

Swansea Bay City Deal

# Swansea Bay City Deal Connected Places Economic Impact Appraisal

Final Report



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# Executive Summary

As part of a funding restructure exercise conducted by the Swansea Bay City Deal (SBCD) Digital Infrastructure Programme, an economic assessment was needed to ascertain the impact these changes to the funding and structure of the individual workstreams would have on the overall expected economic impact (GVA) of the Digital Infrastructure programme.

|                                            |                                   |                                     |                                           |
|--------------------------------------------|-----------------------------------|-------------------------------------|-------------------------------------------|
| <b>Changes in SBCD Capital Investment:</b> | <b>Connected Places</b><br>-£3.7m | <b>Rural Connectivity</b><br>+£1.1m | <b>Next Generation Wireless</b><br>+£0.2m |
|--------------------------------------------|-----------------------------------|-------------------------------------|-------------------------------------------|

A review of the original economic impact assessment within the Digital Infrastructure Programme's Full Business Case (FBC) indicated that the methodology used may not truly reflect the expected outcomes. In particular, the GVA impact multipliers applied for each of the workstreams were likely to be over-estimating the real expected impact of each project within the different workstreams due to notable differences in the characteristics of the underlying analysis. In addition to this, the analysis previously undertaken did not consider the impact to the region of making it more attractive to investors, in particular through the work of the Local Authority Digital Delivery Leads on supplier engagement and demand stimulation.

|                                                 |                                                  |                                                    |
|-------------------------------------------------|--------------------------------------------------|----------------------------------------------------|
| <b>Increased Additional Regional Investment</b> | <b>Wider Public Sector Investment</b><br>+£48.5m | <b>Additional Commercial Investment</b><br>+£37.4m |
|-------------------------------------------------|--------------------------------------------------|----------------------------------------------------|

By updating the appraisal methodology to more accurately reflect the underlying breakdown and characteristics of the projects involved within each workstream, this economic impact appraisal has demonstrated that the overall Economic Impact (as measured by GVA) has actually increased compared to the original FBC appraisal.

It is now expected that the overall programme will **increase regional GVA by £347.1m over 15-years**, compared to £318.8m previously. This is despite there being a reduction in the impact on GVA from the capital investment projects, which is more than offset by the benefits accrued to the region, including being more attractive to investors resulting from the work on supplier engagement and demand stimulation. In addition, the analysis showed that the Digital Infrastructure Programme has potential to generate over **£104.9m in wider socio-economic benefits** for the region.

|                                                                                                                                   |                                                                                                                                     |                                                                                                                                            |                                                                                                                                                                  |
|-----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CONNECTED PLACES</b><br><b>+£10.0m GVA</b>  | <b>RURAL CONNECTIVITY</b><br><b>+£11.2m GVA</b>  | <b>NEXT GENERATION WIRELESS</b><br><b>+£8.1m GVA</b>  | <b>SUPPLIER ENGAGEMENT &amp; DEMAND STIMULATION</b><br><b>+£317.8m GVA</b>  |
| <b>OVERALL IMPACT OF SWANSEA BAY CITY DEAL DIGITAL INFRASTRUCTURE PROGRAMME: +£347.1m GVA</b>                                     |                                                                                                                                     |                                                                                                                                            |                                                                                                                                                                  |

# 1. Introduction

## 1.1 Background

In 2020, as part of the Swansea Bay City Deal (SBCD), the Digital Infrastructure Programme aimed to improve connectivity across the region, focussing on three priority areas:

- **Connected Places** - This regional support project aims to increase fibre availability to premises in key urban areas. The project primarily targets economic growth zones within the region to provide world class digital infrastructure. This includes the provision of new duct and dark fibre to connect public sector assets, as well as upgrading the Public Sector Broadband Aggregation (PSBA) Wide Area Network (WAN) to some rural public sector sites across the region.
- **Rural Connectivity** – This supply-side intervention was designed to provide gigabit connectivity to premises across the region that have poor broadband service (< 30Mbps and therefore sub-superfast) and where the commercial market has no future plans to invest in broadband infrastructure. Under this workstream, SBCD plan to launch the '*Better Broadband Infill project*' (BBIP) and issue an Invitation to Tender (ITT) to the market for the provision of an open-access gigabit capable network to provide broadband services to sub-superfast premises within the Intervention Area.
- **Next Generation Wireless** - This project is focussed on the provision of next generation wireless connectivity in the form of 5G and IoT networks. This includes the 5G Innovation Fund and Regional Digital Innovation Network. While the use cases and business models for these technologies are still to emerge, the project aims to support SMEs in the early adoption of this technology.

During the delivery of the Digital Infrastructure Programme, there has been some rescoping of the funding allocated to each of the projects within the Connected Places workstream. The provision of duct and dark fibre has resulted in one contract being competitively awarded, with another contract due to be awarded shortly. Both are under budget based on the original estimates made within the Business Case. Another project, originally in the Connected Places workstream, Gigahubs (an anchor tenant style intervention), has been cancelled due to a lack of market appetite. Therefore, SBCD are seeking to re-deploy these funds to the Rural Connectivity workstream to increase the available budget for the BBIP with the aim of achieving near 100% coverage to sub-superfast premises. Currently, the BBIP has an available budget of £6m and a further £1m has also been allocated to the project from Carmarthenshire's County Council's Local Broadband Fund. It is anticipated that the budget for the BBIP procurement can be further increased to a total of £9.8m through the redeployment of funding from the Connected Places workstream underspend.

However, to redeploy the funds from the Connected Places workstream to the Rural Connectivity workstream, evidence needs to be provided to SBCD Executive Board members as to whether this will have a material impact on the economic benefit of the SBCD Programme as a whole. This report provides an updated Economic Impact Appraisal to understand the impact that the funding change will have on the overall GVA of the programme.

## 1.2 About FarrPoint

FarrPoint is an independent technology consultancy that specialises in digital connectivity. We provide independent advice on the commercial and technical considerations of the design of national and regional connectivity strategies, economic assessment, technical planning, and modelling, use case development, procurement support, and implementation assurance.

Our team comprises of a mix of consulting technologists, economists and data scientists who work together to provide experience, expertise, and complementary resource to clients in the public and private sectors.

Our approach is unlike many other consultancies; what clients get from FarrPoint is pragmatic guidance from a team that understands both the commercial, regulatory and policy considerations, plus how these connectivity and technology solutions can be delivered on the ground to deliver the desired benefits.

As trusted advisers, we build strong relationships with our clients based on empathy, flexibility, and independence. With decades of experience advising clients on connectivity, telecoms, and enterprise IT, we continue to evolve and innovate. We believe connectivity is the underlying mechanism to bringing social and economic benefits to communities.

Our team of economists brings extensive experience in delivering Economic Impact Appraisals and Business Cases for Digital Connectivity projects across the UK. Following HM Treasury Green Book guidelines, their evidence-based approach ensures that digital infrastructure and adoption programmes effectively demonstrate and maximize their benefits for the economy, society, and the environment.

## 1.3 Document Structure

This report is structured as follows:

- **Introduction** – this section sets out the purpose and structure of the document;
- **Review** – this section provides an overview and review of the previous economic impact assessment undertaken as part of the original SBCD Digital Infrastructure Programme Business Case;
- **Updated Economic Impact Analysis** – this section details the methodology and results of this updated Economic Impact Appraisal, including the key assumptions;
- **Conclusion** - this section provides a summary of the key findings of this analysis.

## 2. Review

### 2.1 Digital Programme Overview

The Digital Infrastructure Programme's Full Business Case<sup>1</sup> (FBC) sets out the estimated Economic Impact over 15 years (*Table 1*). The Economic Impact Assessment was undertaken by Cube.

| Workstream               | Investment                     |                                |                                |                              |                                        |                              |                              | GVA Impact     |
|--------------------------|--------------------------------|--------------------------------|--------------------------------|------------------------------|----------------------------------------|------------------------------|------------------------------|----------------|
|                          | Direct SBCD Capital Investment | Direct SBCD Revenue Investment | Other Public Sector Investment | Direct Commercial Investment | Additional Commercial Investment (ACI) | Total Investment (incl. ACI) | Total Investment (excl. ACI) |                |
| Connected Places         | £12.0m                         | £0.5m                          | -                              | £7.5m                        | £70.0m                                 | £90.0m                       | £20.0                        | £220.0m        |
| Rural Connectivity       | £6.0m                          | £2.0m                          | £13.5m                         | £4.0m                        | £48.9m                                 | £74.4m                       | £25.5m                       | £87.5m         |
| Next Generation Wireless | £2.5m                          | £2.0m                          | -                              | £5.0m                        | £3.0m                                  | £12.5m                       | £9.5m                        | £11.3m         |
| <b>Total:</b>            | <b>£20.5m</b>                  | <b>£4.5m</b>                   | <b>£13.5m</b>                  | <b>£16.5m</b>                | <b>£121.9m</b>                         | <b>£176.9m</b>               | <b>£55.0m</b>                | <b>£318.8m</b> |

*Table 1: Digital Infrastructure Funding and Impact Summary*

The remainder of this section reviews the modelling assumptions established for each of the individual workstreams, as set out within Annex 4 of the Digital Infrastructure Programme's Full Business Case.

## 2.2 Connected Places

### 2.2.1 SBCD Digital Infrastructure Programme FBC Analysis Summary

The economic impact analysis (*Table 2*) of the Connected Places workstream was based on Regeneris research<sup>2</sup> into the economic impacts of full fibre infrastructure over 100 UK cities and towns.

| Workstream                  | Investment                     |                                |                                |                              |                                        |                              |                              | GVA Impact     |
|-----------------------------|--------------------------------|--------------------------------|--------------------------------|------------------------------|----------------------------------------|------------------------------|------------------------------|----------------|
|                             | Direct SBCD Capital Investment | Direct SBCD Revenue Investment | Other Public Sector Investment | Direct Commercial Investment | Additional Commercial Investment (ACI) | Total Investment (incl. ACI) | Total Investment (excl. ACI) |                |
| Duct Investment/Procurement | £12.0m                         | £0.5m                          | -                              | £7.5m                        | £70.0m                                 | £20.0m                       | £9.5m                        | £220.0m        |
| <b>Total:</b>               | <b>£12.0m</b>                  | <b>£0.5m</b>                   | <b>-</b>                       | <b>£7.5m</b>                 | <b>£70.0m</b>                          | <b>£20.0m</b>                | <b>£9.5m</b>                 | <b>£220.0m</b> |

*Table 2: Connected Places Workstream Funding and Impact Summary*

<sup>1</sup> Source: SBCD (2020) - [Swansea Bay City Deal Digital Infrastructure Project Business Case](#)

<sup>2</sup> Source: Regeneris (2018) - [The Economic Impact of Full Fibre Infrastructure in 100 UK Towns and Cities](#)

Using the approach set out within the Regeneris paper, this analysis estimates that the direct benefits of c.£17 million of investment in the Swansea Bay Region are £200 million over 15 years. This multiplier of 11 is then used within the SBCD Connected place analysis to estimate that £20m of investment will result in £220 million in Economic GVA impact. These benefits are broken down as:

- Productivity improvements to business – 8%
- Increased business start-ups – 9%
- Innovation – 8%
- Network build – 19%
- Enhanced remote/flexible working – 11%
- Household benefits – 45%

The key assumptions behind this analysis are that: (i) services are enabled 1 year after the start of network build; (ii) a 35% adoption rate will be reached after 5 years; (iii) the productivity benefits will be achieved 1 year after adoption; and (iv) the innovation benefits will be realised 4 years after adoption.

