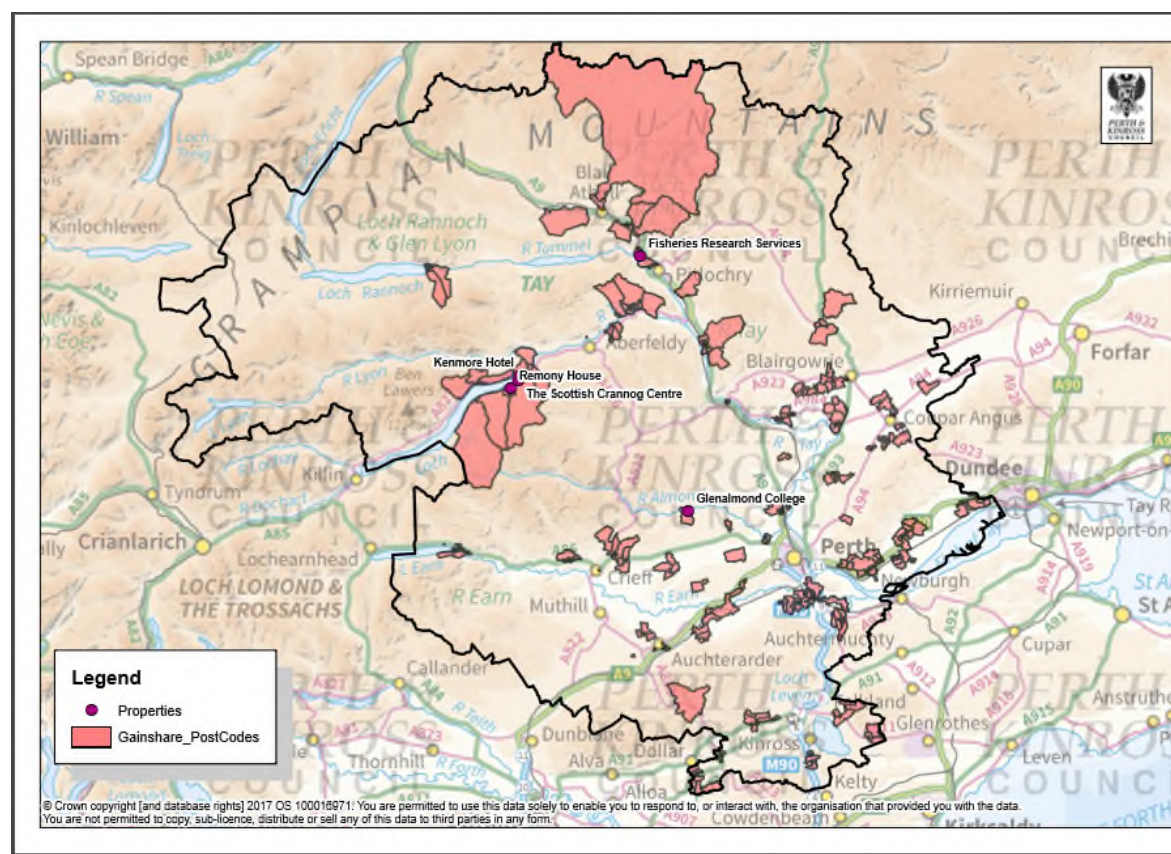
## **3. APPENDIX**

Appendix 1 – DSSB Rest of Scotland Gainshare and R100 Programme White Premises

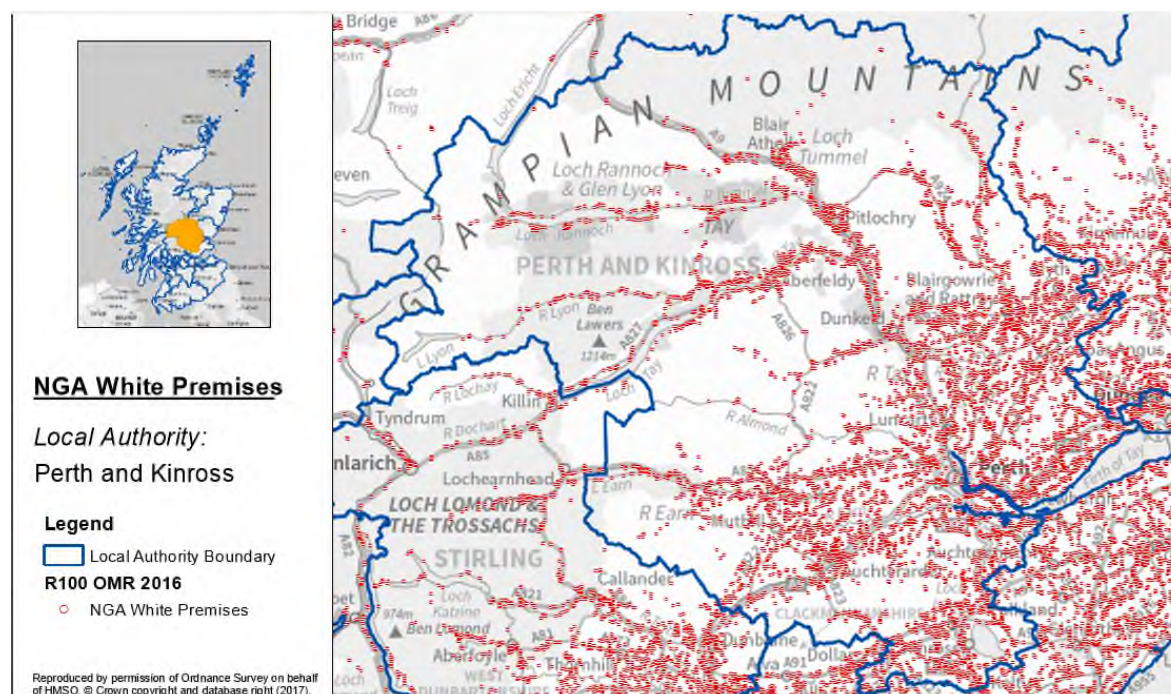
Appendix 2 – Case Study : Classloch Digital

Appendix 3 - Glossary of Terms

## DSSB Rest of Scotland Gainshare Areas



## R100 Programme White Premises





### **Case Study: Classlochrie Digital**

Classlochrie Digital Community Interest Company was established in April 2017 by a small rural community near Kinross to bring ultrafast Fibre to the Premises (FTTP) connectivity to 14 properties clustered at Newton of Classlochrie and to bring superfast (30Mbps+) broadband to other neighbouring properties in a 5km-10km radius from Classlochrie Farm via wireless solutions.

Around £25,000 of investment was secured by the company under the Seed Enterprise Investment Scheme; £5,500 of direct contribution from residents was also secured and £19,000 was provided by the Rural Broadband Fund. This funding enabled Classlochrie Digital CIC to enter in to a BT Community Fibre Partnership contract, with an estimated cost of £30,258.

In mid-September 2017 BT Openreach built fibre to the service ducts of each individual 14 properties. It is expected the BT Community Fibre Partnership will be tested, live and ready to accept orders by the end of October or early November 2017 considerably ahead of the contract schedule. At this time the 14 properties at Newton of Classlochrie will be able to order fibre products with speeds of up to 330Mbps.

The next stage of the project is to connect the additional 10-15 properties with wireless solutions, using the Classlochrie fibre infrastructure as the “backhaul”. A company that delivers fixed wireless solutions will be completing this work by the end of December 2017 and Classlochrie Digital will develop a full business plan for reaching 100-200 more properties in 2018, targeting those with sub 2 Mbps copper connections and those in “white” postcodes in the current R100 plans.



## GLOSSARY OF TERMS

**2G Second generation of mobile telephony systems:** Uses digital transmission to support voice, low-speed data communications, and short messaging services.

**3G Third generation of mobile telephony systems:** Provides high-speed data transmission and supports multimedia applications such as full-motion video, videoconferencing and internet access, alongside conventional voice services.

**4G Fourth generation mobile telecommunications technology:** Provides potential for mobile web access, IP telephony, gaming services, high-definition mobile TV, video conferencing, and 3D television.

