Cynllun Twf Gogledd Cymru
North Wales Growth Deal

Executive Summary

Outline Business Case – Advanced Wireless

Connected Campuses Project

Ambition North Wales

11th September 2024

V1.2

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1.2	North Wales Economic Ambition Board	

Contents

Glossary

TERM	DEFINITION
5G IR	5G Innovation Regions
ANW	Ambition North Wales
AR	Augmented Reality
BAU	Business as Usual
BCR	Benefits Cost Ratio
BDUK	Building Digital UK
CC	Connected Campuses
CCR	Cardiff Capital Region
CKSC	Connected Key Sites and Corridors
CSF	Critical Success Factors
DCMS	Department for Digital, Culture, Media and Sport
DSIT	Department for Science, Innovation and Technology
EAS	Extended Area Service
ESN	Emergency Services Network
FTIR	Future Telecoms Infrastructure Review
GDP	Gross Domestic Product
GMW	Growing Mid Wales
GVA	Gross Value Added
IAAS	Infrastructure as a Service
JOTS	Joint Operators Technical Specification
LPWAN	Lower Power Wide Area Network
MMWAVE	Millimetre Wave - these 5G Frequency Range 2 networks can deliver multi-gigabit data rates and very low latency
MNOS	Mobile Network Operators (EE, Three, O2, Vodafone)
MPNS	Mobile Private Networks
NWEAB	North Wales Economic Ambition Board
NWGD	North Wales Growth Deal
OBC	Outline Business Case
OFCOM	Telecoms Regulator
OP	Option
OPEN RAN	Open Radio Access Networks – concept for more open radio access to mobile network architecture
PMO	Project Management Office
RD & I	Research, Development & Innovation
SBCD	Swansea Bay City Deal
SO	Spending Objectives
SOC	Strategic Outline Case
SRN	Shared Rural Network
SRO	Senior Responsible Owner
SUB-6GHZ	Mobile network spectrum
UKG	UK Government
VHF	Very High Frequency
VR	Virtual Reality
WTP	Willing to Pay

Executive Summary

Purpose of this Document

The Advanced Wireless Business Case is part of the Connected Campuses Project of the Ambition North Wales Digital Programme. The Outline Business Case makes the case for Growth Deal investment to support the adoption of advanced wireless technologies across the region by both private and public sector organisations.

The business case identifies the Preferred Option as a £19m fund to operate as a flexible grant scheme to fund adoption of advanced wireless solutions. The scheme will be administered by Ambition North Wales over a three-year period following initial scheme design with project management provided by the sponsor, Ambition North Wales. The first phase of the project will involve the grant scheme design and set up followed by the delivery of capital funding to private and public sector organisations which will apply for funding in accordance with the scheme's conditions and eligibility criteria.

The purpose of this Outline Business Case is:

- To set out the objectives for the Project
- To consider the Case for Change and identify the problem(s) to be addressed
- To identify a Longlist and Shortlist of Options to address the problem and select the Preferred Way Forward and the Preferred Option
- To detail the commercial, financial and management cases to support the Preferred Option

Advanced Wireless technology

When referring to 'Advanced Wireless' technology, the scope of the project is aligned to the UK Wireless Infrastructure Strategy (2023):

"*In terms of scope, we take into account the full range of wireless technologies for communications services. Given the continued importance of cellular mobile networks, we naturally have a significant focus on* ***4G and 5G*** *but also recognise the role of other wireless technologies such as* ***Wi-Fi****, as well as the use of* ***satellite communications*** *services,* ***private networks and low power wide area networks****. This strategy recognises the significant and continuing evolution of wireless technologies and the telecoms market more broadly. … we recognise the continuing importance of technologies such as Wi-Fi for indoor coverage and networks aimed primarily at IoT technologies*

Previous Work

In the original 2020 Programme Business Case the Connected Campuses project set out to support delivery of advanced wireless networks at 18 key economic sites by 2030 with cutting edge connectivity options to increase competitiveness, resilience, and efficiency through digital transformation. It also included the scope of delivery of Low Power Wide Area networks (LPWAN) to support adoption of Internet of Things applications across the region. In November 2022, Spirit Public Sector Ltd (Spirit) was appointed to provide business case support to conduct a Scoping Study, to develop the existing draft Strategic Outline Cases further, and to develop the Outline and Full Business Cases. Following this review,

which included the wider scope of the parallel Connected Key Sites and Corridors project, Spirit produced an Advanced Wireless Scoping Document which set out the draft Spending Objectives and the scope for the project, which at the time focused on 5G mm Wave. The LPWAN investment, which remains within the Connected Campuses project has since been taken forward as a distinct Business Justification Case.

During the development of the SOC and this OBC, the Spending Objectives evolved to address a broader scope of advanced wireless technologies because business requirements may be met with other 5G frequencies and different technologies. The Strategic and Economic Cases describe the rationale behind this evolution. The Strategic Objectives for all projects, including Advanced Wireless were identified and agreed during workshops held with the Project Board during the discovery phase of SOC development.