### 2.2.2. Review

The Connected Places project aimed to increase fibre availability to premises in key urban areas. The interventions originally included as part of this workstream were: (i) the provision of new duct and dark fibre to connect public sector assets, as well as (ii) upgrading the Public Sector Broadband Aggregation Wide Area Network (PSBA) to several rural public sector sites across the region.

The economic assessment undertaken as part of the FBC is based on the Regeneris analysis of CityFibre's direct investment in Fibre to the Premise (FTTP) across 100 UK towns and cities. However, this differs from the Connected Places project in that:

- The Connected Places investment in ducting and dark fibre, as well as the PSBA, aimed to create a strategic hub/core network from which further private sector investment in actual FTTP network infrastructure can be incentivised.
- City Fibre's investment focused on direct FTTP connections to households and businesses in those areas. Consequently, assumptions about network build rates, such as cost per premise, connection rates, and service adoption, are expected to vary considerably from those of a hub/core network style investment. This variation will likely result in significantly different outcomes for the investment.
- The Regeneris assessment was also based on wider socio-economic impacts beyond GVA (which focussed on the output of the economy), for example the analysis takes into account wellbeing impacts.

This means that the original benefits of an investment multiplier of 11:1 will likely over-estimate the GVA impact of the Connected Places workstream. Another concern with the previous analysis is that it does not split the impact for the different initiatives within the workstream, considering both the duct/dark fibre investment and the PSBA investment to have the same magnitude of benefit. For the updated analysis in this report, we base the economic appraisal around a set of assumptions more accurately related to the investment undertaken.

## 2.3 Rural Connectivity

### 2.3.1 SBCD Digital Infrastructure Programme FBC Analysis Summary

The analysis of the economic impact (*Table 3*) of the Rural Connectivity workstream was based on analysis used by Ofcom to determine the Universal Service Obligation (USO).

| Workstream                | Investment                     |                                |                                |                              |                                        |                              |                              | GVA Impact    |
|---------------------------|--------------------------------|--------------------------------|--------------------------------|------------------------------|----------------------------------------|------------------------------|------------------------------|---------------|
|                           | Direct SBCD Capital Investment | Direct SBCD Revenue Investment | Other Public Sector Investment | Direct Commercial Investment | Additional Commercial Investment (ACI) | Total Investment (incl. ACI) | Total Investment (excl. ACI) |               |
| Supplier Engagement       | -                              | £0.5m                          | -                              | -                            | -                                      | £0.5m                        | £0.5m                        | -             |
| Demand Stimulation        | -                              | £1.5m                          | £3.5m                          | -                            | £28.9m                                 | £33.9m                       | £5.0m                        | £17.5m        |
| Infill Procurement (BBIP) | £6.0m                          | -                              | £10.0m                         | £4.0m                        | £20.0m                                 | £40.0m                       | £20.0m                       | £70.0m        |
| <b>Total:</b>             | <b>£6.0m</b>                   | <b>£1.5m</b>                   | <b>£13.5m</b>                  | <b>£4.0m</b>                 | <b>£48.9m</b>                          | <b>£74.4m</b>                | <b>£25.5m</b>                | <b>£87.5m</b> |

*Table 3: Rural Connectivity Workstream Funding and Impact Summary*

The Ofcom analysis highlights that the research<sup>3</sup> undertaken to make the case for investing in the USO, which ensures every premise in the UK has digital connectivity of at least 10Mbps, showed a benefit multiplier of 3.4-3.6.

In addition to this assessment, research undertaken by BT to assess the impact of investment in Northern Ireland suggested a benefit multiplier of between 2.5 and 3.9.<sup>4</sup> The BT analysis suggested that the delivery of 30Mbps services across rural areas in Northern Ireland, had delivered productivity growth (benefit multiplier 0.3-2.7 relative to cost), employment benefits (1.9-5.9 multiplier) and teleworking benefits (0.3 multiplier). For the assessment itself the FBC analysis is based on the 3.5:1 GVA multiplier.

### 2.3.2 Review

Similar to the Connected Places appraisal, the assessment of the impact of the investment in the Rural Connectivity workstream is based on a study of the USO intervention (using it as a proxy for investment in rural connectivity). The USO scheme, however, is significantly different to the interventions within this workstream in that:

- The USO is a demand side intervention, i.e. a household has to apply for USO investment when it is unable to get a 'decent connection', defined by Ofcom as a download speed of at least 10 Mbps and an

<sup>3</sup> Source: UK Government (2018) – [The Electronic Communications \(Universal Service\) \(Broadband\) Impact Assessment](#)

<sup>4</sup> Source: DotEcon (2018) - [Deployment of FTTP in rural Northern Ireland](#)

upload speed of at least 1 Mbps. The BBIP procurement is a supply side intervention, meaning assumptions around take-up etc. will be significantly different.

- No assessment has been made of the proportion of residential and non-residential premises. Previous analysis, such as DCMS' evaluation of its Superfast Programme, suggested that the benefit to cost ratio of non-residential coverage was over 12 times as high as that of residential coverage.<sup>5</sup>
- The impact multiplier has been applied to the total budget, which includes the £10m of "*Other Public Sector Contribution*", which is based upon a 50% contribution for central and regional Government schemes, notably the Rural Gigabit Connectivity (RGC) programme and Superfast Cymru run by the Welsh Government. This funding is based on the region capturing £10m of the £200m allocated national budget from Building Digital UK (BDUK), previously part of DCMS, as well as obtaining funding from Welsh Government. No evidence has been provided as to why the region would not have received the BDUK and Welsh Government funding without the City Deal being in place.
- The previous assessment was also based on wider socio-economic impacts beyond GVA (which focussed on the output of the economy), for example the analysis takes into account wellbeing impacts.

This means that the original benefits to investment multiplier of 3.5:1 will likely not be a true reflection of the impact of the Rural Connectivity workstream. For the updated analysis within this report, we will base the economic appraisal around a set of assumptions more accurately related to the investment undertaken.

## 2.4 Next Generation Wireless

### 2.4.1. SBCD Digital Infrastructure Programme FBC Analysis Summary

The FBC analysis highlighted that at the time of putting together the business case there was little evidence available for the direct impact of better 4G coverage, and none for 5G, as at the time these technologies had not been deployed, other than in testbeds. Despite this, the assessment highlighted that *"the general opinion of the industry is that 4G and 5G coverage is essential for both their general customer base and also industry and the service sector as a whole."*

The analysis was based on work undertaken for the EU in relation to 4G services being made widely available in Sweden and Estonia, which estimated a benefit ratio of 1.5:1.<sup>6</sup> The analysis of the economic impact (*Table 4*) of the Next Generation Wireless workstream was based on this research.

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<sup>5</sup> Source: DCMS (2018) - [Evaluation of the Economic Impact and Public Value of the Superfast Broadband Programme](#)

<sup>6</sup> Source: EU (2012) - [The benefits of 4G: Sweden and Estonia – European leaders in 4G](#)

| Workstream                    | Investment                     |                                |                                |                              |                                        |                              |                              | GVA Impact    |
|-------------------------------|--------------------------------|--------------------------------|--------------------------------|------------------------------|----------------------------------------|------------------------------|------------------------------|---------------|
|                               | Direct SBCD Capital Investment | Direct SBCD Revenue Investment | Other Public Sector Investment | Direct Commercial Investment | Additional Commercial Investment (ACI) | Total Investment (incl. ACI) | Total Investment (excl. ACI) |               |
| Infrastructure Review         | -                              | £2.0m                          | -                              | -                            | -                                      | £2.0m                        | £2.0m                        | -             |
| Support for Specific Projects | £2.5m                          | -                              | -                              | £5.0m                        | £3.0m                                  | £10.5m                       | £7.5m                        | £11.3m        |
| <b>Total:</b>                 | <b>£2.5m</b>                   | <b>£2.0m</b>                   | <b>-</b>                       | <b>£5.0m</b>                 | <b>£3.0m</b>                           | <b>£12.5m</b>                | <b>£9.5m</b>                 | <b>£11.3m</b> |

*Table 4: Digital Infrastructure Funding and Impact Summary (Source: SBCD FBC)*

## 2.4.2. Review

Several previous studies have been undertaken on the benefit of 4G and 5G coverage, that could potentially give more accurate figures for the impact of the Next Generation Wireless workstream. For example:

- A 2024 study, by FarrPoint for EE, showed that improving 4G connectivity could generate more than £6 million for a rural community.<sup>7</sup>
- Research by Capital Economics found that the introduction of 4G mobile networks has added 0.5% to UK GDP, unlocking £5.5 billion in investment and creating 125,000 jobs.<sup>8</sup>
- Research by Ericsson suggested that a 10% increase in mobile broadband adoption causes an initial 0.8% increase in GDP, with this effect gradually decreasing over time.<sup>9</sup>
- A study by GSMA found that a 10% increase in the adoption of mobile technology drives an increase in GDP from between 0.46% and 2.55%.<sup>10</sup>
- A Cambridge Econometrics study for UK Government's DCMS suggested that by 2035 the annual GVA of the UK could be 0.4-1.6% higher as a result of 5G technology.<sup>11</sup>
- Research by Oxford Economics found that 5G integration has the potential to boost productivity by 1.7% by 2030, equivalent to 10% of global GDP growth in this period.<sup>12</sup>

However, as the planned restructuring of programme funds is from the Connected Places workstream to the Rural Connectivity workstream, the values from the original FBC continue to be used as part of the overall economic impact of the SBCD Programme.

<sup>7</sup> Source: FarrPoint, EE (2024) - [Rural 4G Connectivity: Analysing the community benefits of mobile investment](#)

<sup>8</sup> Source: EE (2012) - [Research by Capital Economics, commissioned by Everything Everywhere](#)

<sup>9</sup> Source: Ericsson (2019) - [Mobile broadband drives economic development](#)

<sup>10</sup> Source: GSMA (2020) - [Mobile technology: two decades driving economic growth](#)

<sup>11</sup> Source: Cambridge Econometrics, DCMS (2021) - [Realising the Benefits of 5G](#)

<sup>12</sup> Source: Oxford Economics (2023) - [The Global Economic Potential of 5G-enabled Technology](#)

## 3. Updated Economic Impact Analysis

### 3.1 Updated Investment Funding & Workstream Structure

At the outset, a key change for this assessment is that the Swansea Bay City Deal revenue expenditure is not being delivered at a per workstream level. In addition, it also includes 'Other Public Investment' such as Gigabit vouchers and other public interventions, as well as 'Additional Commercial Investment'. This commercial investment does not specifically relate to any of the three workstreams directly but is influenced by the SBCD project team and Digital Delivery Leads contained within an additional workstream 'Supplier Engagement & Demand Stimulation'.

