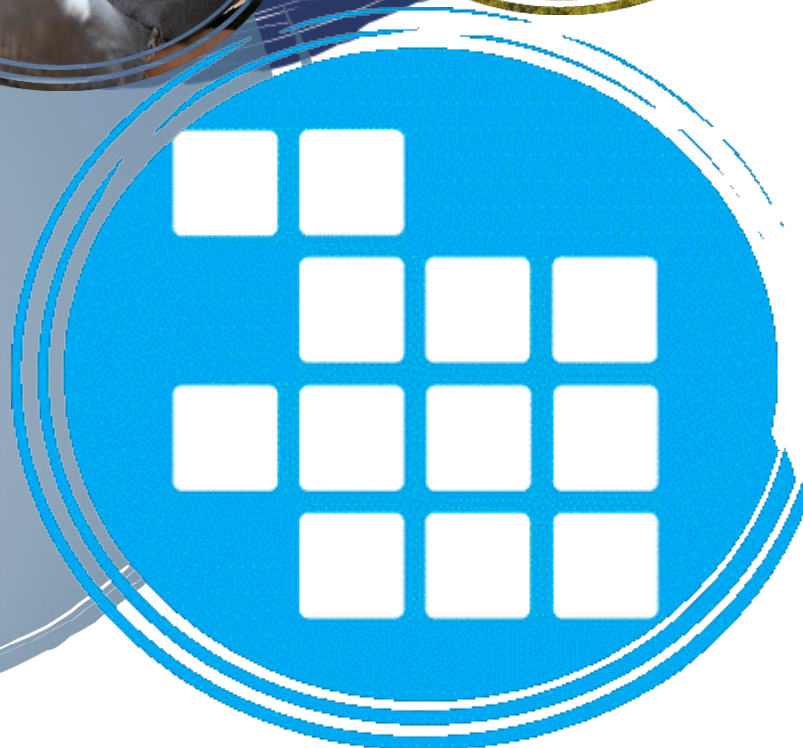
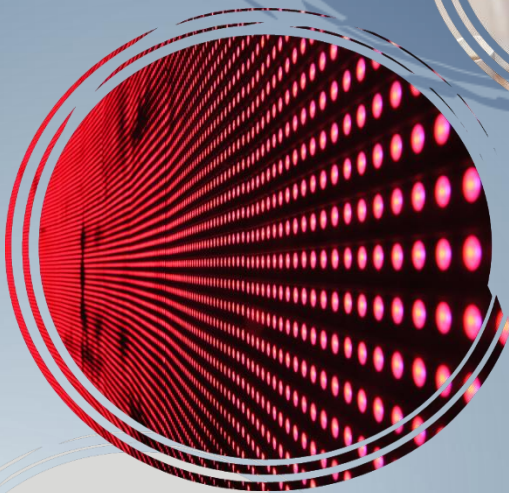


