

**Cyngor Sir Ceredigion County Council**

**REPORT TO:** Corporate Resources Overview and Scrutiny Committee

**DATE:** 13<sup>th</sup> January 2022

**LOCATION:** Virtual meeting

**TITLE:** Digital Connectivity

**PURPOSE OF THE REPORT:** To provide an overview of the initiatives and projects that Ceredigion County Council are currently undertaking to support the levels of digital connectivity across the County

**REASON SCRUTINY HAVE REQUESTED THE INFORMATION:** To better understand the work carried out by the Council in improving Digital Connectivity across the County.

## **Background**

A report was presented to Corporate Resources Overview and Scrutiny Committee in November 2020 which emphasised that accessibility to ‘good’ quality, reliable digital connectivity is essential for residents, businesses and visitors in supporting Ceredigion’s economy. That with co-ordinated developments digital infrastructure can act as a catalyst for business growth and innovation within our targeted sectors and provide communities with enhanced access to employment, education and services.

At that time, increasingly so due to lock down restrictions, it was evident that digital connectivity had become an essential part of modern life, influencing how individuals work, communicate and access services. The situation has not changed as we all continue to make adjustments following the pandemic with families, businesses and organisations increasingly reliant on the effective use of digital connectivity to maintain operations and a sense of ‘normality’.

This report provides the opportunity to update on the initiatives that have been carried out over the previous 12 months, as well as raising awareness of new developments by the Council, as well as those by both UK and Welsh Governments over the coming months to promote the levels of digital connectivity across Ceredigion.

## **Current Situation**

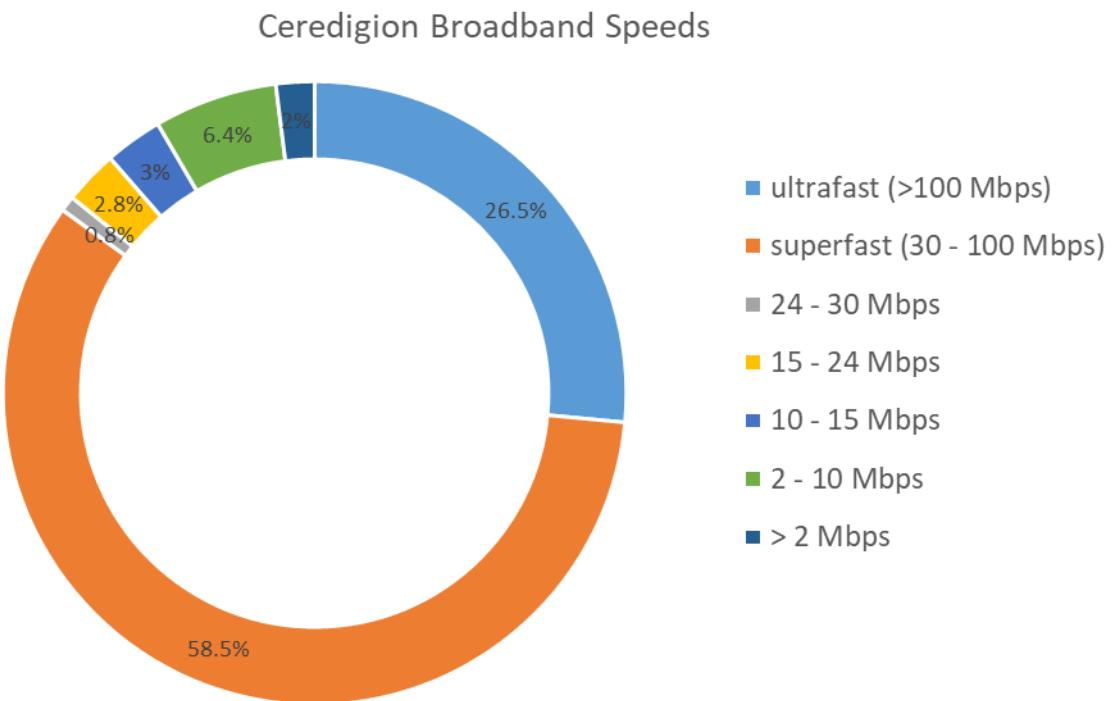
### **Broadband**

Despite the levels of broadband connectivity in Ceredigion seeing improvements over the past 12 months, the overall levels of connectivity still currently lags behind some parts of Wales and the UK. Approximately 85.5% of premises in Ceredigion have the capability to connect to Superfast Broadband (30Mbps+), lower than that for Wales (96.1%) and the UK (97%) on average.