A summary of the level and timing of investment to date and forecast expenditure, and sources used in our revised assessment:

- **Direct SBCD Capital Investment** – spend to date and expectations on future capital expenditure within the SBCD project are provided by the SBCD project team, from 2020/21 to 2026/27.
- **Direct SBCD Revenue Investment** – spend to date and expectations on future revenue expenditure within the SBCD project are provided by the SBCD project team from 2020/21 to 2026/27.
- **Other Public Sector Investment** – wider public sector investment in digital connectivity in the region has been obtained from the 2021/22 and 2022/23 Swansea Bay City Deal Digital Investment Reports. Expectations up to 2026/27 of wider public sector investment in the following workstreams are:
  - **Rural Connectivity: Better Broadband Infill Project** – expectation for the profile of spend of the additional £1.05m have been provided by the SBCD project team.
  - **Supplier Engagement & Demand Stimulation: Wider Fixed Investment** – expectations for the future profile include: in 2023/24 and 2024/25 it is assumed that other public sector investment is in line with the 2022/23 level (i.e. £3.4m). It is assumed that expenditure on Project Gigabit is split equally between 2025/26, 2026/27, and 2027/28 (i.e. £19.9m per year, based upon the number of premises expected to be built to multiplied by the expected cost of those premises).
  - **Supplier Engagement & Demand Stimulation: Wider Mobile Investment** – whilst future expenditure on programmes such as the Shared Rural Network (SRN) are unknown, this modelling has assumed that of the 26 masts planned in Carmarthenshire<sup>13</sup>, 2 have already been built, 8 will be built in each of the following years.
- **Direct Commercial Investment** – it is assumed that, unless data is available from the SBCD, then in line with the original FBC, 20% of the total capital cost of the projects will be provided by direct commercial investment for each of the workstream from 2020/21 to 2026/27.

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<sup>13</sup> Source: [Plans to boost mobile coverage in Carmarthenshire's worst served areas](#), Swansea Bay City Deal

- **Additional Commercial Investment** - additional commercial investment in fixed and mobile networks to date, which is not directly associated with the individual workstreams, has been obtained from the 2021/22 and 2022/23 Swansea Bay City Deal Digital Investment Reports. Expectations up to 2026/27 on future additional commercial investment in the following workstreams are:
  - **Supplier Engagement & Demand Stimulation: Wider Fixed Investment** – it is assumed that up to the end of 2025, when the UK is expected to reach its national 85% gigabit target, commercial roll-out will be in line with the average investment in 2021/22 and 2022/23. In the subsequent years it is assumed that commercial investment will reduce by 10% each year. Assumptions around the proportion of this which is related to the SBCD Supplier Engagement & Demand Stimulation are outlined in Section 3.6.1.
  - **Supplier Engagement & Demand Stimulation: Wider Mobile Investment** – it is assumed that the investment in barrier busting by the Local Authority Digital Delivery Leads helps to reduce barriers such as planning regulation and street works, and potentially make more public sector assets available for use by operators to deploy equipment, all of which continue to attract investment into the region. In line with 2022/23 it is assumed that a further 2 macro masts and an additional 10 micro sites are installed in each of the remaining years.

| Workstream                                        | Direct SBCD Capital Investment | Direct SBCD Revenue Investment | Other Public Sector Investment | Direct Commercial Investment | Additional Commercial Investment | Total Investment |
|---------------------------------------------------|--------------------------------|--------------------------------|--------------------------------|------------------------------|----------------------------------|------------------|
| <b>Figures from Original Full Business Case</b>   |                                |                                |                                |                              |                                  |                  |
| Connected Places                                  | £12.0m                         | £0.5m                          | -                              | £7.5m                        | £70.0m                           | £90.0m           |
| Rural Connectivity                                | £6.0m                          | £2.0m                          | £13.5m                         | £4.0m                        | £48.9m                           | £74.4m           |
| Next Generation Wireless                          | £2.5m                          | £2.0m                          | -                              | £5.0m                        | £3.0m                            | £12.5m           |
| <b>Total:</b>                                     | <b>£20.5m</b>                  | <b>£4.5m</b>                   | <b>£13.5m</b>                  | <b>£16.5m</b>                | <b>£121.9m</b>                   | <b>£176.9m</b>   |
| <b>Updated Funding &amp; Workstream Structure</b> |                                |                                |                                |                              |                                  |                  |
| Connected Places                                  | £8.3m                          | -                              | £1.1m                          | £1.7m                        | -                                | £11.1m           |
| Rural Connectivity                                | £7.1m                          | -                              | -                              | £1.8m                        | -                                | £8.8m            |
| Next Generation Wireless                          | £2.7m                          | -                              | £0.9m                          | £1.2m                        | -                                | £4.8m            |
| Supplier Engagement & Demand Stimulation          | -                              | £4.3m                          | £60.0m                         | £17.6m                       | £159.3                           | £241.3m          |
| <b>Total:</b>                                     | <b>£18.1m</b>                  | <b>£4.3m</b>                   | <b>£62.0m</b>                  | <b>£16.5m</b>                | <b>£159.3m</b>                   | <b>£266.0m</b>   |
| <i>Notes: Totals may not sum due to rounding</i>  |                                |                                |                                |                              |                                  |                  |

*Table 5: Effect of changing in funding structure on Digital Programme Investment*

A full expected breakdown by workstream over time is provided in the Appendices.

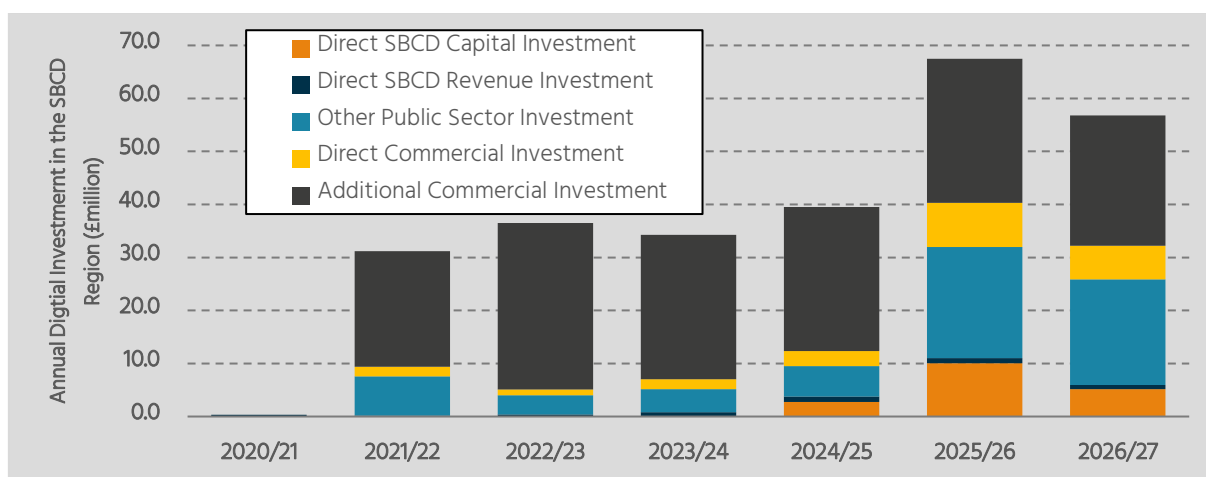


Figure 1: Digital Programme Investment Time Series

## 3.2 Programme Economic Appraisal Methodology

If the multiplier approach that was taken within the original FBC is applied to the updated funding structure (and updates to investment to date and future investment expectations), then the related investment and associated 'GVA Economic Impact' would suggest a decrease in the GVA impact of nearly half (original forecast of GVA impact of £318.8m, down to £160.1m). This is shown in Table 6 below.

| Workstream                               | Total Investment<br>(incl. Additional Commercial Investment) | Total Investment<br>(excl. Additional Commercial Investment) | GVA Impact     |
|------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|----------------|
| Figures from Original Full Business Case |                                                              |                                                              |                |
| Connected Places                         | £90.0m                                                       | £20.0                                                        | £220.0m        |
| Rural Connectivity                       | £74.4m                                                       | £25.5m                                                       | £87.5m         |
| Next Generation Wireless                 | £12.5m                                                       | £9.5m                                                        | £11.3m         |
| <b>Total:</b>                            | <b>£176.9m</b>                                               | <b>£55.0m</b>                                                | <b>£318.8m</b> |
| Updated Funding & Workstream Structure   |                                                              |                                                              |                |
| Connected Places                         | £11.1m                                                       | £11.1m                                                       | £122.0         |
| Rural Connectivity                       | £8.8m                                                        | £8.8m                                                        | £30.9m         |
| Next Generation Wireless                 | £4.8m                                                        | £4.8m                                                        | £7.2m          |
| Supplier Engagement & Demand Stimulation | £241.3m                                                      | £81.9m                                                       | -              |
| <b>Total:</b>                            | <b>£266.0m</b>                                               | <b>£106.7m</b>                                               | <b>£160.1m</b> |

Notes: Totals may not sum due to rounding

Table 6: Effect of changing in funding structure on Digital Programme economic impact (Source: SBCD FBC)

Given the issues of the original approach highlighted within Section 2, an alternative methodology has been used to estimate the true expected investment from each workstream, and to understand the expected impact from this investment. This socio-economic impact is split into GVA impact and 'Other Socio-economic impacts' (including factors such as improvements in wellbeing, reduced Local Authority costs and increased house prices).

The following economic appraisal of the SBCD's Digital Programme fully complies with the latest HM Treasury Green Book<sup>14</sup> guidance. Whilst there are specific assumptions applied to each of the individual workstreams to take into account differences in deployment and characteristics of the projects, there are several overarching assumptions which apply:

**Assumption 1: Appraisal Period** - The forecasted investment and impact profile has been appraised over a 15-year period, consistent with standard guidance on appraising digital investment projects.

**Assumption 2: Discounting and Social Time Preference** – A discount rate of 3.5% has been applied to the impact figures to obtain the 'Present Value', in line with HM Treasury Green Book guidance to ensure benefits occurring over different periods of time are compared on a consistent basis. Discounting is based on the concept of time preference, i.e. generally, people prefer value now rather than later.

**Assumption 3: Persistence** – For each individual impact measured (GVA, wellbeing, and local authority savings) it is important to take into account the decreasing impact of any digital connectivity intervention over time. Given there is currently no value for gigabit intervention, the modelling uses the results of the DCMS Superfast Broadband Programme Evaluation<sup>15</sup> as a proxy, this suggested that the estimated impact on premises upgraded with higher broadband speeds reduced after two years following the intervention with a rate of decay of 13.2% per annum.

In addition to these overarching digital programme assumptions, the following sections outline the assumptions specific to each of the individual projects and workstreams.