# Executive Overview Digital Programme



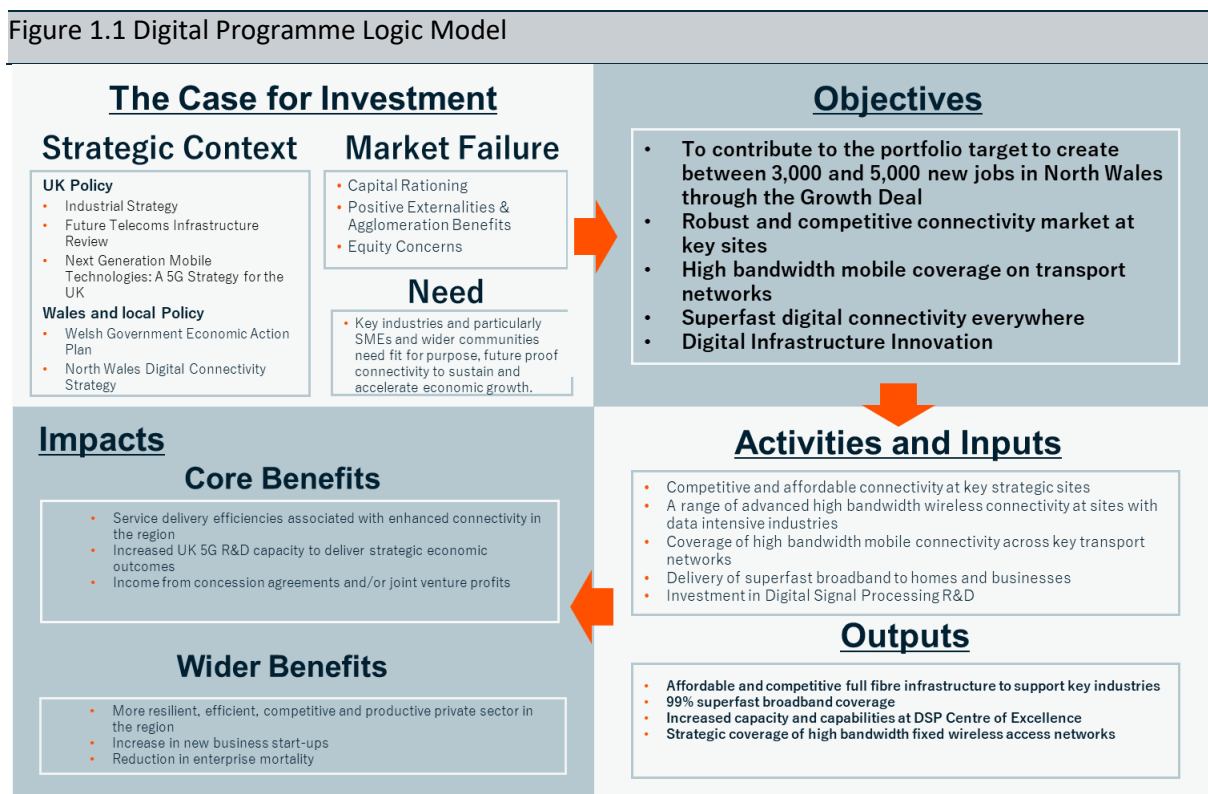
**HATCH**

# Executive Overview

- i. The purpose of this programme business case is to demonstrate the optimal choice of projects for the delivery of the Digital Programme. The business case follows the structure of the Five Case Model and HM Treasury Green Book principles. It is structured into five cases – strategic, economic, commercial, financial and management.
- ii. North Wales Growth Deal which is seeking to deliver a total investment of up to £1.1bn in the North Wales economy (£240m from the Growth Deal), to create 3,400 – 4,200 net additional jobs and generate £2.0- £2.4 billion in net additional GVA.
- iii. The purpose of the Digital Programme is to address spending objectives associated with improving connectivity at strategic locations and industries to enable economic growth in the immediate and long term and to support research into the advanced connectivity technologies of the future.
- iv. The business case is intended to inform the Final Deal Agreement, which follows the Heads of Terms agreement with the Welsh and UK Governments in 2019.

## The Strategic Case

A summary of the logic model for the Programme is set out below



## Strategic Context

- v. The NWEAB was established in 2012 and covers the six Local Authority administrative areas of the region of North Wales and University of Bangor, Glyndwr University, Coleg Cambria. The private sector has also shaped the deal through the North Wales Mersey Dee Business Council and the Business Delivery Group.

vi. The aim of the Growth Deal is to build a more vibrant, sustainable and resilient economy in North Wales. Building on our strengths to boost productivity and tackling long term challenges and economic barriers to deliver inclusive growth. Our approach is to promote growth in a scalable, inclusive and sustainable way in line with the Future Generations Act.

vii. The Growth Deal builds on the Growth Vision for North Wales, adopted in 2016:

*“a confident, cohesive region with sustainable economic growth, capitalising on the success of high value economic sectors and our connection to the economies of the Northern Powerhouse & Ireland.”*

viii. The Growth Deal aligns closely with the priorities of the UK and Welsh Governments in relation to economic development. There is particularly strong alignment with the UK Government’s **Industrial Strategy**, the Welsh Government’s **Economic Action Plan**, the **Well-being of Future Generations Act**, and its cross-cutting themes.

ix. The Digital Programme further aligns with specific policies of UK and Welsh Governments including;

- Future Telecoms Infrastructure Review (2019, UK Government)
- Delivering a Digital Wales (2010, Welsh Government)
- Next Generation Mobile Technologies: A 5G Strategy for the UK (2017, UK Government)

x. The NWEAB has developed a strategy for North Wales, accounting for the industries and locations of greatest importance to the economy of the region, the North Wales Digital Connectivity Strategy (Appendix A).