26.5% of the region currently has access to Ultrafast Broadband (100mbps+) compared to Wales (48%) and the UK (68%), while 8.5% of premises in Ceredigion cannot access a connection of more than 10Mbps compared to only 2.25% for Wales and 1.8% for the UK experiencing this issue.

Despite these figures Ceredigion currently has 26.5% coverage of Fibre to the Premises (FTTP), allowing download speeds of up to 1gbps (1000mbps), which is greater than the Wales average of 26% and the highest level for a rural Local Authority and several other Local Authorities in Wales, with the UK average being 28.6% coverage per Local Authority.

Through the deployment of the Superfast Cymru programme which is scheduled to be completed by 2022, it has been suggested by Openreach that 90% of properties will be able to receive Superfast broadband (<30 Mbps) once the programme has been completed.



	<b>Nov 2020</b>	<b>Nov 2021</b>	<b>+ / -</b>
FTTP	22%	26.5%	+4.5%
Superfast (>30 Mbps)	82.6%	85.5%	+2.9%
>10 Mbps	10.2%	8.5%	-1.7%
>2 Mbps	2.7%	2%	-0.7%

## Mobile

Since the previous report little has changed in the levels of mobile coverage in Ceredigion, in that mobile coverage also lags behind the Wales and UK average coverage with topography and the lower density of population posing particular challenges in improving mobile coverage in the County. Approximately 9% of premises within the County have no 4G services while only 54% of premises have 4G coverage from all four operators, this in comparison to on average 73% in Wales and 80% across the UK.

Since 2017, Ceredigion has seen four new 4G masts activated with another 4 additional masts scheduled. In addition to this, 11 Extended Area Service (EAS) masts are planned in Ceredigion to provide Emergency Services Network coverage in the most remote and rural parts of the County, with it hoped that these additional masts will become commercialised to provide services to residents and businesses. Programmes to improve the levels of mobile connectivity across the County will be discussed later in this report.

## **Current Projects/ Initiatives**

### **Broadband**

#### **Fibre Projects**

Though the levels of broadband connectivity haven't been excelled at the rate which would have been desired over the past 12 months, this is not to suggest that significant progress has been made in reaching connectivity ambitions. At present 4 differing alternative network providers have proposed fibre projects across the County with there currently over 20 project areas being proposed and to be initiated in 2022. These 'alt nets' will be in addition to the publically funded Superfast Cymru Programme being deployed by Openreach.

Since the announcement of additional funding from UK Government in April 2021 for the Gigabit Voucher, these alt nets have been carrying out engagement with communities to ensure commercial viability and carrying out the required processes and network designs in order to receive funding for the deployment of fibre infrastructure and to ensure that there is no cost for these connections for residents and businesses.

Several of the proposed projects have now received UK Government Funding, with wayleaves and the placement of relevant cabinets also being agreed. There is currently infrastructure being deployed in a number of areas in Ceredigion preparation for network builds in early 2022, with fibre connections expected to take place shortly after. During 2021 the foundations have been laid and required funding applications have been carried to see the deployment of fibre in 2022.

#### **Project Gigabit**

Initially announced in the Spring 2020 Budget but held back by delays and revisions, Project Gigabit is a £5bn UK Government programme aimed at reaching more than one million 'hard to reach' homes and business to provide gigabit capable broadband to at least 85% of UK premises by the end of 2025 and 100% by 2030.

There are many network providers already building their own full fibre broadband infrastructure and expanding them across the country. However, since these rollouts rely greatly on a providers own budgets and 'commercial builds', there is a limit to the areas where they can afford to supply and install fibre infrastructure. Some areas, such as some in Ceredigion, would cost more for a provider to deploy fibre than they could make back in revenue, even with the use of the Gigabit Voucher.

To combat this, Project Gigabit's funding will go directly towards helping providers perform these very rural installations, through breaking down areas and procurement exercises being carried out to connect the properties within these areas to fibre. This will allow providers to expand their networks to all possible homes, regardless of commercial interests or economic viability. DCMS has identified that 234,000 premises in Wales will be in scope of the Project Gigabit Programme – meaning they won't benefit from the commercial build and thus require public subsidy to go further. The government will set out the timetable for the delivery of these connections within

Ceredigion once it has agreed on the procurement process with the Welsh Government, which is believed to take place in the coming months.