1. Strategic Case

1.1 Strategic Context

The North Wales Economic Ambition Board (NWEAB) is a joint committee of the six local authority leaders and chief executives and advisers from the two universities, two further education colleges and the private sector. The Board's vision for North Wales is to become: '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 and Ireland.'

The North Wales Growth Deal is the agreement between the UK Government and Welsh Government and the North Wales Economic Ambition Board (NWEAB). The agreement confers £240m of funding to the NWEAB to achieve this vision:

- To build a more vibrant, sustainable, and resilient economy in North Wales.
- To build on our strengths, to boost productivity while tackling long-term challenges and economic barriers to deliver inclusive growth.
- To promote growth in a scalable, inclusive, and sustainable way, in line with the Well-being of Future Generations (Wales) Act 2015.

Ambition North Wales manages a Portfolio of five enabling programmes established to deploy Growth Deal funds. Each Programme operates on behalf of the Board to identify, scope, and deliver the initiatives that will support achievement of the vision.

1.1.1 Ambition North Wales Digital Connectivity Programme

The Digital Connectivity Programme aims to "deliver improved coverage of high quality and affordable digital connectivity to premises in North Wales to support the achievement of the Growth Deal aims at comparable or faster rates than the rest of the UK[1]". The Programme is comprised of four projects (1) Connected Key Sites and Corridors (2) Connected Campuses (3) Last Few % and (4) Digital Signal Processing Centre (Bangor University)

[1] Ambition North Wales Digital Programme Business case

- Connected Key Sites and Corridors is concerned with the deployment of 4G+ and fibreoptic network infrastructure. Connected Campuses is concerned with the deployment of LPWAN and Advanced Wireless solutions.

- **Advanced wireless is a focus of intervention for the Digital Programme because the connectivity supports users with high bandwidth, low latency requirements. Such requirements drive the uptake of advanced and emerging technologies that are designed to transform the way in which modern industry and commerce, and in some cases domestic users, operate.**

1.2 National and Local Government Alignment

The Advanced Wireless project supports national and regional economic strategies, and the objectives of the Ambition North Wales Portfolio and Digital Programme by creating an opportunity for businesses, organisations and communities to establish future proof advanced wireless networks across areas of North Wales, and key locations to drive increased GVA, jobs creation and inward investment

Welsh Government strategic documents

The National Strategy (Taking Wales Forward 2016-2021), Wellbeing of Future Generations (Wales) Act 2015, Future Wales the National Plan 2040 and others all describe either the importance of better of digital connectivity or describe outcomes that are enabled by better digital connectivity.

- Innovation Strategy for Wales (Feb 2023)
- Digital Strategy for Wales (Welsh Government, 2021)

The Digital and data strategy for health and social care in Wales (Welsh Government, 2023[2]) also describes the importance of a solid and stable digital infrastructure, including connectivity, that can operate as a single integrated system to support health and social care in Wales.

UK Government strategic documents

Levelling Up White Paper (2022) Highlights and commits to end the "the geographical inequality which is such a striking feature of the UK". It recognises that digital infrastructure is a core requirement for levelling up, and like other strategies re-asserts the UKG ambition for *"nationwide gigabit-capable broadband and 4G coverage by 2030, with 5G coverage for the majority of the population".*[3] *(p6)*

- UK Digital Strategy (DCMS, 2022)
- Future Telecoms Infrastructure Review (FTIR) (UK Government, 2018)
- National Infrastructure Strategy (UK Government, 2020)

UK Wireless Infrastructure Strategy (2023) Describes the ambition for delivery of 4G coverage to 95% of the UK landmass by 2025 and nationwide 5G SA network coverage to populated areas by 2030. It details the role of Fixed Wireless Access, Satellite, wifi and other technologies. It addresses the benefits and challenges of advanced wireless connectivity and describes what government will do to overcome the

[2] https://www.gov.wales/digital-and-data-strategy-health-and-social-care-wales-html#127708

[3] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1095544/Executive_Summary.pdf

challenges and drive the benefits. [4] **The Wireless Infrastructure Strategy indicates that smart utilities and smart manufacturing are expected to add £9.4 billion and £6.1 billion respectively to UK GDP by 2030.** *"Advanced wireless technologies will be key to driving the government's ambitions to harness digital transformation to build a more inclusive, competitive and innovative digital economy. 5G in particular, has the potential to unlock significant economic and social benefits for all of the UK".*

5G Innovation Regions (Department for Science Industry and Technology, 2023) is a Programme to create ten 5G Innovation regions that drive economic growth by increasing advanced wireless adoption, accelerating investment by aggregating demand for 5G and fostering the 5G ecosystem. The programme provides funding to address the same challenges as the Ambition North Wales Advanced Wireless project targets.[5] 37 projects are exploring many different aspects and challenges with 5G delivery and deployment in different sectors. It also supported the creation of a national innovation network, "UK5G", to build, connect, and inform the UK 5G ecosystem. The interim evaluation of the programme[6] concludes that a Benefit to Cost Ratio (BCR) of 15.8:1 was achieved at the time of the report with the final evaluation due to be produced in 2025.