## 3.3 Connected Places

### 3.3.1 Assumptions

As set out within Section 2.2.1, the original FBC assessment of the impact of the Connected Places workstream was based on the Regeneris research into the economic impacts of full fibre infrastructure over 100 UK cities and towns. However, that analysis was based on CityFibre's direct investment in Fibre-to-the-Premise (FTTP) infrastructure. This type of direct 'FTTP premises passed' investment is different to the Connected Places

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<sup>14</sup> Source: HM Treasury [The Green Book \(2022\)](#).

<sup>15</sup> Source: [Evaluation of the Superfast Broadband Programme](#), UK Government DCMS

strategic public sector site infrastructure investment. The Connected Places investment is more similar to the UK Government's Local Full Fibre Network (LFFN) demand site intervention, which leads to a lower level of premises passed and household take up than the direct CityFibre FTTP build. This in turn means that the original FBC assessment is likely to have overestimated the economic GVA impact of the Connected Workplaces workstream.

The original Full Business Case for the LFFN programme established a Benefit to Cost ratio of 3.5:1, this is considerably below the 11:1 ratio used in the FBC approach.<sup>16</sup> The 2023 evaluation of the LFFN programme Wave 1<sup>17</sup> found evidence that the projects led to public sector costs savings, including direct savings such as reduced cost of connections and indirect cost savings in reducing the resources required to undertake administrative tasks. This initial evaluation of the first wave of LFFN projects suggested that there had been limited additional gigabit-capable connectivity delivered in the local area (within 1km of the project build), above that which would have happened in the absence of the projects. The evaluation highlighted that this limits the longer term social economic benefits that the projects have been able to generate in terms of economic (GVA growth), social and environmental. However, they do note that this may be in part due to full impacts of the programme not yet being felt and there may be later impacts. In addition, COVID-19 may have had an impact in the intervening period.

**Assumption 4: Medium to Long term GVA impact** – At this stage is difficult to provide an accurate forecast of the true GVA impact of Connected Places projects given they are unlikely to be as high as the original LFFN 3.5 multiplier. Therefore, this appraisal assumes that there is no medium to long term GVA impacts of the Connected Places project.

An estimate can be calculated of the GVA impact of network construction impacts i.e. the investment of public funds into digital infrastructure, together with the leveraged private sector investment. This itself creates (or safeguards) economic activity in the relevant telcos and their supply chains during the construction phase, e.g. in manufacturing the required additional equipment, undertaking civil engineering for new ducts, installing new fibre cable and cabinets etc. In a previous UK Broadband Impact report<sup>18</sup>, this construction impact was estimated to be an investment multiplier of 0.9. Whilst this has been included as a regional impact of the Swansea Bay City Deal it is important to note that if this impact assessment was considered as part of the UK-wide City Deal programme, then the construction GVA impact would likely have been displaced from construction projects elsewhere in the UK, so the net impact would be 0.

**Assumption 5: Short term GVA impact** – It is assumed that the 0.9 regional GVA network construction multiplier is attributed to the total capital expenditure of each of the Connected Places' projects.

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<sup>16</sup> Source: [Accounting Officer Assessment Of The Business Case For Local Full Fibre Networks Programme](#), UK Government DCMS

<sup>17</sup> Source: [Local Full Fibre Network \(LFFN\) Wave 1 Final Evaluation](#), UK Government BDUK

<sup>18</sup> Source: [UK Broadband Impact Study](#), UK Government, SQW

Whilst the LFFN Wave 1 Evaluation indicated that the key benefits of investment into public sector sites was in the direct and indirect savings that it enabled for the public sector, this will largely be dependent on the services provided by the public sector sites. For the purposes of this impact appraisal, these benefits have not been quantified.

### 3.3.2. Results

Table 7 presents the results of the updated analysis of the expected investment and impact of the three Connected Places projects. This shows a significant decrease in the GVA impact of this workstream, from £220.0m (as shown in table 6) to £10.0m. This is due to the over estimation of the original business case multiplier, as well as the decrease in funding.

| Project                                       | GVA Impact    | Other Socio-economic Impacts |
|-----------------------------------------------|---------------|------------------------------|
| Dark Fibre East                               | £1.5m         | -                            |
| Dark Fibre Carmarthenshire                    | £5.6m         | -                            |
| PSBA                                          | £2.8m         | -                            |
| <b>Total:</b>                                 | <b>£10.0m</b> | -                            |
| <i>Notes: Totals may not sum due rounding</i> |               |                              |

*Table 7: Updated Connected Places Expected Impact Results*

## 3.4 Rural Connectivity

### 3.4.1. Assumptions

As set out in Section 2.3.1. the original FBC assessment of the impact of the Rural Connectivity workstream was based on Ofcom analysis of the USO programme. As cited within Section 2.3.2, the USO programme is a demand side intervention and the BBIP is a supply side intervention, and so the assumptions within the underlying analysis, for example around service take-up, will be significantly different. This means the original benefits to investment multiplier of 3.5:1 will likely be an over-estimation of the impact of the Rural Connectivity workstream.

To establish the **GVA impact** a range of economic benefits (set out in Section 3.1) have been taken into account, including impact on the size of the local economy, increased innovation, more flexible working allowing an increase in the labour force, and opening up opportunities to larger markets, both nationally and internationally. Whilst it is widely accepted that investing in improved digital connectivity can yield significant positive benefits, it is also recognised that the relative size of the improvements in connectivity speeds are not linear. i.e., the doubling a household's connectivity does not necessarily double the benefits profile. The majority of the benefits accumulated by improving digital connectivity can be attributed to the initial improvement to decent levels of broadband connectivity. Beyond a superfast-plus connection (>30Mbps), there is limited benefit to individual households, as any additional speed uplift is beyond the current

requirement of the average consumer. However, there is still a slight uplift for higher bandwidth users and to take into account futureproofing of technology. For example, research by the OECD finds that after households are given a connection any subsequent doubling in broadband speeds will contribute to 0.3% economic growth compared with the growth rate in the base year.<sup>19</sup> This is backed up by Ofcom research that found giving households superfast connectivity increased GVA by 0.37%, whilst improving speeds only increased output by 0.10% in the UK.<sup>20</sup>

**Assumption 6: GVA impact of improved broadband connectivity** - For the purposes of this benefits appraisal, it is assumed that premises which are being connected, and have a sub-superfast connection (<30Mbps) obtain +0.47% GVA growth per year (this includes an initial +0.37% superfast uplift and +0.10% for improved connectivity). Premises that already have a superfast plus connection (>30Mbps) are assumed to see a GVA improvement of only +0.10% a year.

Given the BBIP covers only premises with a sub-superfast connection, the full +0.47% uplift has been applied to GVA over the 15-year period.

Premises connected have been split by residential and non-residential. An average GVA per residential household and non-residential business has then been calculated using ONS household and population data and business surveys for each of the four local authorities. A population-based average has then been produced for the Swansea Bay City Region. This gives a base year GVA per residential premise of £47,639, and a per non-residential premise baseline of £576,600. It is also assumed that GVA per premise will grow at an average of 3.5% per year (based on the average per head GVA annual growth for 1999-2020 for Wales).

**Assumption 7: Adoption Delay** - In line with the original business case methodology, it has been assumed that economic GVA impacts begin to be accrued one year after network deployment, to take into account connection and adoption.

Due to the complex nature of broadband infrastructure deployment and the various factors influencing successful delivery, it is unlikely that 100% of the premise contracted to be connected via the BBIP will actually be. This can be due to factors such as geographic challenges, economic conditions, and the efficiency of contracting processes.

**Assumption 8: BBIP Delivery** – It has been assumed that 85% of the premises will be contracted following the BBIP procurement, and these will be delivered by a supplier.

**Assumption 9: BBIP Deployment** – It has been assumed that the network build will occur over two years, in line with the projected BBIP spend profile – i.e. 57% in 2025/26 and 43% in 2026/27.

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<sup>19</sup> Source: [Does broadband speed really matter for driving economic growth? OECD](#)

<sup>20</sup> Source: [The economic impact of broadband, Ofcom](#)

**Assumption 10: Residential vs. Non-Residential Premise Split** – Figures have been provided by the SBCD on the split of the number of residential and non-residential premises within the BBIP intervention area – i.e. 90% residential vs. 10% non-residential

In addition to the GVA impact, a wider range of ‘**Other Socio-economic Impacts**’ were also quantified, as follows:

- **House Price Uplift** – In line with other impact assessments of improvements in digital connectivity this impact takes account of the uplift to houses which currently have poor/no connectivity. As with the GVA uplift, it is important to take into account the different impact of a house having access to the internet and to the speed of that connectivity increasing. Analysis of the impact of obtaining a superfast connection has been shown to be between 0.56% and 1.16%. For this appraisal a conservative figure of 0.8% will be used for the initial impact of connectivity.<sup>21</sup> For the subsequent improvement due to increasing the broadband speed, further research has been utilised which estimates a 0.5% uplift in house prices for full fibre relative to superfast broadband.<sup>22</sup> To calculate the aggregate impact of the improvement in connectivity, the value of housing within the Swansea Bay City Region has been calculated using the UK Government’s House Price Index, which gives a base year house price up to 2023/24 (£196,813), with the figures for subsequent years increasing in line with long term house price annualised growth of 5.1%.

**Assumption 11: House Price Uplift** – It has been assumed that residential premises which are being connected, and have a sub-superfast connection receive a +1.3% uplift in house price value (this includes an initial +0.8% superfast uplift and +0.50% for improved connectivity). Premises connected that have an existing superfast plus connection only see a house price uplift of +0.50%. It is assumed that this benefit is obtained in the year that the premise obtains the new connection.

- **Wellbeing Impact** – Whilst the majority of the impacts on society are qualitative, and so difficult to measure, analysis by DCMS has associated the Superfast Programme with an annual wellbeing uplift equivalent to £222.25 per premise.<sup>23</sup> This is based on a subjective wellbeing analysis undertaken as part of the evaluation of the Superfast Broadband programme. The use of subjective wellbeing to measure and value impact in the telecommunications industry reflects the increasing importance of this approach in policy making. This econometric analysis indicates that access to superfast broadband is associated with an increase in wellbeing, measured as life satisfaction, even when controlling for other key determinants of wellbeing (including, but not limited to, earnings, age, education, ethnicity, employment, population density).

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<sup>21</sup> Source: [Superfast Broadband Programme – State aid Evaluation Report 2020 \(January 2021\)](#)

<sup>22</sup> Source: [The Economic Impact of Full Fibre Infrastructure in 100 UK Towns and Cities, Regeneris](#)

<sup>23</sup> Source: [Superfast Broadband Programme – State aid Evaluation Report 2020 \(January 2021\)](#); [Subjective wellbeing analysis of the Superfast Broadband Programme - Technical Annex \(January 2018\)](#)

**Assumption 12: Wellbeing Impact** – It has been assumed that this £222.25 Wellbeing impact is gained from an initial connection, with any further improvements from increases in speed being negligible.