## **Open Market Review (OMR) 2021**

The Welsh Government are currently carrying out an Open Market Review (OMR) upon broadband provisions within Wales. The purpose of this Open Market Review (OMR) and the subsequent Public Review is to confirm the premises within the current and future gigabit-capable broadband intervention areas and which do not have access to broadband infrastructure delivering at least 30Mbps with no plans to provide such infrastructure over the next three years.

In addition to the above, the OMR is also looking to gather information in order to inform the UK Government's Project Gigabit programme and future Building Digital UK (BDUK) interventions under this programme. This OMR and Public Review process enables telecommunications companies, Local Authorities and all other interested stakeholders to provide information on their network plans and coverage, both existing and planned.

This information will be used to inform future public interventions and influence where the best use of public funding is used to ensure that the maximum number of properties are connected to fibre broadband. Ceredigion County Council have been working with suppliers and relevant stakeholders to ensure that their commercial build information is shared with the Welsh Government and that comprehensive data is gathered upon the current situation in Ceredigion. The report of the OMR is expected in early 2022 and from the report it will be possible to identify which properties will be receiving improved broadband provisions in the next three years and where additional interventions may be required.

## **Mobile**

### **Shared Rural Network**

The Shared Rural Network (SRN) is a collaboration between Mobile Network Operators (MNO's) and UK Government to improve 4G coverage for people living, working and travelling in poorly served rural areas.

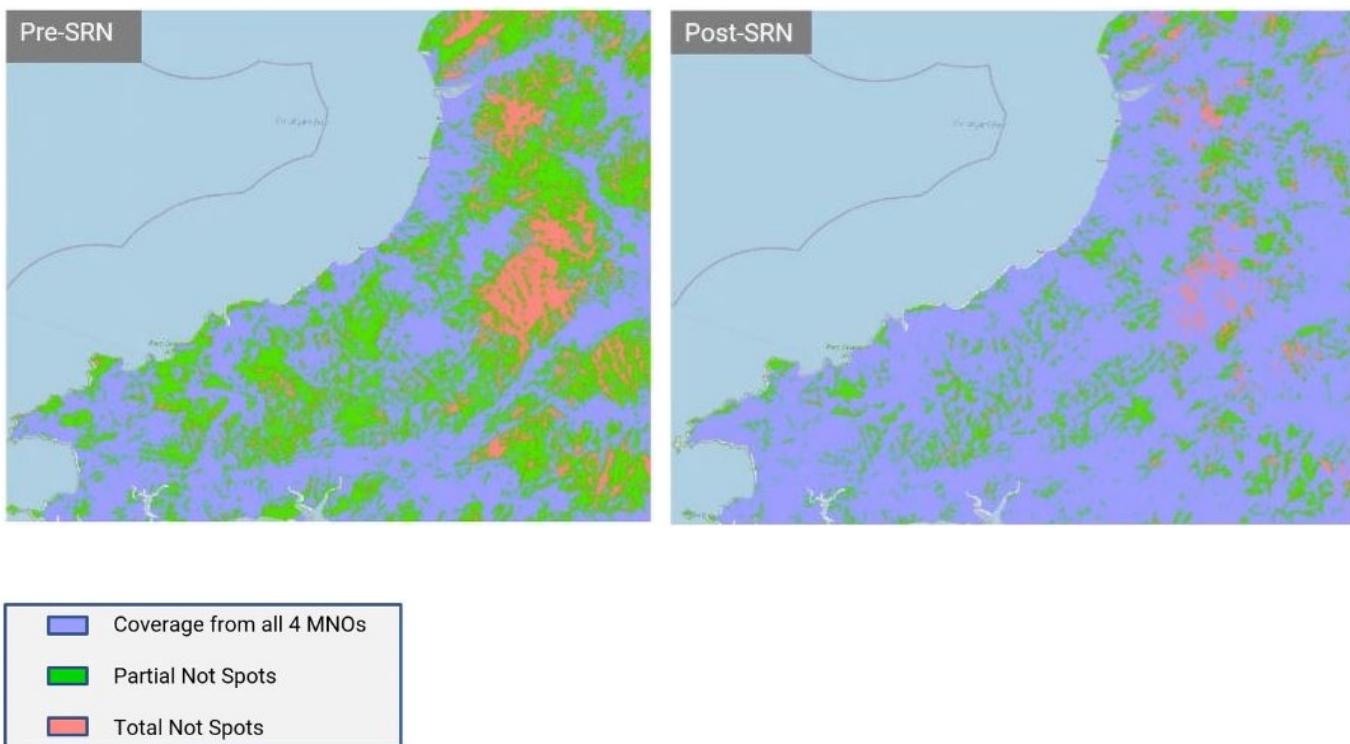
EE, O2, Three and Vodafone are collectively investing £532 million to extend their coverage by upgrading their existing networks, working together on shared infrastructure and building new sites. In addition to this the UK Government will also invest a further £500 million to build new masts in areas with no 4G coverage from any operator.