Other Strategies

Other strategies describe the direction of travel for the delivery of mobile connectivity or technical/commercial features of the market, rather than current requirements. They include the "**UK 5G Supply Chain Diversification Strategy (2020, UK Government)",** the **UK Open RAN principles (2022, UK Government), and** the **UK Open RAN principles (2022, UK Government)**.

The North Wales Digital Strategy outlines the strengths, weaknesses, opportunities and priorities for action in digital connectivity in North Wales, including introducing a range of mobile connectivity options such as 5G faster than the market plans.

1.3 The Case for Change

1.3.1 Spending Objectives

Analysis from UK government supports the suggestion that advanced wireless can unlock economic benefits. It is widely accepted that advanced wireless adoption will improve GVA and productivity, and by extension also creation of jobs and inward investment. Quantitative modelling of this is however difficult to establish with confidence as the technologies and their applications are relatively new and real-world use cases have only emerged at scale within the last few years. The project contributes to the spending objectives Digital Programme Business Case.

[4] https://www.gov.uk/government/publications/uk-wireless-infrastructure-strategy/uk-wireless-infrastructure-strategy

[5] 5G Innovation Regions: open for applications - GOV.UK (www.gov.uk)

[6] Interim evaluation of 5G Testbeds and Trials (publishing.service.gov.uk)

Spending Objective 1 – Jobs	To create between 315-380 new jobs in North Wales through the programme by 2036
Spending Objective 2 - GVA	To create net additional GVA of £130m - £158m through the programme by 2036
Spending Objective 3 – Investment	To deliver a total investment of between £37m and £46m through the programme by 2036
Spending Objective 4 – Robust and Competitive 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
Spending Objective 5 - 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.
Spending Objective 6 – 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.
Spending Objective 7 – 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

Table 1 Digital Programme Spending Objectives

The Advanced Wireless project will support the three Spending Objectives of supporting job creation, increasing GVA and attracting further investment. These are Portfolio Spending Objectives to which each of the projects within the North Wales Growth Deal contribute.

Spending Objective 1 Advanced Wireless	To enable 100-200 business and public sector users in each of the counties of North Wales to take advantage of advanced wireless connectivity by 2030
Spending Objective 2 Jobs	To create between 130-200 new jobs in North Wales through the project by 2036
Spending Objective 3 GVA	To create net additional GVA of £41m - £62m through the project by 2036
Spending Objective 4 Investment	To deliver a total investment of between £13m and £20m through the programme by 2036

Table 2 Project Spending Objectives (Portfolio)

The Connected Campuses Project Board on 31st January 2023 agreed in the SOC and in other combined Project Board meetings where the OBC was developed, that the Advanced Wireless project should target the outcome of enabling businesses and public sector users to adopt a range of advanced wireless technologies. The board concluded that the project should not limit investment to a particular technology nor industry and that support should be developed which is relevant to a wide range of use cases given the relative low maturity of the applications in the region.

The project's principal Spending Objective has evolved from earlier versions, including in the project's Scoping Document, which referenced 'Connected Campus' locations. Since these locations are not closely defined at this time, they will be defined in a prioritisation process as part of the delivery. Their specific locations are not a significant factor in identifying the preferred option. In the Programme Business Case, 19 'Campus' locations were provisionally identified for investment to be targeted and while these sites remain of particular interest the project board considered for the Outline Business Case that an open scope should be adopted, not limiting investment to parts of the region.

1.4 Existing Arrangements and Business Needs

1.4.1 Spending objective 1

- To enable 100-200 business and public sector users in each of the counties of North Wales to take advantage of advanced wireless connectivity by 2030

Existing arrangements

- Most organisations in the region are using networks based on earlier standards of wireless technologies and have not yet adopted mobile private networks or WiFi 6. Use of Industry 4.0 technologies is growing however this is limited to manufacturing, particularly larger manufacturers

- Commercial 5G coverage is limited by scale and operator presence in the region although it is growing annually

Business needs

- There is no sustained programme of publicly funded support for businesses providing specific guidance on technologies. Investment in innovative network technologies is risky without a thorough knowledge of the benefits and implications of adoption.

- Sustained sources of relevant training are required in the region to support the growth of the region's skilled workforce. Noting that growth in the adoption of the latest and emerging advanced wireless technologies is expected to be gradual, it is essential that this training provision is both long term and reacts to changing requirements in line with changes in the technology.

- New investments and the transition from current systems may be costly. Current economic conditions (high interest rates, increasing staffing costs, inflation etc) restricts business investment to essential requirements.

- For wireless network technologies other than 5G, i.e. more localised, site-specific use cases involving, for example WiFi 6, the need for intervention may be applicable to more diverse locations

which do not necessarily include aggregated demand (i.e. industrial business premises rather than industrial estates).