## The Case for Change

### Spending Objectives

xi. The Digital Programme Spending Objectives are focussed on delivering infrastructure to support and enable economic growth:

<b>Spending Objective 1</b> Job Creation	To create between 315-380 new jobs in North Wales through the programme by 2036
<b>Spending Objective 2</b> GVA	To create net additional GVA of £130m - £158m through the programme by 2036
<b>Spending Objective 3</b> Investment	To deliver a total investment of between £37m and 46m through the programme by 2036
<b>Spending Objective 4</b> Robust and competitive connectivity market at key sites	To introduce robust and competitive connectivity market at 28 strategic key sites in step with or in advance of UK Government 2025 target for gigabit capability coverage.
<b>Spending Objective 5</b> High bandwidth mobile coverage on transport networks	To introduce high bandwidth mobile coverage on transport networks with deployment in step with or in advance of UK Government 2027 target for 5G coverage. Delivery of coverage across A55, A483 and A5.
<b>Spending Objective 6</b> Superfast digital connectivity everywhere	To ensure all inhabited premises in the region have Superfast broadband connectivity in the short term (by 2023) with gigabit upgrade capability built in as far as possible.

<b>Spending Objective 7</b> Digital infrastructure innovation	To ensure that the region is empowered to participate in innovation and commercialisation of new digital infrastructure technology to achieve and consolidate a long term role in a strategically important industry
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## Existing Arrangements

- xii. The Digital Programme Spending Objectives consist principally of delivering improved coverage of high quality and affordable digital connectivity to premises in North Wales, at comparable or faster rates than the rest of the UK. Figures at the UK Parliamentary Constituency scale clearly show the prevalence of underperformance in the main broadband speed categories. Importantly, the trend in the improvement of coverage has been consistently behind that of the UK as a whole with few exceptions in the last 10 years with no indication that this trend will improve in the foreseeable future.
- xiii. The telecoms regulator Ofcom identifies a need for investment in the UK’s telecoms infrastructure to meet growing and future demand for ultrafast broadband. Ofcom states that future broadband networks should provide choice, value and quality and its approach to achieving that has been through encouraging competition between different networks. Most of North Wales has been assessed by Ofcom as non-competitive and as such the rates of deployment of the fastest broadband have been lower than where more than one network is investing to reach new customers.
- xiv. Beyond fibre or ‘fixed’ broadband, the emergence of mobile data as key enabler of economic growth presents North Wales with further challenges. While 4G coverage has increased significantly in recent years this has been slow to happen and now 5G is following a similar path, with cities and towns around the UK already attracting significant network investment. There is almost no 5G network coverage in the region (as of July 2020). The exception is a very small scale, single deployment by Vodafone near the centre of Llandudno, limited coverage by EE in and single small deployment at Kinmel Bay, both of which are expected to be commercial trial type investments.
- xv. In developing the technology of the future the scope and volume of research outputs currently possible at the Digital SP Centre is limited by scale and equipment. The wider Optical Communications Research Group in Bangor University has produced world-leading research in optical communications and DSP. Its members have published 450 papers in international leading journals and presented in numerous major international optical communications conferences. It has filed 8 patents and captured research grants totalling £6m and undertaken collaborative R&D projects with Fujitsu and BT.

## Business Needs

- xvi. **Robust and competitive connectivity market at key sites:** Investment to bring a full range of quality digital network connectivity to key commercial sites across the region is necessary to bridge the gap, which is in places widening annually. The need for this additional investment is strong in all parts of North Wales as even where rates of coverage appear to be strong, the rate at which these have been achieved does not appear to be sustainable and risks slowing considerably while other areas of the UK experience accelerating deployment. This principle

applied to all of the current relevant digital telecommunications technologies, including most recently the latest mobile data standard 5G.