The network will ensure geographic coverage from at least one operator to 95% of the UK by the end of 2025, broadening consumer choice for mobile services in rural areas.

The legally binding coverage commitments will be enforced by Ofcom and though the specific coverage for Ceredigion has not yet been calculated, it is anticipated that coverage in Wales will improve to 95% from at least one operator and 80% from all four operators. This compares to the current levels of 89% and 58% respectively. Ceredigion County Council are involved with continued

consultations with those delivering the scheme and have committed to providing support where and as possible.

The SRN will deliver reliable 4G mobile connectivity allowing rural business to prosper and rural communities to thrive. The new infrastructure is guaranteed to bring significant improvement to mobile coverage to the County, and in turn will deliver economic benefits and address the urban rural digital divide, delivering improved digital infrastructure to the areas that need it most.



## Extended Area Service (EAS)

EAS is part of the Emergency Services Network (ESN), the new 4G critical communications system for Britain's emergency services being delivered by the Home Office. The network for ESN is being built by EE through upgrades to its existing network, with The Home Office supplementing this by building additional masts to give the emergency services 4G coverage in some of the most rural and remote parts of Britain. Ceredigion will see an additional 11 masts across the County through the EAS, with the earliest mast set to 'go live' by late 2022 and the remaining masts set to be operational by mid-2023.

It will transform how the emergency services and other first responders operate and will give them access to life-saving data and information in live situations on the frontline and while on the move. ESN will offer improved coverage for the emergency services in remote areas and give them priority on the network at times of peak congestion.

As network provider, EE will decide whether it is possible to activate sites for commercial coverage and will do so wherever it is technically possible. This will largely be dependent upon the capacity of the transmission to each EAS site. Other mobile network operators (MNOs) will also offer a commercial service where technically and financially feasible. The Home Office and Department for Digital, Culture, Media and Sport (DCMS) are working to make all EAS sites available as part of the SRN programme.

## 5G

5G is next generation of mobile internet connection and offers much faster data download and upload speeds. It is anticipated that as MNO's deploy increased infrastructure within the region through the programmes mentioned above and mobile phones increasingly become 5G enabled that network providers will increasing look to deploy 5G infrastructure within Ceredigion to meet customer need.

5G operates on the same radio frequencies that are currently being used for current smartphones, satellite communications and for Wi-Fi networks within the home. Beyond being able to download a full-length HD movie to your phone in seconds, 5G is about connecting things with greater reliability and without lag – so people can measure, understand and manage things in real time which can have benefits for businesses as well as for home users.

It is worth noting that the Council may receive queries upon the use of 5G within Ceredigion. Public Health England (PHE) leads on health matters related to radiofrequency electromagnetic fields, or radio waves. It also has a duty to advise the Government on any health effects that may be caused by EMF emissions. On 5G, PHE's view is that 'the overall exposure is expected to remain low relative to guidelines and, as such, there should be no consequences for public health'.

Further details around 5G and health can be found upon Ofcoms website –  
<https://www.ofcom.org.uk/phones-telecoms-and-internet/advice-for-consumers/advice/what-is-5g>

## County wide LoRaWAN Network

LoRaWAN (Long Range Wide Area Network) is a Low Power Wide Area Network (LPWAN) made for the Internet of Things (IoT). It is designed to allow low-powered devices and sensors to communicate with Internet-connected applications over long range wireless connections. These sensors or devices require very low power consumption and work off batteries or energy-harvesting devices (typically solar), which means that they can be in place in remote areas for up to 10 years without the need to replace them. The use of LoRaWan can have applications in transportation, agriculture, tourism, environmental management, social care and housing.