1.4.2 Spending Objective 2

- To create between 130-200 new jobs in North Wales through the project by 2036

Existing arrangements

- Employment within organisations using or which have the potential to use wireless network technologies will include staffing with direct responsibility for installation and management of networks, i.e. ICT staff. For smaller organisations this may not be a specific role but part of the work of staff undertaking other tasks. For larger organisations the work will be managed by specialist teams with expertise across a range of ICT specialisms. Where networks support particular functions, for example manufacturing processes, the number and range of job roles *supported* (rather than created in the case of ICT staff) may be significant. Where efficiency leads to business growth and overall increase in the workforce should be expected in time as sales and production volume increases, albeit with the balance of job types shifting toward the skilled ICT staff.

Business needs

- Direct job creation will only be achieved if there are suitably qualified candidates to take on new roles, either through recruitment of new staff or training of existing staff. As explained under the previous business needs, sustained and reactive training provision in the region will be required, building on the existing relevant programmes such as ADAPTS and the medru skills factory.

- The North Wales Regional Skill's Partnership's 2024 Digital Skills Analysis Final Report[7] concluded from its survey feedback that the main requirements were for product/service delivery, data analysis, and programming, along with data and cloud engineering and cyber security. Power BI development, digital leadership, and full-stack development were separately mentioned. The report produced 8 recommendations to address the challenges reported by employers in meeting their skills requirements and action on these will be taken forward by the RSP.

1.4.3 Spending objective 3 and 4

- To create net additional GVA of £41m - £62m through the project by 2036 and
- To deliver a total investment of between £13m and £20m through the programme by 2036

Existing arrangements

- North Wales has a current GVA or ca. £15.6bn (GVA B) with manufacturing and health being the largest single industries contributing to this. GVA is weighted towards Flintshire and Wrexham which generate 53% of the region's GVA, with their manufacturing industries having a substantial impact. The contributions to GVA across the economy are provided in Appendix H.

[7] rspnorth.wales/publications

- GVA is a macroeconomic indicator and is affected by a wide range of factors. On this basis it is not possible to attribute observed changes in reported regional GVA with particular interventions. However, investment in 5G has been widely forecast to result in increases in GVA e.g. DCMS 2021 [8] *UK economic benefits are projected at £41bn-£159bn cumulatively over 2021-35 depending on the model scenario. Annual UK gross value added is projected to be 0.4%-1.6% higher in 2035 as a result of 5G technology.*

- DCMS (2021) forecast two GVA growth scenarios across the UK, i) 'general purpose technology (GPT) - adoption by nearly all firms and ii) advanced digital technology (ADT) -adoption varies by firm type and size

- For GPT a growth in Welsh GVA of nearly 1.6% by 2035 was estimated and for ADT growth of 0.37% in the same period (baseline 2021). Based on this estimate basic scaling to North Wales suggests an increase of £261m for GPT and £57.9m for ADT by 2035.

- With the Advanced Wireless project, the enhanced adoptions of 'advanced digital technologies' in the ADT scenario is considered most relevant and is in line with the estimated GVA impact in the project's spending objective of £41m-£62m.

- Existing investment in advanced wireless technologies is considered to be negligible in the short to medium term (by the midpoint of the Growth Deal term). However, it is impossible to forecast what this 'Business as Usual' scenario is for the region beyond this. Given the persistent economic challenges in the UK and globally, high levels of inflation and interest rates) the baseline of investment is therefore considered to be zero for the purpose of this business case.

Business needs

- The barriers to adoption of wireless infrastructure in North Wales are not considered to be unique and are consistent with those faced by organisations across the UK. On this basis the conclusions of the DCMS (2021) study are presented as business needs in respect of this spending objective. The spending objective of GVA and job creation is directly associated with the spending objective of increasing adoption by businesses (first spending objective) and therefore the business needs for each are common.

- While limited to 5G technology the study may be considered broadly relevant to all 'advanced wireless technologies. The study identified several key barriers to 5G adoption which, if not addressed by the market and/or via proactive Government action, might either delay or slow adoption of 5G within some or all 5G consumer groups. **Macro barriers** are cross-market barriers cutting across multiple areas/consumer groups and 5G applications.

  i. Willingness to pay for 5G services by individuals and businesses
  ii. lack of awareness concerning suitability of 5G and/or the benefits that 5G will deliver
  iii. the mobile industry's uncertainty over further 5G investment within public networks ahead of demand being established.

[8] Realising the Benefits of 5G (publishing.service.gov.uk)

- There is also significant awareness in the market on what 5G 'could' deliver. However, behind the 5G vision is a complex range of implementation issues, and some 5G users at least (**especially smaller businesses) are challenged by not having the internal capability and skills** needed to set up and integrate 5G connectivity into existing business systems

- Businesses whose core activity is not telecommunications may also not be well placed to drive the broader 5G features and evolution agenda. **Thus, there is a key role for 5G solutions experts (be those the large 5G vendors, system integrators or large IT firms) to provide professional support services to smaller firms.**

Business needs are therefore summarised as:

- Financial support with initial investment by regional users and/ or the MNOs as suppliers
- Support for MNOs to scale up 5G public networks
- Addressing knowledge and skills gaps