- **Local Government Savings Impact** – Using a similar approach to that set out in a recent report on the impact of full fibre infrastructure, the savings to the four local authorities due to enabling the online delivery of services to these premises have been estimated to be 1.2% per year. This reduction in local authority spending is based on analysis undertaken by NESTA.<sup>24</sup> The value for baseline local authority expenditure was obtained from their published budgetary figures, adjusted by population.

**Assumption 13: Local Government Savings Impact** – It has been assumed that for each residential premises being connected that had a sub-superfast connection, there is a saving of 1.2% on the estimated local authority spending per household.

### 3.4.2. Results

Table 8 presents the results of the updated analysis of the expected investment and impact of the BBIP, within the Rural Connectivity workstream. The results show a significant decrease in the GVA impact of this workstream, from £87.5m (as shown in table 6) to £11.2m, this is due to the over estimation of the original business case multiplier.

| Project                         | GVA Impact    | Other Socio-economic Impacts |
|---------------------------------|---------------|------------------------------|
| Better Broadband Infill Project | £11.2m        | £9.1m                        |
| <b>Total:</b>                   | <b>£11.2m</b> | <b>£9.1m</b>                 |

*Notes: Totals may not sum due to rounding*

*Table 8: Updated Rural Connectivity Expected Investment and Impact Results*

## 3.5 Next Generation Wireless

### 3.5.1. Assumptions

As set out within Section 2.4.1, the original FBC economic appraisal of Next Generation Wireless recognised that, at the time, there was limited evidence on the impact of investment in 4G, let alone more advanced 5G networks. Taking this into account, the original analysis applied a 1.5:1 GVA multiplier based on research of the impact of 4G in Sweden and Estonia. Given the two-capital funded projects contained within the Next

<sup>24</sup> Source: [Connected Councils: A Digital Vision of Local Government in 2025, NESTA](#)

Generation Wireless workstream are based upon 5G and LoRaWAN IoT technology, more recent analysis around these solutions needs to be taken into account.

There is a large amount of uncertainty around the true impact of 5G. Some studies have suggested that the combination of low latency and high bandwidth offered by 5G could add £43 billion<sup>25</sup> by 2030 across the UK economy, or over £6 billion<sup>26</sup> in the manufacturing sector alone by 2030. However, despite these estimates suggesting the technology will significantly boost productivity, there are yet to be use cases delivered at the scale necessary to begin to demonstrate the £billions in benefits the studies have suggested.

For the purposes of estimating the impact of the 5G Innovation Fund, analysis by Accenture is used which suggests that the cost to benefit multiplier for 5G technology investment is 2:1.<sup>27</sup> When it comes to the final evaluation of this project, a full assessment of the GVA impact should be based on the exact use cases funded, and the impact that have on the economy

**Assumption 14: Impact of 5G Investment** – It has been assumed that the investment in 5G technology-based projects has a 2:1 GVA return on investment.

As highlighted, key to measuring the impact of digital technology is understanding the associated use cases. This is particularly important for mobile connectivity investments, where the use cases can be less well known.

The Digital Innovation Network is focussed on the use of LoRaWAN IoT technology. It installs gateways and sensors to facilitate the following use cases, and promotes the adoption of data driven decision making to support public sector service delivery, efficiencies across facilities management, and cost savings:

- Monitoring entry and exit at car parks to notify users on spaces available/ when at capacity.
- Visitor footfall monitoring in town centres across the region and sharing data with local businesses to inform key business decisions.
- Environmental monitoring.
- Temperature and humidity monitoring at public sector buildings, especially schools.
- Waste management, for example, deployment of bin sensors to determine when they are at capacity and using this data to inform waste clearance routes and frequencies.
- Theft and anti-social behaviour in parks and other hot spots.
- Water safety – sensors deployed on life buoys in Llyn Llech Owain (Carmarthenshire) to notify the operations team when deployed.

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<sup>25</sup> Source: [Adoption of 5G Technology Analysis](#), PWC (2021)

<sup>26</sup> Source: [Powering Up Manufacturing, Levelling Up Britain](#), Vodafone (2021)

<sup>27</sup> Source: [The Impact of 5G on the European Economy](#), Accenture (2021)

**Assumption 15: Impact of Digital Innovation Network** – Given the focus of the use cases is on improving safety, generating Local Authority savings, and environmental outcomes, it is assumed that the GVA impact of this project is minimal. However, as part of the final evaluation a full assessment of the GVA and wider socio-economic impact should be based upon the exact use cases funded.

### 3.5.2. Results

Table 9 presents the results of the updated analysis of the expected investment and impact of the 5G Innovation Fund and Digital Innovation Network projects as part of the Next Generation Wireless workstream. The results provide a more accurate economic impact of the projects based on the technology involved. However, this has resulted in a slight decrease in the GVA impact from £11.3 million to £8.1 million. This is driven by the overestimation of the original business case multiplier.

| Project                    | GVA Impact   | Other Socio-economic Impacts |
|----------------------------|--------------|------------------------------|
| 5G Innovation Fund         | £8.1m        | -                            |
| Digital Innovation Network | -            | -                            |
| <b>Total:</b>              | <b>£8.1m</b> | -                            |

*Notes: Totals may not sum due to rounding*

*Table 9: Updated Next Generation Wireless Expected Investment and Impact Results*

## 3.6 Supplier Engagement & Demand Stimulation

### 3.6.1. Assumptions

The SBCD revenue expenditure is not being delivered at a per workstream level. In addition, the gigabit voucher/ wider 'Other Public Investment' and 'Additional Commercial Investment' are not related to any of the three workstreams directly, but are influenced by the SBCD project team, including the individual Local Authority Digital Delivery Leads. Therefore, the investment and related impacts are contained within an additional workstream 'Supplier Engagement & Demand Stimulation'.

#### *Wider Fixed Investment*

The section focussing on assessing the potential impact that the work of the SBCD project team and Local Authority Digital Delivery Leads has had on fixed broadband roll out. These benefits of additional commercial and public investment on fixed broadband are largely from the increased roll out of gigabit capable fibre infrastructure, which is modelled in a similar way to the analysis of the Better Broadband Infill Project (BBIP). The modelling of this benefit uses some of the same assumptions as outlined in previous sections, specifically: 1 (Appraisal Period), 2 (Discounting and Social Time Preference), 3 (Persistence), 6 (GVA impact of improved broadband connectivity), 7 (Adoption Delay), 8 (BBIP Delivery), 9 (BBIP Delivery), 10 (House Price Uplift), 11

(Wellbeing Impact), and 12 (Local Government Savings Impact). Analysis has included the expected numbers of premises to be connected.

**Assumption 16: Number of Publicly Delivered Premises** – Section 3.2.1. sets out the levels of ‘Other Public Sector Investment’ within the lifespan of the project. The number of premises connected by the commercial roll out has been calculated using these investment figures divided by the average connection cost per premise to date. It has also been assumed that the proportion of residential vs. non-residential premises is in line with that of the BBIP (Assumption 10).

**Assumption 17: Number of Commercially Delivered Premises** – Section 3.2.1 sets out the levels of ‘Other Commercial Investment’ with the investment to date being based on figures obtained from suppliers, and an assumption that commercial investment will reduce by 10% each year. The impact that this has on new gigabit connections is based on achieving the UK Government targets of 85% coverage by end of 2025, and 100% by 2030, taking into account the additional premises connected via public intervention.

The SBCD project team and individual Local Authority Digital Delivery Leads have had an important roll in helping to attract commercial activity to the region, through supplier engagement, demand stimulation activity, and by reducing barriers to the deployment of digital infrastructure. However, a large proportion of this commercial investment would have occurred within the region without this activity.

It is difficult to put an exact figure on the impact the SBCD project team and individual Local Authority Digital Delivery Leads have had on the market without in-depth engagement with suppliers. For this high-level assessment of the potential impact of the SBCD work, the analysis takes into account wider trends in public and private investment. For example, the UK Government estimated that public investment can mobilise private capital from institutional investors at a leverage ratio of 3:1<sup>28</sup>. The Resolution Foundation suggesting this figure could be 5:1<sup>29</sup>

Therefore, further work should be completed during the evaluation stage of the programme to understand whether investment in the region was increased or brought forward due to the Supplier Engagement & Demand Stimulation work undertaken through the Digital Infrastructure Programme.

**Assumption 18: Impact of SBCD on Commercial Investment** – Taking into account a more conservative estimate of the amount of investment stimulated by the SBCD Supplier Engagement & Demand Stimulation activity, the ratio of investment without SBCD supplier engagement vs with SBCD supplier engagement is assumed to be 5:1. This is used for the impact on ‘Additional Commercial Investment’ for both fixed and mobile connectivity.

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<sup>28</sup> Source: : [National Wealth Fund: Mobilising Private Investment](#), UK Government (2024)

<sup>29</sup> Source: [Cutting the cuts](#), Resolution Foundation (2023)

### Wider Mobile Investment

The impact of the wider mobile investment focussed on the micro-infill and macro cellular sites used to improve mobile connectivity. While there is limited existing research on these specific types of infrastructure, there is growing evidence on the impact of improved mobile connectivity (as set out in Section 2.4.2.). For this assessment, analysis is based uses a recent FarrPoint study that indicated that a single 4G mast could generate over £1.8 million in GVA benefits, and over £6 million in total socio-economic impact.<sup>30</sup>

**Assumption 19: Economic Impact of 4G Investment** – A conservative estimate of the GVA to investment multiplier of improved mobile connectivity of 2:1 was used, with the wider average socio-economic impact to investment ratio of 1:1 being applied to the investment in mobile infrastructure.

## 3.6.2. Results

In the original FBC, the impact of the “Other Public Sector Investment” was only included in the Rural Connectivity workstream (£13.5 million in FBC), with the multiplier associated benefits with the public sector investment being £47.6m. On the impact of the ‘Direct SBCD Revenue Investment’, only the £0.5m within the Connected Places workstream was associated with a GVA benefit (£10.0m). In the original methodology there was no GVA impact associated with any of the “Additional Commercial Investment” spurred by the work of the SBCD project team and individual Local Authority Digital Delivery Leads on supplier engagement and demand stimulation.

We know that the amount of commercial investment into the region has significantly outpaced what was expected when the original FBC was produced. In part, this has been due to the general nationwide commercial gigabit capable roll-out, but it has also been the case that the work of the SBCD project team and individual Local Authority Digital Delivery Leads has ensured that the region attracts as much of that investment as possible and reduces barriers to infrastructure deployment.