During 2021 Ceredigion County Council have completed a project to install 40 LoRaWAN Gateways upon several Council assets in order to create a County wide LoRaWAN network. This being the most extensive network across any other Local Authority in Wales and the first Local Authority to have coverage across much of the County. As well as the Council having access, the network will also be available and accessible to all businesses, organisations and residents, with

the freedom for the network to be used in the manner in which they feel most effective.

Allowing public usage of gateways ensures that the platform will grow more readily (meaning it is more likely to be supported into the future) and as a popular growing platform, it means more people will develop sensors for LoRaWAN, creating more hardware and more software in the marketplace. As the network of gateways increases, it also adds capacity and resilience where areas may be covered by multiple gateways. This means that if a gateway fails, connectivity will be maintained via another gateway in range.

Through the provision of free access to the Ceredigion LoRaWAN network and collaboration between internal Council departments, business owners and other local organisations such as Aberystwyth University and Farming Connect, we are offering developers, adopters, and end-users the opportunity to trial and deploy solutions to address a wide range of challenges that are facing local people, businesses and institutions.

As part of the Welsh Governments ambitions to exploit the use of LoRaWAN technologies across Wales, Ceredigion County Council have been successful in receiving a significant amount of equipment, including LoRaWAN gateways and relevant sensors, to further extend the coverage and build resilience of the existing network as well enabling the development of use cases by the Council. These use cases will be shared and highlighted with the aim to inspire businesses and other organisation to make use of the LoRaWAN network to bring about cost savings and improved efficiencies. The possible uses of sensors provided by Welsh Government is currently being explored with Council department to decide upon their effective use and how they can be deployed.

Collaborations with public sector bodies are currently being established to enable access to gateways which these organisations can make use of to develop their own projects and use cases. By doing so it will be possible to diversify the use of the network that the Council have put in place and drive innervation.

## Ceredigion SMART Towns

In collaboration with Powys County Council, Ceredigion County Council have been successful in receiving funding to progress a project to enable ‘SMART Towns’ in Ceredigion. The project will initially involve the installation of wi-fi access points in Aberaeron, Llandysul, Lampeter, New Quay and Tregaron, with Aberystwyth and Cardigan already having systems in place.

As well as providing ‘Town wi-fi’ across each of the Towns, the equipment will provide the ability to collect anonymised data upon footfall, space usage and dwell time, and will enable Town Councils and the County Council to conduct before and after analysis, helping towns identify which approaches are best during the post Covid recovery.

The project will complement the SMART Town initiative proposed by Welsh Government (<https://www.hwbmenter.cymru/en/smart-towns>), which several of the towns are now engaged with. The installation of this equipment will enable businesses, Town Councils and the County Council to

access data and analytics which will support future planning and more efficient business operating and growth, as well as the possibility of provided a greater visitor experience.

It is viewed that this technology will support businesses and positively benefit regeneration. This will enable businesses to plan projects which lead to economic growth as well as helping them make the best use of digital technology. This includes utilising data to help businesses better understand their customer base and trends which will support businesses in their future planning and marketing activities.

As well as Town centre analysis the project will provide the ability to promote local businesses through targeted marketing campaigns and through a 'Town Centre App', replicating much of the positive work that has been carried out in Cardigan around this. As part of this project Town Councils and businesses will be provided with the following support to ensure its success -

- Digital resources upon how to effectively make use of the equipment for Town Councils and businesses, and will be made available online.
- The identification of a 'SMART Town Champion' will ensure the data from the system is collated and shared regularly with relevant businesses in each town.
- The provision of a digital marketing toolkit will be made available.
- Businesses and Towns will be assisted through the aforementioned Welsh Government initiative with Town Councils currently engaging with the project.
- Individual support to businesses to aid in the effective use of data and digital technologies which will act as case studies to motivate others.

## **Digital Website**

A dedicated page upon Ceredigion County Councils website has been developed to raise awareness of the Councils initiatives in improving connectivity across the County as well as providing details and information to both businesses and residents about possible funding options available through UK and Welsh Government to improve their broadband connections. The website largely covers broadband, mobile and LoRaWAN, but also provides details for both businesses and residents about how to exploit and make the most of digital technology through the 'Digital Skills' section.