1.5 Scope and Service Requirements

Range	Core	Desirable	Optional
Potential scope			
Activity	Direct capital investment for organisations (users)	Direct capital investment for service providers *plus Core*	Demand stimulation and direct support for users (subject to revenue affordability) *plus Desirable*
Location	Targeted locations hosting 'ADT' users/ early adopters only	Locations determined by demand from ADT or GPT users	Not limited by location or target user
Key service requirements	Management of a capital investment fund	Delivery / promotion of a demand stimulation service *plus Core*	Delivery of direct operational support service *plus Optional*

Figure 1 Potential Scope and Service Requirements

1.6 Benefits

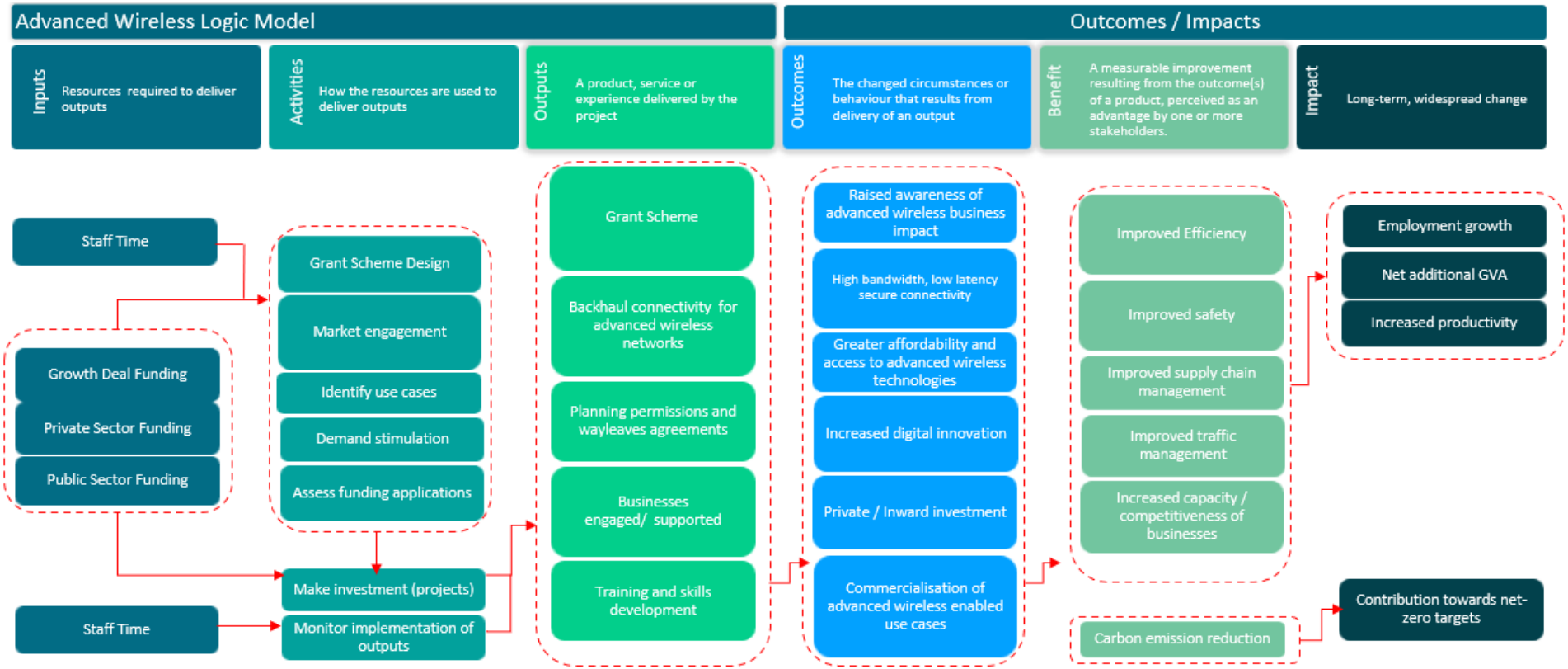
Some examples of likely benefits are shown below. A project logic model (

Figure 3) demonstrates the links from the project's spending objectives through to the benefits and impact. DCMS's 2021 report provides a logic map of 5G adoption and benefits (Appendix A) which splits these into benefits for commercial and domestic users. The scope of the project is focused on the applications for commercial users.

Benefits Category (Type)	Beneficiary	Benefit class (Measurement)	Benefit classification
Improved efficiency	e.g., Manufacturing organisations Public sector	Decision response times and productivity improvements	Direct Public Sector benefit (Cash releasing) Wider benefit to UK society (monetisable, including cash benefits)
Improved safety – enhanced CCTV	e.g., Local Authorities, police force, wider public	Reduction in crime More efficient detection and evidencing of crimes	Direct Public Sector benefit (Cash releasing) Wider benefit to UK society (Quantifiable but not readily monetisable)
Improved supply chain management	e.g., Goods providers	Inventory stock levels, cost of storage	Wider benefit to UK society (monetisable, including cash benefits)
Improved traffic management	e.g., Local authorities and Trunk Road Agents, local industries	Levels of congestion	Wider benefit to UK society (Quantifiable but not readily monetisable)
Increased capacity/competitiveness of businesses	e.g. Businesses	Change in turnover, sales	Wider benefit to UK society (monetisable, including cash benefits)

Figure 2 Expected main project benefits

Figure 3 Project Logic Model



1.7 Risks

A risk register has been developed through the business case process to support the OBC and is provided as Appendix E.