While this workstream was not explicitly set out within the original FBC, our analysis shows there is a significant uplift to the economic impact of the ‘Supplier Engagement & Demand Stimulation’ work being undertaken by the SBCD project team and individual Local Authority Digital Delivery Leads. This is estimated to deliver £317.8m in GVA benefits, alongside £86.6m in other socio-economic impacts.

| Project                                          | GVA Impact     | Other Socio-economic Impacts |
|--------------------------------------------------|----------------|------------------------------|
| Wider Fixed Investment                           | £299.3m        | £86.6m                       |
| Wider Mobile Investment                          | £18.5m         | £9.3m                        |
| <b>Total:</b>                                    | <b>£317.8m</b> | <b>£54.8m</b>                |
| <i>Notes: Totals may not sum due to rounding</i> |                |                              |

<sup>30</sup> Source: FarrPoint, EE (2024) - [Rural 4G Connectivity: Analysing the community benefits of mobile investment](#)

*Table 10: Supplier Engagement & Demand Stimulation Expected Impact Results*

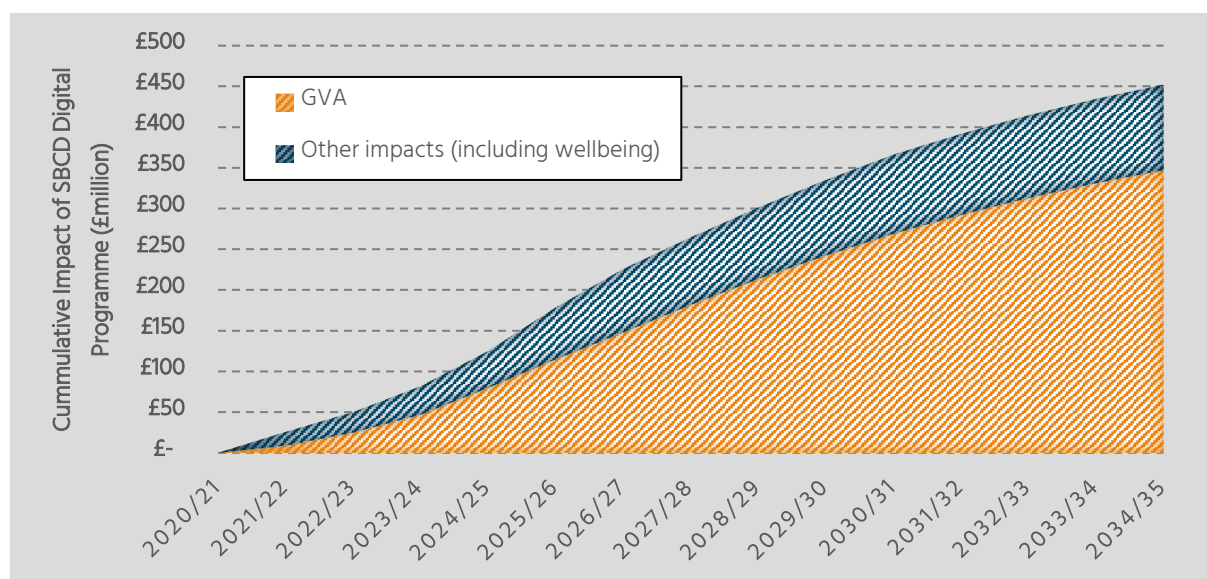
## 4. Conclusion

As part of a funding restructure exercise conducted by the Swansea Bay City Deal (SBCD) Digital Infrastructure Programme, an economic assessment was needed to ascertain the impact these changes to the funding and structure of the individual workstreams would have on the overall expected economic impact (GVA) of the Digital Infrastructure programme.

- Decreased capital investment in the Connected Places workstream (-£3.7m)
- Increased capital investment in the Rural Connectivity workstream (+£1.1m)
- Increased capital investment in the Next Generation Wireless workstream (+£0.2m)
- Decreased overall revenue investment (-£0.2m)

A review of the original economic impact assessment within the Digital Infrastructure Programme's Full Business Case (FBC) indicated that the methodology used may not truly reflect the expected outcomes. In particular, the GVA impact multipliers applied for each of the workstreams were likely to be over-estimating the real expected impact of each project within the different workstreams due to notable differences in the characteristics of the underlying analysis. In addition to this, the analysis previously undertaken did not consider the impact to the region of making it more attractive to investors, in particular through the work of the Local Authority Digital Delivery Leads on supplier engagement and demand stimulation. This work has also led to decreased barriers for public sector infrastructure investment, for example through the Shared Rural Network (SRN programme).

It is now expected that the overall programme will increase regional GVA by £347.1m over 15-years (*Figure 2*), compared to £318.8m previously (*Table 11*). In addition, the analysis showed that the Digital Infrastructure Programme has potential to generate over £104.9m in wider socio-economic benefits for the region.



**Figure 2: GVA and Wider Socio-economic Impact of Swansea Bay City Deal Digital Programme**

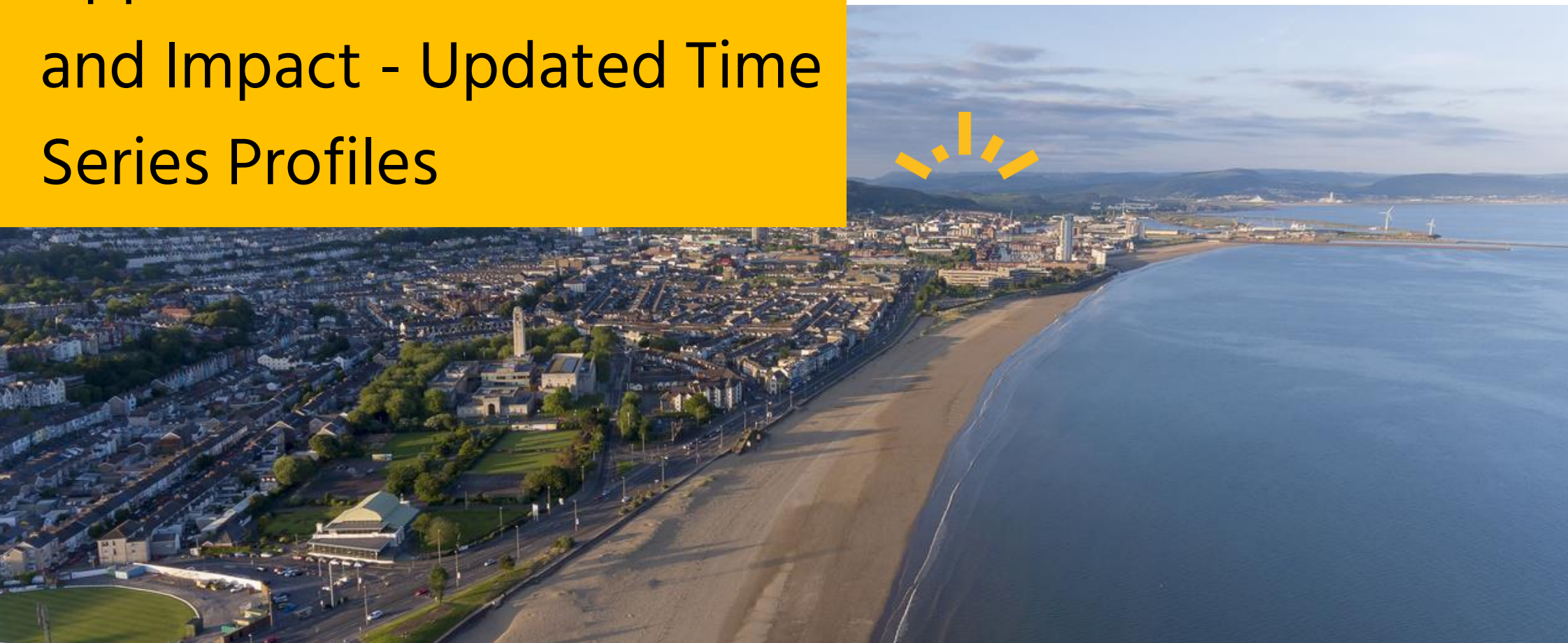
As can be seen, despite the reduction in the impact on GVA from the capital investment projects within each workstream, this is more than offset by the benefits accrued to the region, such as being more attractive to investors and the work on supplier engagement and demand stimulation.

| Workstream                                                                               | Investment                     |                                |                                |                              |                                  |                  | Impact         |                              |
|------------------------------------------------------------------------------------------|--------------------------------|--------------------------------|--------------------------------|------------------------------|----------------------------------|------------------|----------------|------------------------------|
|                                                                                          | Direct SBCD Capital Investment | Direct SBCD Revenue Investment | Other Public Sector Investment | Direct Commercial Investment | Additional Commercial Investment | Total Investment | GVA Impact     | Other Socio-economic Impacts |
| <b>Figures from Original Full Business Case</b>                                          |                                |                                |                                |                              |                                  |                  |                |                              |
| Connected Places                                                                         | £12.0m                         | £0.5m                          | -                              | £7.5m                        | £70.0m                           | £90.0m           | £220.0m        | -                            |
| Rural Connectivity                                                                       | £6.0m                          | £2.0m                          | £13.5m                         | £4.0m                        | £48.9m                           | £74.4m           | £87.5m         | -                            |
| Next Generation Wireless                                                                 | £2.5m                          | £2.0m                          | -                              | £5.0m                        | £3.0m                            | £12.5m           | £11.3m         | -                            |
| <b>Total:</b>                                                                            | <b>£20.5m</b>                  | <b>£4.5m</b>                   | <b>£13.5m</b>                  | <b>£16.5m</b>                | <b>£121.9m</b>                   | <b>£176.9m</b>   | <b>£318.8m</b> | <b>-</b>                     |
| <b>Updated Funding &amp; Workstream Structure</b>                                        |                                |                                |                                |                              |                                  |                  |                |                              |
| Connected Places                                                                         | £8.3m                          | -                              | £1.1m                          | £1.7m                        | -                                | £11.1m           | £122.0         | -                            |
| Rural Connectivity                                                                       | £7.1m                          | -                              | -                              | £1.8m                        | -                                | £8.8m            | £30.9m         | -                            |
| Next Generation Wireless                                                                 | £2.7m                          | -                              | £0.9m                          | £1.2m                        | -                                | £4.8m            | £7.2m          | -                            |
| Supplier Engagement & Demand Stimulation                                                 | -                              | £4.3m                          | £60.0m                         | £17.6m                       | £159.3                           | £241.3m          | -              | -                            |
| <b>Total:</b>                                                                            | <b>£18.1m</b>                  | <b>£4.3m</b>                   | <b>£62.0m</b>                  | <b>£16.5m</b>                | <b>£159.3m</b>                   | <b>£266.0m</b>   | <b>£160.1m</b> | <b>-</b>                     |
| <b>Updated Funding &amp; Workstream Structure and New Economic Appraisal Methodology</b> |                                |                                |                                |                              |                                  |                  |                |                              |
| Connected Places                                                                         | £8.3m                          | -                              | £1.1m                          | £1.7m                        | -                                | £11.1m           | £10.0m         | -                            |
| Rural Connectivity                                                                       | £7.1m                          | -                              | -                              | £1.8m                        | -                                | £8.8m            | £11.2m         | £9.1m                        |
| Next Generation Wireless                                                                 | £2.7m                          | -                              | £0.9m                          | £1.2m                        | -                                | £4.8m            | £8.1m          | -                            |
| Supplier Engagement & Demand Stimulation                                                 | -                              | £4.3m                          | £60.0m                         | £17.6m                       | £159.3                           | £241.3m          | £317.8m        | £54.8m                       |
| <b>Total:</b>                                                                            | <b>£18.1m</b>                  | <b>£4.3m</b>                   | <b>£62.0m</b>                  | <b>£16.5m</b>                | <b>£159.3m</b>                   | <b>£266.0m</b>   | <b>£347.1m</b> | <b>£63.8m</b>                |