Details upon the page have been shared via social media as well as local press providing coverage. It is hoped that through greater awareness of the site and the information contained within it, residents and businesses will be better informed upon the options that may be available to support improved broadband, digital literacy and opportunities.

## Ceredigital

Ceredigion County Council are committed to being one the best connected rural Counties in the UK, with the aim to improve all types of fixed and mobile connectivity in order to support:

- Business growth and the economy
- The quality of life for residents
- Tourism
- The environment

The below section provides details of the current projects and work being carried out in order to achieve this, as well as information regarding what support is available to improve the levels of connectivity through various schemes and funding options.



### Broadband

How your business or community can access funding to support a quicker connection.

[»Broadband](#)



### Mobile

Information upon coverage and planned improvements to increase coverage across the County.

[»Mobile](#)



### Internet of Things

Discover the possibilities for your business or home through Ceredigion's LoRaWAN network.

[»Internet of Things](#)



### Digital Skills

Make the most of technology and improve your digital skills for both your business and home.

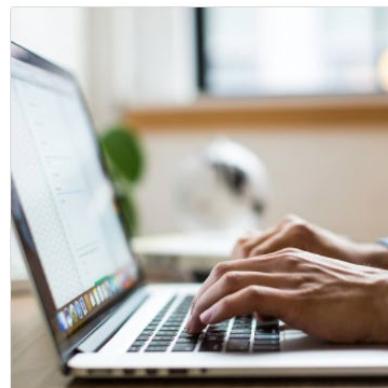
[»Digital Skills](#)



### Public Wi-Fi

Find out where it is possible to access free Wi-Fi in Ceredigion.

[»Public Wi-Fi](#)



### Contact Us

How to get in touch if you have any questions about digital connectivity.

[»Contact Us](#)

## Digital Connectivity Mapping

An exercise has taken place to collate and record data upon Ceredigion's digital connectivity from several sources such as Welsh government, Ofcom and Openreach in order to useful data easily accessible to influence where efforts and projects should be focused to support 'not spot' areas.

This data has been used to map levels of connectivity across the County in order to identify areas that are well connected and those that are not, with particular focus upon broadband connectivity. It will be used to form base line data to recognise where improvements have taken place over time. From using this tool it will be possible to establish where future interventions or the focus of Welsh Government or UK Government funding should be aimed and influence future strategies aimed at improving the level of connectivity, whether this be broadband, mobile or other connectivity networks.

It has also been used to advocate and lobby for improvements in the levels of infrastructure that providers are applying in the County with some areas seeing improvements as a result of lobbying fibre suppliers through the use of this data. The information has also been highly influential when provided to fibre infrastructure suppliers and their decision making in project proposals within the County, enabling them to focus on areas with the poorest levels of connectivity to ensure that proposals are commercial viable and they are progressed.

## Conclusion

Access to enhanced and reliable digital connectivity, and accelerating its deployment is fundamental to transforming the Ceredigion economy and enabling improvements in wellbeing. Digital technologies are transforming communications, services, learning and business opportunities at an ever-increasing pace. New digital technology such as the LoRaWAN network and access to data analytics have the potential to open up new businesses as well as improving the lives of our communities.

While Ceredigion has seen improvements in digital infrastructure over the past 12 months and some areas experience some of the quickest broadband speeds in the UK, there are areas of the County that still fall below the levels of other areas of Wales and the UK in regards to superfast broadband and mobile connectivity. As suggested previously, the past 12 months has seen significant energy put into demand stimulation exercises and raising awareness of this demand and the commercial opportunities that are available to suppliers, with this work now coming to fruition through suppliers starting to deploy the infrastructure and making connections over the next 12 months which will see an increase in connectivity and access to fibre broadband.

The Council are committed to developments within this sector and action is being taken, with support and funding available through multiple streams. It is hoped that through technologies such as LoRaWAN and initiatives such as the SMART Towns project that Ceredigion will be seen as a place for innovation and will attract businesses and suppliers to the region to further support the economy and where appropriate for Ceredigion to be seen as a test bed to explore the advantages available through increased use of digital technology.

**RECOMMENDATION (S):**

To help inform Members of the digital connectivity agenda in Ceredigion and the work of the Council to help improve connectivity - to help Members raise awareness and promote opportunities within their communities.

**REASON FOR RECOMMENDATION (S):**

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**Designation:** Digital Programme Manager, Growing Mid Wales  
**Date of Report:** December 2021  
**Acronyms:**