Business Risks

- The project may not have political stakeholder support
- The project and its part focus on 5G may attract adverse publicity or public opposition

Service Risks

- There may not be commercial appetite for the project. The project activities may not be enough to bring advanced wireless services to North Wales.
- There may be no user demand for advanced wireless at this time. Businesses may not be ready to use advanced wireless, for example because other pillars of Industry 4.0 are not yet in place.
- There may be no practical way to buy public advanced wireless network connectivity.
- The capital-only profile of Ambition North Wales funding may not be appropriate to the desired intervention. The best action for the public purse, may require some element of revenue funding.

External Risks

- The market may evolve so that there is no requirement for a demand side intervention.
- Global supply chains may be adversely affected, reducing the availability of key components
- Inflation and increasing interest rates / economic uncertainty

1.8 Constraints and Dependencies

- Delivery of advanced wireless services may be subject to the Public Contracts Regulations and the Subsidy Control Act and other legislation.
- Ambition North Wales policies, including the procurement principles and carbon and biodiversity methodology may constrain delivery
- The level of demand for advanced wireless networks in North Wales may to be higher than can be addressed by the funding available.
- Revenue funding may be required to support some elements of the project. Since Ambition North Wales funding is primarily Capital, this could be a constraint.

The following internal and external dependencies have been identified

- The project's scale will be a function of the level of demand that can be stimulated for advanced wireless adoption
- Supplier capacity to meet the needs of organisations across the region

2. Economic Case

2.1. Dimensions, Types and Variants

The options appraisal was reviewed by the combined Connected Campuses and Connected Key Sites and Corridors Project Board at its meeting of 13th July 2023. The Dimensions, Types and Variants identified for the Advanced Wireless project are shown below.

DRef	Dimension	Type	Notes	Variants	Valid Intermediates
1a	Scope (What)	Technology	Technologies in scope	4	1
1b	Scope (What)	Network Type	Types of network, public or private, or both	5	1
1c	Scope (What)	Activity	Types of activities that can be undertaken e.g. build, skills, or enablement	8	3
1d	Scope (What)	Location	Whethe to specify location	3	1
2a	Solution (How)	Intervention Type	Methods of deploying the intervention funding	6	2
2b	Solution (How)	Solution Ownership	Parties who may own the solution	4	2
3	Delivery (Who)	Who	What organisations might deliver the solution	5	2
4	Implementation (When)	When	When the solution could be deployed	3	1
5	Funding	Funding	How the solution could be funded	4	1

Critical Success Factors

- **CSF1: STRATEGIC ALIGNMENT:** The option supports the delivery of the Ambition North Wales Portfolio strategic economic objectives, including GVA, jobs creation, and inward investment.
- **CFS2: OPTIMISES VALUE FOR MONEY:** The option delivers long term value for money for the public purse in terms of costs, benefits, and risks – net benefit.
- **CSF3: ACHIEVABLE IN MARKET:** Suppliers can deliver the required services; appealing to the supply side.
- **CSF4: AFFORDABLE:** The cost of the option is affordable through available funding sources.
- **CSF5: ACHIEVABLE:** Ambition North Wales has the capacity and capability to deliver the option**.**
- **CSF6: SUPPORTS** Ambition North Wales ENVIRONMENTAL TARGETS on carbon reduction and biodiversity improvements

2.2. Longlist Assessment Outcome – identifying the Shortlist

From a Longlist of 28, 4 Options are taken through to Shortlist, three dictated by the methodology, and one because it rates well against the CSFs and Spending Objectives.

The Shortlisted Options are:

- **OP1: Business as Usual** – No Ambition North Wales Intervention.
- **OP2: Do Minimum**: Buy WiFi6,6E solutions from a single supplier, customer oversees delivery. Ambition North Wales funding only.
- **OP3: Preferred Way Forward**: Grant fund WiFi 6/6E, 5G mmWave and other advanced wireless technologies according to requirements, supported by demand stimulation and training, *managed by Ambition North Wales,* solution ownership to be defined. Multiple sources of funding, including clawback and other evergreen mechanisms.

- **OP4: Intermediate Option**: Grant fund WiFi 6/6E, 5G mmWave and other advanced wireless technologies according to requirements, supported by demand stimulation and training, *managed by customer,* solution ownership to be defined. Multiple sources of funding, including claw-back and other evergreen mechanisms.