Notes: Totals may not sum due to rounding

**Table 11: Comparison of the Expected Investment and Impact Results**

# Appendices: Investment and Impact - Updated Time Series Profiles



## Appendix A: Overall Digital Infrastructure Programme Investment and Impact Updated Time Series Profile

| Digital Infrastructure Programme |                                  | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | 2031/32 | 2032/33 | 2033/34 | 2034/35 | Total   |
|----------------------------------|----------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Investment                       | Direct SBCD Capital Investment   | -       | -       | -       | £0.1m   | £2.8m   | £10.1m  | £5.2m   | -       | -       | -       | -       | -       | -       | -       | -       | £18.1m  |
|                                  | Direct SBCD Revenue Investment   | £0.3m   | £0.2m   | £0.4m   | £0.7m   | £1.0m   | £1.0m   | £0.8m   | -       | -       | -       | -       | -       | -       | -       | -       | £4.3m   |
|                                  | Other Public Sector Investment   | -       | £7.4m   | £3.6m   | £4.3m   | £5.7m   | £21.0m  | £20.0m  | -       | -       | -       | -       | -       | -       | -       | -       | £62.0m  |
|                                  | Direct Commercial Investment     | -       | £1.9m   | £1.1m   | £1.9m   | £2.8m   | 8.3m    | £6.3m   | -       | -       | -       | -       | -       | -       | -       | -       | £22.3m  |
|                                  | Additional Commercial Investment | -       | £21.8m  | £31.4m  | £27.2m  | £27.2m  | £27.2m  | £24.6m  | -       | -       | -       | -       | -       | -       | -       | -       | £159.3m |
|                                  | Total Investment                 | £0.3m   | £31.2m  | £36.5m  | £34.2m  | £39.5m  | £67.5m  | £56.8m  | -       | -       | -       | -       | -       | -       | -       | -       | £266.0m |
| Impact                           | GVA Impact                       | -       | £8.9m   | £15.8m  | £22.3m  | £32.9m  | £35.0m  | £32.9m  | £34.1m  | £31.7m  | £28.8m  | £26.4m  | £23.4m  | £20.6m  | £18.2m  | £16.1m  | £347.1m |
|                                  | Other Socio-economic Impacts     | -       | £16.7m  | £8.5m   | £9.8m   | £10.2m  | £18.5m  | £14.2m  | £5.0m   | £4.8m   | £4.8m   | £4.7m   | £2.3m   | £2.0m   | £1.8m   | £1.6m   | £104.9m |

## Appendix B: Connected Places Investment and Impact Updated Time Series Profile

### Overall Connected Places Profile

| Digital Infrastructure Programme |                                  | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | 2031/32 | 2032/33 | 2033/34 | 2034/35 | Total  |
|----------------------------------|----------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| Investment                       | Direct SBCD Capital Investment   | -       | -       | -       | -       | £1.1m   | £5.6m   | £1.7m   | -       | -       | -       | -       | -       | -       | -       | -       | £8.3m  |
|                                  | Direct SBCD Revenue Investment   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      |
|                                  | Other Public Sector Investment   | -       | -       | -       | -       | £1.1m   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | £1.1m  |
|                                  | Direct Commercial Investment     | -       | -       | -       | -       | £0.2m   | £1.1m   | £0.4m   | -       | -       | -       | -       | -       | -       | -       | -       | £1.7m  |
|                                  | Additional Commercial Investment | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      |
|                                  | Total Investment                 | -       | -       | -       | -       | £2.3m   | £6.7m   | £2.1m   | -       | -       | -       | -       | -       | -       | -       | -       | £11.1m |
| Impact                           | GVA Impact                       | -       | -       | -       | -       | £2.1m   | £6.0m   | £1.9m   | -       | -       | -       | -       | -       | -       | -       | -       | £10.0m |
|                                  | Other Socio-economic Impacts     | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      |

### Dark Fibre East Profile

| Digital Infrastructure Programme |                                  | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | 2031/32 | 2032/33 | 2033/34 | 2034/35 | Total  |
|----------------------------------|----------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| Investment                       | Direct SBCD Capital Investment   | -       | -       | -       | -       | £0.1m   | £1.2m   | -       | -       | -       | -       | -       | -       | -       | -       | -       | £1.4m  |
|                                  | Direct SBCD Revenue Investment   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      |
|                                  | Other Public Sector Investment   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | £1.1m  |
|                                  | Direct Commercial Investment     | -       | -       | -       | -       | £0.04   | £0.3m   | -       | -       | -       | -       | -       | -       | -       | -       | -       | £1.7m  |
|                                  | Additional Commercial Investment | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | £0.0m  |
|                                  | Total Investment                 | -       | -       | -       | -       | £0.2m   | £1.5m   | -       | -       | -       | -       | -       | -       | -       | -       | -       | £11.1m |
| Impact                           | GVA Impact                       | -       | -       | -       | -       | £0.2m   | £1.4m   | -       | -       | -       | -       | -       | -       | -       | -       | -       | £10.0m |
|                                  | Other Socio-economic Impacts     | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      |

### Dark Fibre East Carmarthenshire

| Digital Infrastructure Programme |                                  | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | 2031/32 | 2032/33 | 2033/34 | 2034/35 | Total |
|----------------------------------|----------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-------|
| Investment                       | Direct SBCD Capital Investment   | -       | -       | -       | -       | -       | £3.3m   | £1.7m   | -       | -       | -       | -       | -       | -       | -       | -       | £5.0m |
|                                  | Direct SBCD Revenue Investment   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -     |
|                                  | Other Public Sector Investment   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -     |
|                                  | Direct Commercial Investment     | -       | -       | -       | -       | -       | £0.8m   | £0.4m   | -       | -       | -       | -       | -       | -       | -       | -       | £1.3m |
|                                  | Additional Commercial Investment | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -     |
|                                  | Total Investment                 | -       | -       | -       | -       | -       | £4.2m   | £2.1m   | -       | -       | -       | -       | -       | -       | -       | -       | £6.3m |
| Impact                           | GVA Impact                       | -       | -       | -       | -       | -       | £3.7m   | £1.9m   | -       | -       | -       | -       | -       | -       | -       | -       | £5.6m |
|                                  | Other Socio-economic Impacts     | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -     |

### PSBA

| Digital Infrastructure Programme |                                  | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | 2031/32 | 2032/33 | 2033/34 | 2034/35 | Total |
|----------------------------------|----------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-------|
| Investment                       | Direct SBCD Capital Investment   | -       | -       | -       | -       | £1.0m   | £1.0m   | -       | -       | -       | -       | -       | -       | -       | -       | -       | £2.0m |
|                                  | Direct SBCD Revenue Investment   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -     |
|                                  | Other Public Sector Investment   | -       | -       | -       | -       | £1.1m   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | £1.1m |
|                                  | Direct Commercial Investment     | -       | -       | -       | -       | £0.1m   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | £0.1m |
|                                  | Additional Commercial Investment | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -     |
|                                  | Total Investment                 | -       | -       | -       | -       | £2.1m   | £1.0m   | -       | -       | -       | -       | -       | -       | -       | -       | -       | £3.2m |
| Impact                           | GVA Impact                       | -       | -       | -       | -       | £1.9m   | £0.9m   | -       | -       | -       | -       | -       | -       | -       | -       | -       | £2.8m |
|                                  | Other Socio-economic Impacts     | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -     |

## Appendix C: Rural Connectivity Investment and Impact Updated Time Series Profile

### Overall Rural Connectivity Profile

| Digital Infrastructure Programme |                                  | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | 2031/32 | 2032/33 | 2033/34 | 2034/35 | Total  |
|----------------------------------|----------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| Investment                       | Direct SBCD Capital Investment   | -       | -       | -       | -       | -       | £4.0m   | £3.0m   | -       | -       | -       | -       | -       | -       | -       | -       | £7.1m  |
|                                  | Direct SBCD Revenue Investment   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      |
|                                  | Other Public Sector Investment   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      |
|                                  | Direct Commercial Investment     | -       | -       | -       | -       | -       | £1.0m   | £0.8m   | -       | -       | -       | -       | -       | -       | -       | -       | £1.8m  |
|                                  | Additional Commercial Investment | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      |
|                                  | Total Investment                 | -       | -       | -       | -       | -       | £5.0m   | £3.8m   | -       | -       | -       | -       | -       | -       | -       | -       | £8.8m  |
| Impact                           | GVA Impact                       | -       | -       | -       | -       | -       | -       | £1.0m   | £1.9m   | £1.7m   | £1.5m   | £1.3m   | £1.2m   | £1.0m   | £0.9m   | £0.8m   | £11.2m |
|                                  | Other Socio-economic Impacts     | -       | -       | -       | -       | -       | £3.2m   | £2.8m   | £0.6m   | £0.5m   | £0.5m   | £0.4m   | £0.3m   | £0.3m   | £0.3m   | £0.2m   | £9.1m  |

### Better Broadband Infill Project

| Digital Infrastructure Programme |                                  | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | 2031/32 | 2032/33 | 2033/34 | 2034/35 | Total  |
|----------------------------------|----------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| Investment                       | Direct SBCD Capital Investment   | -       | -       | -       | -       | -       | £4.0m   | £3.0m   | -       | -       | -       | -       | -       | -       | -       | -       | £7.1m  |
|                                  | Direct SBCD Revenue Investment   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      |
|                                  | Other Public Sector Investment   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      |
|                                  | Direct Commercial Investment     | -       | -       | -       | -       | -       | £1.0m   | £0.8m   | -       | -       | -       | -       | -       | -       | -       | -       | £1.8m  |
|                                  | Additional Commercial Investment | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      |
|                                  | Total Investment                 | -       | -       | -       | -       | -       | £5.0m   | £3.8m   | -       | -       | -       | -       | -       | -       | -       | -       | £8.8m  |
| Impact                           | GVA Impact                       | -       | -       | -       | -       | -       | -       | £1.0m   | £1.9m   | £1.7m   | £1.5m   | £1.3m   | £1.2m   | £1.0m   | £0.9m   | £0.8m   | £11.2m |
|                                  | Other Socio-economic Impacts     | -       | -       | -       | -       | -       | £3.2m   | £2.8m   | £0.6m   | £0.5m   | £0.5m   | £0.4m   | £0.3m   | £0.3m   | £0.3m   | £0.2m   | £9.1m  |