- xvii. **High bandwidth mobile coverage on transport networks:** The need to service the A55 corridor and assets along it with seamless mobile connectivity, including the deployment of advanced 5G technologies, to unlock efficiencies and economic impacts along this key strategic corridor. This coverage will extend to service rail and road traffic and open up opportunities for wider mobile deployment, improving speeds but also the quality of mobile data access.
- xviii. **Superfast digital connectivity everywhere:** Ensuring superfast broadband connectivity to all homes and businesses is achieved, with a clear pathway to delivering Gigabit connectivity as a consequence of changes to government policy.
- xix. **Digital infrastructure innovation:** Demand from end users at key sites and across North Wales' base of entrepreneurs is considerable and engagement with this audience highlights an appetite to invest more in related research and innovation.

## Potential Scope

- xx. As one of the two '**Enabling sectors**' targeted within the Growth Deal, the strategic aim of the Programme is to **deliver affordable high quality connectivity to key sites, industries and communities and to establish a world class centre of excellence in developing the telecoms technology of the future.**
- xxi. The Programme consists of four projects: Full fibre at key sites, Connected Campuses, Connected Corridor, Connecting the Last Few % and Digital Signal Processing Centre.

## Benefits

- xxii. The programme will lead to a number of direct and indirect benefits that will not only span key growth sectors but the wider economy of North Wales. Some of the main benefits associated with meeting the Programme's Spending Objectives are set out below:
  - **Direct and indirect job creation:** particularly the digital sector and Big Data sectors.
  - **Public service delivery efficiencies:** associated with enhanced connectivity in the region, e.g. blue light service communications, fleet operations, teleworking, remote monitoring of assets etc.
  - **Private sector business productivity increases:** associated with greater adoption of technologies requiring greater bandwidth

## Risks

- xxiii. There are a number of key risks to the successful delivery of the Growth Deal Portfolio including resources; delivery; cost; COVID-19; Brexit; Private and public sector investment; and political change. However, there are also specific risks such as Government policy shifts, consenting requirements, grid connectivity challenges and supply chain capacity that are applicable to the programme. The approach to managing these risks is considered in the Management Case.

## Constraints and Dependencies

- xxiv. Notable constraints on the delivery of the Growth Deal include the total funding package of £240m, the 15-year term of the Growth Deal, the requirement for solely capital funding and State Aid considerations. The Growth Deal is dependent on securing the final deal, and on the engagement and collaboration with the private and public sectors. Projects within the Programme may also be dependent upon supportive government policy that establishes support mechanisms and routes to market for emerging digital technologies and commercial models.

## The Economic Case

### Critical Success Factors and Options Assessment

xxv.

Project	Summary Description	Outputs & Benefits	Cost/ Ask
Full Fibre at key sites	This project seeks to deliver full fibre connectivity (gigabit capable) to 28 key business sites across region. The focus of the project is to provide access to full fibre services that are more affordable, scalable and able to service the needs of SMEs, in lieu of and complementing more expensive leased line circuits. Ultimately, the project will support greater market interest and competitiveness, leading to greater consumer choice and affordability.	4,100 business premises and 450 residential premises able to access gigabit capable full fibre broadband	Growth Deal Ask £6.8m Total cost £7.2m
Connected Campuses	The project will target key sites which present uses cases for 5G and low power wide area wireless networks in the context of heavy industry, light industry, research sites, commercial sites and across a much larger rural campus (encompassing thousands of farms and agricultural clusters).	2,600 business premises with access to high bandwidth 5G and low power Wi-Fi services from private operators.	Growth Deal Ask £21m Total cost £21m
Connected Corridor	This project aims seeks to respond to industry demand and technology drivers by supporting the more efficient operation of supply chains, and major transport operations (such as ports). In a North Wales context, this requires the real-time tracking of goods, vehicles, and people over extended distances. The requirement runs along the	1.57 million rail journeys and 1.3 million road journeys benefitting from enhanced 5G connectivity, with wider use cases to follow at specific sites and within certain sectors.	Growth Deal Ask £2.2m Total cost £2.2m