Dimension	OP1: BAU	OP2: Do minimum	OP3: Preferred Way Forward	OP10: Intermediate Option
1a Scope (What) Technology	1a.1 Market dictates technical solution	1a.2 WiFi6/6E	1a.4 Market proposes appropriate technical solution for requirements	1a.4 Market proposes appropriate technical solution for requirements
1b Scope (What) Network Type	1b.1 Market dictates network type	1b.2 Market dictates network type according to requirement	1a.5 Public and Private networks delivered according to ANW requirements	1a.5 Public and Private networks delivered according to ANW requirements
1c Scope (What) Activity	1c.1 No ANW activity	1c.2 Demand stimulation	1c.6 Equipment and commissioning, demand stimulation, and skills and training	1c.6 Equipment and commissioning, demand stimulation, and skills and training
1d Scope (What) Location	1d.1 No location specified	1d.2 Specified location	1d.3 Any North Wales location	1d.3 Any North Wales location
2a Solution (How) Intervention Ty	2a.1 Do not deploy ANW funds for solutions	2a.2 Buy one solution for all use cases from a single supplier	2a.6 Fund applications that meet criteria with grant or voucher	2a.6 Fund applications that meet criteria with grant or voucher
2b Solution (How) Solution Owner	2b.1 Market determines solution ownership	2b.2 Supplier owns the solution	2b.1 Market determines solution ownership	2b.1 Market determines solution ownership
3 Delivery (Who) Who	3.1 Market delivers	3.2 Supplier Delivery, customer oversight	3.3 Supplier Delivery, ANW oversight	3.2 Supplier Delivery, customer oversight
4 Implementation (When) When	4.1 Market sets deployment timescale	4.2 Supplier sets deployment timescales within criteria set by ANW and Customer	4.2 Supplier sets deployment timescales within criteria set by ANW and Customer	4.2 Supplier sets deployment timescales within criteria set by ANW and Customer
5 Funding Funding	5.1 Funded by others	5.2 ANW funding	5.4 Multiple funding sources	5.4 Multiple funding sources
Carbon & Biodiversity Impact	Limited ability to influence C&B	Some limitations on scope to manage C&B impacts	Good scope to manage C&B	Some limitations on scope to manage C&B impacts
Shortlisting Rationale:	Always Carry Forward	Always Carry Forward	Always Carry Forward	Carry Forward
Description	BAU: Customers and Suppliers deploy advanced wireless with no ANW involvement.	Do Minimum: Buy WiFi 6 solutions from a single supplier, customer oversees delivery. ANW funding only.	PWF: Grant fund WiFi6/5G according to requirements, supported by demand stimulation and training, managed by ANW, solution ownership to be defined, Multiple sources of funding	Intermediate Option: Grant fund WiFi6/5G according to requirements, supported by demand stimulation and training, managed by customer, solution ownership to be defined. Multiple sources of funding

2.3. Selecting the Preferred Option

To select the Preferred Option, each Shortlisted Option next underwent an assessment of delivery costs, risk monetisation, benefits, applying optimism bias.

The Net Present Social Value for the shortlisted options is shown in the table below. The detailed assessment is provided in Appendix B: CC Advanced Wireless NPSV v0 4.

	Total Costs	NPSV
OP1 BAU	£ 145,200	-£ 112,384
OP2 Do Minimum	£ 635,755	£ 303,568
OP3 Preferred Way Forward	£ 20,046,891	£ 23,691,658
OP10 Intermediate Option	£ 20,172,891	£ 23,584,005

For each option, the estimated implementation and operating costs are estimated. They are inflated by 20% to account for optimism bias in their estimates. 20% has been selected to reflect that the costs of developing the scheme could be underestimated. The level of spend will be constrained by the budget, so that unexpectedly high-cost projects could be replaced by lower cost ones. The optimism bias is not a differentiator between the options at this stage.

For the risks of each option that can be mitigated, the cost of the mitigation is multiplied by the probability of the risk to provide a monetised expected mitigation cost.

The majority of documentary evidence for benefits is qualitative, with very few transparent measures of the financial value of the benefits. However, the conditions of the grant scheme will set out criteria for economic benefits, ensuring that the project delivers value.

The benefits for the NPSV are calculated based on the assumption that organisations require a payback period of around 3 years for investments that drive productivity improvements, and that the solutions implemented will have a useful life of 10 years, so that there will be 7 years of benefits captured by the beneficiary after the initial investment is recovered. We further assume that those productivity savings will be leveraged by the beneficiary, reinvesting them to add 10% to their value annually.

The NPSV for each option is calculated from the total costs and benefits, adjusted by the GDP Deflator and the Social Time Preference Rate according to the HM Treasury Green Book methodology.

2.4. Benefit Cost Ratio

The Benefit Cost Ratio for the indicative Preferred Option is 280% for the estimated 10-year life of the intervention. The Benefit Cost Ratio for the shortlisted Options is shown in the table below.