## Appendix D: Next Generation Wireless Investment and Impact Updated Time Series Profile

### Overall Next Generation Wireless Profile

| Digital Infrastructure Programme |                                  | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | 2031/32 | 2032/33 | 2033/34 | 2034/35 | Total |
|----------------------------------|----------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-------|
| Investment                       | Direct SBCD Capital Investment   | -       | -       | -       | £0.1m   | £1.6m   | £0.5m   | £0.5m   | -       | -       | -       | -       | -       | -       | -       | -       | £2.7m |
|                                  | Direct SBCD Revenue Investment   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -     |
|                                  | Other Public Sector Investment   | -       | £0.4m   | -       | -       | £0.3m   | £0.1    | £0.1    | -       | -       | -       | -       | -       | -       | -       | -       | £0.9m |
|                                  | Direct Commercial Investment     | -       | £0.1m   | -       | -       | £0.8m   | £0.1    | £0.1    | -       | -       | -       | -       | -       | -       | -       | -       | £1.2m |
|                                  | Additional Commercial Investment | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -     |
|                                  | Total Investment                 | -       | £0.5m   | -       | £0.1m   | £2.8m   | £0.7m   | £0.7m   | -       | -       | -       | -       | -       | -       | -       | -       | £4.8m |
| Impact                           | GVA Impact                       | -       | -       | -       | -       | £5.4m   | £1.4m   | £1.4m   | -       | -       | -       | -       | -       | -       | -       | -       | £8.1m |
|                                  | Other Socio-economic Impacts     | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -     |

### 5G Innovation Fund

| Digital Infrastructure Programme |                                  | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | 2031/32 | 2032/33 | 2033/34 | 2034/35 | Total |
|----------------------------------|----------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-------|
| Investment                       | Direct SBCD Capital Investment   | -       | -       | -       | -       | £1.6m   | £0.5m   | £0.5m   | -       | -       | -       | -       | -       | -       | -       | -       | £2.5m |
|                                  | Direct SBCD Revenue Investment   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -     |
|                                  | Other Public Sector Investment   | -       | -       | -       | -       | £0.3m   | £0.1m   | £0.1m   | -       | -       | -       | -       | -       | -       | -       | -       | £0.5m |
|                                  | Direct Commercial Investment     | -       | -       | -       | -       | £0.8m   | £0.1m   | £0.1m   | -       | -       | -       | -       | -       | -       | -       | -       | £1.1m |
|                                  | Additional Commercial Investment | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -     |
|                                  | Total Investment                 | -       | -       | -       | -       | £2.7m   | £0.7m   | £0.7m   | -       | -       | -       | -       | -       | -       | -       | -       | £4.1m |
| Impact                           | GVA Impact                       | -       | -       | -       | -       | £5.4m   | £1.4m   | £1.4m   | -       | -       | -       | -       | -       | -       | -       | -       | £8.1m |
|                                  | Other Socio-economic Impacts     | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -     |

### 5G Innovation Fund

| Digital Infrastructure Programme |                                  | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | 2031/32 | 2032/33 | 2033/34 | 2034/35 | Total |
|----------------------------------|----------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-------|
| Investment                       | Direct SBCD Capital Investment   | -       | -       | -       | £0.1m   | £0.1m   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | £0.2m |
|                                  | Direct SBCD Revenue Investment   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -     |
|                                  | Other Public Sector Investment   | -       | £0.4m   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | £0.4m |
|                                  | Direct Commercial Investment     | -       | £0.1m   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | £0.2m |
|                                  | Additional Commercial Investment | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -     |
|                                  | Total Investment                 | -       | £0.5m   | -       | £0.1m   | £0.1m   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | £0.8m |
| Impact                           | GVA Impact                       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -     |
|                                  | Other Socio-economic Impacts     | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -     |

## Appendix E: Supplier Engagement & Demand Stimulation Investment and Impact Updated Time Series Profile

### Overall Supplier Engagement & Demand Stimulation Profile

| Digital Infrastructure Programme |                                  | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | 2031/32 | 2032/33 | 2033/34 | 2034/35 | Total   |
|----------------------------------|----------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Investment                       | Direct SBCD Capital Investment   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
|                                  | Direct SBCD Revenue Investment   | £0.3m   | £0.2m   | £0.4m   | £0.7m   | £1.0m   | £1.0m   | £0.8m   | -       | -       | -       | -       | -       | -       | -       | -       | £4.3m   |
|                                  | Other Public Sector Investment   | -       | £7.0m   | £3.6m   | £4.3m   | £4.3m   | £20.9m  | £19.9m  | -       | -       | -       | -       | -       | -       | -       | -       | £60.0m  |
|                                  | Direct Commercial Investment     | -       | £1.7m   | £1.1m   | £1.9m   | £1.9m   | £6.0m   | £5.0m   | -       | -       | -       | -       | -       | -       | -       | -       | £17.6m  |
|                                  | Additional Commercial Investment | -       | £21.8m  | £31.4m  | £27.2m  | £27.2m  | £27.2m  | £24.6m  | -       | -       | -       | -       | -       | -       | -       | -       | £159.3m |
|                                  | Total Investment                 | £0.3m   | £30.7m  | £36.5m  | £34.1m  | £34.4m  | £55.1m  | £50.2m  | -       | -       | -       | -       | -       | -       | -       | -       | £241.3m |
| Impact                           | GVA Impact                       | -       | £8.9m   | £15.8m  | £22.3m  | £25.4m  | £27.6m  | £28.6m  | £32.2m  | £30.0m  | £27.3m  | £25.1m  | £22.2m  | £19.6m  | £17.3m  | £15.3m  | £317.8m |
|                                  | Other Socio-economic Impacts     | -       | £16.7m  | £8.5m   | £9.8m   | £10.2m  | £15.3m  | £11.4m  | £4.4m   | £4.3m   | £4.3m   | £4.3m   | £1.9m   | £1.7m   | £1.5m   | £1.4m   | £54.8m  |

### Overall Supplier Engagement & Demand Stimulation Profile

| Digital Infrastructure Programme |                                  | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | 2031/32 | 2032/33 | 2033/34 | 2034/35 | Total |
|----------------------------------|----------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-------|
| Investment                       | Direct SBCD Capital Investment   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -     |
|                                  | Direct SBCD Revenue Investment   | £0.3m   | £0.2m   | £0.4m   | £0.7m   | £1.0m   | £1.0m   | £0.8m   | -       | -       | -       | -       | -       | -       | -       | -       | £4.3m |
|                                  | Other Public Sector Investment   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -     |
|                                  | Direct Commercial Investment     | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -     |
|                                  | Additional Commercial Investment | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -     |
|                                  | Total Investment                 | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -     |
| Impact                           | GVA Impact                       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -     |
|                                  | Other Socio-economic Impacts     | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -     |

### Wider Fixed Investment

| Digital Infrastructure Programme |                                  | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | 2031/32 | 2032/33 | 2033/34 | 2034/35 | Total   |
|----------------------------------|----------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Investment                       | Direct SBCD Capital Investment   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
|                                  | Direct SBCD Revenue Investment   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
|                                  | Other Public Sector Investment   | -       | £7.0m   | £3.4m   | £3.4m   | £3.4m   | £19.9m  | £19.9m  | -       | -       | -       | -       | -       | -       | -       | -       | £56.9m  |
|                                  | Direct Commercial Investment     | -       | £1.7m   | £0.8m   | £0.8m   | £0.8m   | £5.0m   | £5.0m   | -       | -       | -       | -       | -       | -       | -       | -       | £14.2m  |
|                                  | Additional Commercial Investment | -       | £21.8m  | £30.1m  | £25.9m  | £25.9m  | £25.9m  | £23.3m  | -       | -       | -       | -       | -       | -       | -       | -       | £153.0m |
|                                  | Total Investment                 | -       | £30.5m  | £34.3m  | £30.1m  | £30.1m  | £50.8m  | £48.2m  | -       | -       | -       | -       | -       | -       | -       | -       | £224.1m |
| Impact                           | GVA Impact                       | -       | £8.9m   | £14.3m  | £17.9m  | £21.0m  | £23.2m  | £28.2m  | £31.8m  | £29.6m  | £26.9m  | £24.7m  | £21.8m  | £19.2m  | £16.9m  | £14.9m  | £299.3m |
|                                  | Other Socio-economic Impacts     | -       | £16.7m  | £7.8m   | £7.6m   | £8.0    | £13.1m  | £11.2m  | £4.2m   | £4.1m   | £4.1m   | £4.1m   | £1.7m   | £1.5m   | £1.3m   | £1.2m   | £45.5m  |

### Wider Mobile Investment

| Digital Infrastructure Programme |                                  | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | 2026/27 | 2027/28 | 2028/29 | 2029/30 | 2030/31 | 2031/32 | 2032/33 | 2033/34 | 2034/35 | Total  |
|----------------------------------|----------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| Investment                       | Direct SBCD Capital Investment   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      |
|                                  | Direct SBCD Revenue Investment   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      |
|                                  | Other Public Sector Investment   | -       | -       | £0.2m   | £1.0m   | £1.0m   | £1.0m   | -       | -       | -       | -       | -       | -       | -       | -       | -       | £3.2m  |
|                                  | Direct Commercial Investment     | -       | -       | £0.3m   | £1.0m   | £1.0m   | £1.0m   | -       | -       | -       | -       | -       | -       | -       | -       | -       | £3.4m  |
|                                  | Additional Commercial Investment | -       | -       | £1.4m   | £1.3m   | £1.3m   | £1.3m   | £1.3m   | -       | -       | -       | -       | -       | -       | -       | -       | £6.4m  |
|                                  | Total Investment                 | -       | -       | £1.9m   | £3.3m   | £3.3m   | £3.3m   | £1.3m   | -       | -       | -       | -       | -       | -       | -       | -       | £12.9m |
| Impact                           | GVA Impact                       | -       | -       | £1.5m   | £4.4m   | £4.4m   | £4.4m   | £0.4m   | £0.4m   | £0.4m   | £0.4m   | £0.4m   | £0.4m   | £0.4m   | £0.4m   | £0.4m   | £18.5m |
|                                  | Other Socio-economic Impacts     | -       | -       | £0.7m   | £2.2m   | £2.2m   | £2.2m   | £0.2m   | £0.2m   | £0.2m   | £0.2m   | £0.2m   | £0.2m   | £0.2m   | £0.2m   | £0.2m   | £9.3m  |

# Version Control

Owner **Matthew Izatt-Lowry**  
Classification **Client Confidential**

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 **Edinburgh**  
Exchange Place 2  
5 Semple Street  
Edinburgh  
EH3 8BL

T: 0131 202 6018

 **London**  
1st Floor  
99 Bishopsgate  
London  
EC2M 3XD

T: 020 3693 7310

 **Manchester**  
3 Hardman Square  
Spinningfields  
Manchester  
M3 3EB

T: 0161 669 5821

 **Nova Scotia, CA**  
1300-1969  
Upper Water Street,  
Halifax, Canada  
NS B3J 3R7

T: +44 (0)131 202 6018

 **Boston, US**  
100 Cambridge St  
Boston  
MA 02114

T: +44 (0)131 202 6018