Project	Summary Description	Outputs & Benefits	Cost/ Ask
	A55 corridor and adjacent mainline rail route, which intersect with key economic centres, clusters, transport nodes, such as Holyhead Port. Personal and commercial mobile connectivity will be significantly enhanced by bringing forward strategic deployment of 5G network coverage.		
Connecting the Last Few %	This project targets universal superfast coverage across North Wales premises, which have yet to be served by other means and cannot obtain speeds of at least 30Mbps download.	Estimates 10,000 residential with access to superfast broadband achieving speeds of at least 30Mbps	Growth Deal Ask £4.0m Total project cost £4.0m
Digital Signal Processing Centre of Excellence (DSP Centre)	The project will bring together Bangor University researchers to work alongside high-profile international companies and Welsh SMEs enabling them to work together to explore disruptive solutions for 5G. Investment is sought to expand capacity of existing facilities to accelerate the transfer of innovation into viable market solutions, whilst boosting the wider North Wales ecosystem	15 direct FTEs created within the DSP Centre and 145 indirect FTEs created through business support and outreach	Growth Deal Ask £3m Total project cost £7.3m

- xxvi. To demonstrate the strategic rationale for the Preferred Option, it was assessed against alternative options: 'Business as Usual, do minimum, do maximum and intermediate options. Each option was assessed on how well it delivered against the programme spending objectives and five 'Critical Success Factors' (Strategic Fit, Value for Money, Commercial Sustainability, Deliverability and Partnership Support and Commitment). The Preferred Option is the only option which is effective across all Objectives and Critical Success Factors.
- xxvii. Each of the constituent projects within the Digital Programme will develop a project-level options assessment within the project business case

## Economic Appraisal

- xxviii. The Digital Programme is expected to deliver around **345 net additional FTE jobs** for North Wales, with a **NPSV of £130-158m**. Based on all public sector funding for the Growth Deal, it will deliver a **benefit-cost ratio (BCR) of 2.9-3.6 (or 3.2-3.9 based on Growth Deal investment only)**.<sup>1</sup>

<sup>1</sup> Note this includes an assessment of optimism bias in capital costs.

xxix. In interpreting these figures it is important to note that there are a range of benefits that cannot be quantified or monetised in a robust fashion, but are still a significant consideration in the value for money case for the programmes. These include:

- Attracting inward investment into high value sectors
- Key sector development and competitiveness
- Enhanced research and innovation capacity
- Retention of young people
- Rural sustainability.

xxx. There are a number of risks to generating the scale of economic benefits estimated, and the value for money assessment has been subjected to sensitivity testing at the programme level. The BCRs remain robust in the face of these tests. A summary of the key findings from the economic appraisal of the Growth Deal is provided in Table 1.1.

Table 1.1 Appraisal Summary Table

Appraisal Summary Table	
Net Present Social Value (£m) (including Optimism Bias)	£90-£110 (£93-£114 based on GD costs)
Public sector cost (£m, (undiscounted, excluding optimism bias))	£40 (£37 from Growth Deal)
Appropriate Benefits Cost Ratio	2.9 – 3.6 (3.2 – 3.9 Growth Deal investment)
Significant unmonetizable costs/benefits and unquantifiable factors	<ul style="list-style-type: none"> <li>• Choice/affordability</li> <li>• Private/Inward investment</li> <li>• Technology commercialisation</li> <li>• Social/wellbeing benefits</li> <li>• Rural sustainability</li> </ul>
Risk costs by type and residual optimism bias	24% optimism bias applied <sup>2</sup>
Switching values (for the preferred option only)	75% reduction in take-up of fixed/ mobile broadband business start-up benefits & benefits generated through the DSP.
Time horizon and reason	15 year appraisal period. All infrastructure assets will have a residual value at this point

<sup>2</sup> Upper bound of standard buildings from HM Treasury guidance)



# The Commercial Case

## Commercial Strategy

- xxxi. The NWEAB is committed to maximising the economic impact and value for money of the North Wales Growth Deal. The Board also recognises the potential to generate a commercial return on investment that could be reinvested in the region. Each project business case will be expected to explore commercial investment opportunities.
- xxxii. The four infrastructure projects within the Digital Programme present opportunities for significant commercial investment for either the public sector, the private sector or indeed both. Recent innovations such as The Digital Infrastructure Cooperative (TDIC) ‘Thin Layer Model’ pioneered by Tameside Metropolitan Borough Council and sponsored by UK Government Department for Digital, Culture, Media and Sport is one such model which the Programme Board is considering and further options are well described in DCMS’ 2011 Broadband delivery Programme Delivery Model.
- xxxiii. Projects also have clear potential for well established concession type contracts such as that between Welsh Government and FibreSpeed Ltd, or the state aid gap funding model which has been used extensively in delivering UK Government’s ‘Superfast’ programme across the UK, with BT being the principal industry beneficiary in Wales.