**5G Fifth generation mobile networks:** These are the next telecommunications standards which provides higher capacity than current 4G, allowing higher number of mobile broadband users per area unit. This would make it feasible for a large portion of the population to stream high-definition media many hours per day with their mobile devices, when out of reach of WiFi hotspots.

**Asymmetric Digital Subscriber Line (ADSL):** A digital technology that allows the use of a standard telephone line to provide high speed data communications. Allows higher speeds in one direction (towards the customer) than the other.

**Broadband:** In telecommunications, broadband is wide bandwidth data transmission which transports multiple signals and traffic types. The medium can be coaxial cable, optical fibre, radio or wireless. In the context of Internet access, broadband is used to mean any high-speed Internet access that is always on and faster than traditional dial-up access.

**Broadband Internet Access:** Often shortened to just 'Broadband' is the process of connecting to the Internet and transferring high volume of data at high speed rates. Connections are measured in Kilo Bits Per Second (kbps) or Mega Bits Per Second (Mbps). The higher volume of data per second is transferred the better the connection is.

**DSLAM:** A digital subscriber line access multiplexer (DSLAM) is a network device, often located in telephone exchanges, that connects multiple customer digital subscriber line (DSL) interfaces to a high-speed digital communications channel using multiplexing techniques.

**Exchange only lines:** Exchange Only (EO) properties are connected directly to the exchange – there is no green cabinet between the property and the exchange to upgrade with fibre cabling. This is why superfast speeds cannot be reached by these properties until BT Openreach have installed two new cabinets – one for fibre and one for copper.

**Fibre-to-the-Cabinet (FTTC):** Fibre to the Cabinets (FTTC) is the main fibre technology currently in use in the Scottish network. It uses fibre-optic cables throughout the network right up to the street cabinet. Copper wires then connect the cabinet to homes and businesses. FTTC currently offers download speeds of up to 80Mbps and upload speeds up to 20Mbps.

**Fibre-to-the-Premises (FTTP):** Fibre to the premise or FTTP means fibre-optic cables run right to the door of each house or business. It currently has the potential to provide wholesale download speeds up to 330Mbps and upload speeds up to 30Mbps. FTTP is starting to become available on demand in certain areas where FTTC broadband has been deployed.

**Internet:** A global network of networks, using a common set of standards (e.g. the Internet Protocol), accessed by users with a computer via a service provider.

**ISP Internet Service Provider:** A company that provides access to the internet.

**Mobile Broadband:** Various types of wireless high-speed internet access through a portable modem, telephone or other device.

**Next Generation Access:** Next-generation access describes a significant upgrade to the broadband available by making a step change in speed and quality of the service. This is typically thought of as a download speed of 24Mb plus and a fast upload speed.

**Point of Presence (PoP):** Point of presence (POP) is the point at which two or more different networks or communication devices build a connection with each other. POP mainly refers to an access point, location or facility that connects to and helps other devices establish a connection with the Internet.

**Public hotspot:** A public location which provides access to the internet usually using WiFi technology.

**Satellite Broadband:** Satellite broadband is delivered by a satellite in orbit around the earth which communicates with a computer via a satellite dish on the person's premises. The capability of current satellite broadband services is around 10 Mbps, however, the next generation could potentially deliver speeds of up to 50 Mbps.

**Superfast Broadband:** Super-fast broadband is generally taken to mean broadband products that provide a maximum download speed that is greater than 24 Mbps. This threshold is commonly considered to be the maximum speed that can be supported on current generation networks.

**Universal Service Obligation (USO):** No individual, business or property is currently entitled to a broadband connection and as such, no provider is obligated to provide one. The UK Government has announced its intention to introduce a legal right to 'demand' a broadband service. Ofcom are currently consulting on the technical aspects of a broadband universal service obligation (USO), and plan to report their findings to the UK Government, with implementation expected by 2020

**Wireless LAN or WiFi (Wireless Fidelity):** Short range wireless technologies which allow an over-the-air connection between a wireless client and a base station, or between two wireless client