## Procurement Strategy

- xxxiv. Our procurement strategy responds to Welsh policy and procedures. All Growth Deal procurement activity will be underpinned by a guiding set of principles, which are summarised below.
- xxxv. For the four projects within the Digital Programme which will be delivered by the NWEAB, the PMO will lead on all procurement activity in line with the agreed Procurement Strategy. Where appropriate and beneficial to do so, existing frameworks such as the North Wales Construction Framework or the Crown Commercial Services and DCMS Dynamic Purchasing System procurement frameworks will be utilised.

Procurement policy and principles	
Policy drivers	<ul style="list-style-type: none"> <li>• North Wales Growth Vision</li> <li>• Wellbeing of Future Generations Act</li> <li>• Public Contract Regulations 2015</li> <li>• Welsh Public Procurement Policy Statement</li> <li>• Welsh Government Code of Practice Ethical Employment in supply chains</li> <li>• Government Commercial Operating Standards</li> </ul>
Procurement Principles	<ul style="list-style-type: none"> <li>• Regional leadership</li> <li>• Developing the regional economy by including local and regional economic considerations in contract opportunities, and improving access to SMEs</li> <li>• Promoting the use of local suppliers and local supply chains where possible</li> <li>• Maximising skills and employability opportunities through contract opportunities</li> <li>• Supporting community development through community wealth building and inclusion of cultural and Welsh language considerations in contracts</li> <li>• Supporting environmental sustainability by including environmental considerations in contract opportunities and minimising carbon footprint of projects where possible</li> </ul>

- Ensuring effective spending and value for money via regional collaboration; effective performance, risk, contract and fraud management arrangements

## The Financial Case

### Capital & Revenue Requirements

- xxxvi. The Digital Programme is based on the delivery of five projects with a total capital expenditure of £4.7m, of which £37m million is derived from the Growth Deal with the remainder provided by public and private sector partners.

Table 1.2 The capital expenditure requirements are based on the latest available project business cases and aggregated up to provide the programme estimates. Breakdown of Expenditure:

Project	Lead Partner	Growth Deal (£m)	Other Public (£m)	Private (£m)	Total (£m)
Full Fibre at Key Sites	NWEAB	6.8	-	0.4	<b>7.2</b>
Connected Campuses	NWEAB	21	-	-	<b>21</b>
Connected Corridor	NWEAB	2.2	-	-	<b>2.2</b>
Last Few %	NWEAB	4	-	-	<b>4</b>
DSP Centre*	Bangor University	3	3.2*	1.1	<b>7.3</b>
<b>Programme Total</b>		<b>37</b>	<b>3.2</b>	<b>1.5</b>	<b>41.7</b>

\* Does not include £3.9m previously secured ERDF funding associated with DSP Centre

### Project Maturity

- xxxvii. The five projects within the programme are currently at different levels of maturity as shown by the table below:

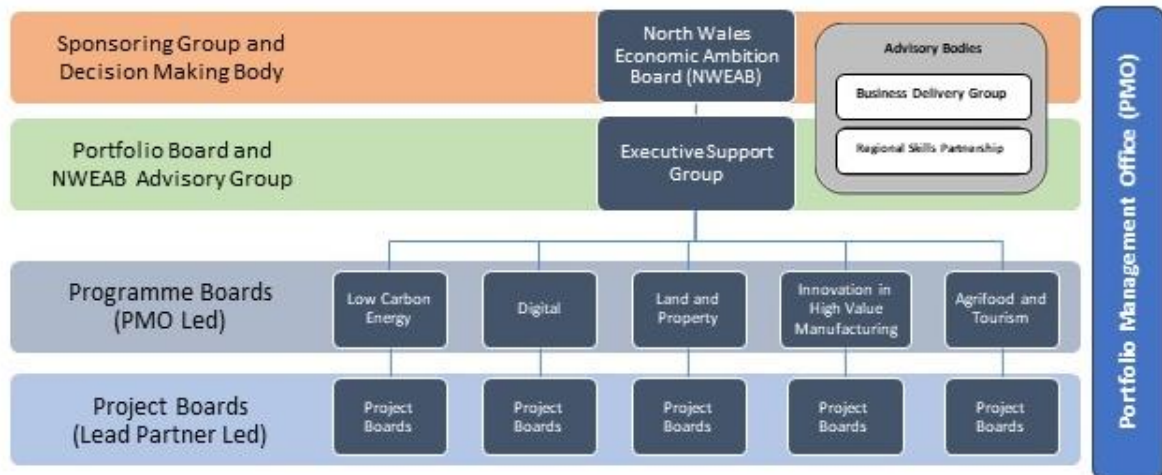
Project	Business Case Stage*	Notes
Full Fibre (Key Sites)	SOC	Project is ready to progress to the development of an OBC.
Connected Campuses	SOC	Project is ready to progress to the development of an OBC.
Connected Corridor	SOC	Project is ready to progress to the development of an OBC.
Connecting the Last Few %	SOC	Project is ready to progress to the development of an OBC.
DSP Centre	OBC	Project is currently developing an OBC for presentation to NWEAB for approval.

\* Project business cases are developed in three stages – Strategic Outline Case (SOC), Outline Business Case (OBC), Full Business Case (FBC).

## The Management Case

### North Wales Growth Deal Delivery Structure

xxxviii. The diagram below sets the delivery structure for the Growth Deal building on the existing structures put in place by the EAB’s Governance Agreement. Details on these roles are set out in the management case.



**Programme Boards** - Each programme will have a formal Programme Board and an appointed Senior Responsible Owner (SRO). These boards will be focused on the development (initially) and delivery of the agreed Programme Business Case, with a specific focus on the benefits and outcomes to be achieved. Programme Boards escalate to the Portfolio Board via the Programme Director. The Digital Programme SRO is Steve Bayley, Chief Officer Housing and Economy at Wrexham County Borough Council.

**Portfolio Management Office (PMO)** – The PMO supports and co-ordinates activity across the programmes acting as an information hub and ensuring a consistent approach to reporting, control of risk/issues and programme assurance. Each programme is assigned a Programme Manager from within the PMO. The Programme Manager for the Digital Programme is Stuart Whitfield.

### Project Business Cases

xxxix. The North Wales Growth Deal is to be signed on the basis of a portfolio business case and five programme business cases. Once the final deal has been agreed, full 5 Case Model project business cases can be brought forward for the NWEAB to consider.

### Risk Management

xl. The NWEAB has an adopted Risk Framework for the delivery of the North Wales Growth Deal. The approach to risk management is outlined in the Growth Deal Risk and Issues Management Strategy and User Guide. The key principles and concepts outlined in this strategy are drawn from OGC Management of Risk literature.

## Timeline and Milestones

- xli. The NWEAB is seeking approval of the North Wales Growth Deal in December 2020 with the signing of the Final Deal. Following Final Deal, project business cases will be brought forward for the NWEAB to consider from January 2021 onwards.

## Monitoring, Evaluation and Feedback

- xlii. Programme and project performance will be monitored on a monthly basis through the relevant programme and project boards with formal quarterly reports submitted to the Portfolio Board and the North Wales Economic Ambition Board. A Monitoring and Evaluation Plan has been developed for the North Wales Growth Deal and will be agreed with UK and Welsh Government as part of the Final Deal.

## Assurance

- xliii. The PMO worked with the Welsh Government Assurance Hub to develop an Integrated Assurance and Approval Plan (IAAP) that sets out the assurance activities that will be undertaken at portfolio, programme and project level for the North Wales Growth Deal.
- xliv. As part of the IAAP, assurance activities will take place across all levels of the Growth Deal – portfolio, programme and project. The North Wales Growth Deal will utilise the pre-defined Gateway 0-5 and flexible Project Assessment Reviews (PAR) as appropriate and proportionate. The IAAP will be agreed with UK and Welsh Government as part of the Final Deal.