	Total Costs	Total Benefits	BCR
OP1 BAU	£ 145,200	£ -	0.0
OP2 Do Minimum	£ 635,755	£ 1,300,000	2.0
OP3 Preferred Way Forward	£ 20,046,891	£ 61,906,953	3.1
OP10 Intermediate Option	£ 20,172,891	£ 61,906,953	3.1

2.5. Preferred Option

The Preferred Option is OP3, confirmed by the Project Board. The Preferred Option calls for a range of activities:

- Set up a flexible grant scheme to fund adoption of advanced wireless solutions
- Secure additional funding to supplement Ambition North Wales funds.
- Oversee the implementation of advanced wireless solutions and drive benefits realisation

2.6. Outputs

The Preferred Option will deliver the following outputs:

- Advanced wireless adoption enabled as far as possible within the available budget
- Ambition North Wales funding of approximately £19m deployed

The precise scope and level of advanced wireless provision will be determined in an initial grant scheme design phase.

2.7. Sensitivity Analysis

The sensitivity analysis considers the margin by which the Preferred Option is preferred, and the factors that could cause another Option to be preferred instead.

The Preferred Option (OP3) is highly robust against the OP1 BAU and OP2 Do Minimum Options because it delivers a far greater level of benefits.

OP10 differs from the Preferred Option only in the lower level of delivery oversight provided by Ambition North Wales, and its correspondingly higher level of risk. The Preferred Option is therefore sensitive to the value of this risk. OP10 becomes preferred if the cost of mitigating the delivery risk is higher than the modest impact of the risk itself. However, since the two Options are very similar, choices about the level of oversight to provide can be made in the delivery phase. This sensitivity should be kept under review in the delivery of the project to ensure that the Preferred Option continues to deliver better value than doing nothing.

3. Commercial Case

3.1. Procurement strategy

The project will involve the design and delivery of a grant scheme and grant beneficiary organisations purchasing advanced wireless technologies. There are therefore two streams of procurement within the project led by Ambition North Wales and led by beneficiaries.

Ambition North Wales will:

- Procure specialist support to design the grant scheme
- Select grant beneficiaries through an application process

Beneficiaries will be responsible for procuring the scope of equipment approved in grant applications.

3.2. Specialist support

Procurement of grant scheme desgin services may be undertaken through the Crown Commercial Services Dynamic Purchasing System RM6322 (End date 27/11/2030). This has six categories including

1. Design and Development: programme guidance, design elements, application forms and processes, monitoring and reporting, expert consultancy, IT systems.

2. Evaluation Services: design robust evaluation systems, measure impact and outcomes, carry out site visits, evaluate lessons learnt.

Where is it not possible to select a service provider through the DPS an open tender competition will be held through the Sell2Wales portal.

3.3. Selection of beneficiaries

At OBC stage it is expected that the Project Board supported by the advisory group will oversee grant assessments and make recommendations for approval either to the Programme Board, Portfolio Board or Ambition Board according to award value.

3.4. Procurement by beneficiaries

Both public and private sector beneficiaries will be required to undertake their own procurement of the goods and services required for their specific projects. the case of public sector organisations, they will procure in line with standard practices e.g. open tender, use of frameworks etc and in accordance with the Public Contracts Regulations. Where appropriate, beneficiaries with common requirements may pursue collaborative procurements which offer better value for money, economies of scale and reductions in procurement costs.

All procurement will be required to be in accordance with the Ambition North Wales Procurement Principles which describe the region's procurement themes and principles, including in respect of carbon and biodiversity and social value.

3.5. Services requirements and outputs

Grant scheme design

The grant scheme design service will be specified to ensure that the Spending Objective of 'enabling selected business and public sector users to take advantage of advanced wireless connectivity' is met.

The scheme's design should include an assessment of the characteristics of businesses, including size, sector, technical demand, skills etc, across the region, so that funding calls can be designed to deliver value across the region.

The grant scheme criteria will include:

- demonstrating a clear requirement for advanced wireless solutions (utilising publicly available mobile networks will not be eligible)
- demonstrating a clear economic benefit for the funding that exceeds the scheme's minimum threshold
- obligations on grant beneficiaries to operate the infrastructure to provide an agreed level of network coverage for a defined period
- obligations in respect of carbon and biodiversity in accordance with the Ambition North Wales methodology
- Minimum/maximum grant values, with the possibility of larger applications in some calls, especially in the first funding rounds
- a match funding requirement of c. 50% in cash or in kind, subject to Subsidy Control compliance
- a broad range of eligible costs that are capitalisable advanced wireless costs, and could include equipment, engineering and installation costs, but not the operating costs of the solution

- a clear list of eligible costs and payment when they have been evidenced
- clawback provisions to recover grant funding if the terms of the award are later breached
- obligations for use cases to be developed and publicised by Ambition North Wales
- a scoring methodology, potentially including assessment of economic impact

3.6. Social Value

In accordance with Ambition North Wales Procurement Principles, grant beneficiaries will be required to seek Social Value from suppliers though their procurement. The requirement for this will be a condition of grant approval.

3.7. Subsidy Control

With a range of potential use cases and a broad scope of eligibility for applicants, including the private sector, funding will be awarded either on a 'no subsidy basis' or as a permitted subsidy in compliance with the Subsidy Control Act. It is expected most awards will be permitted subsidies.

Where subsidy is awarded, it is anticipated that funding will be granted as Minimal Financial Assistance (MFA), within the value threshold and noting the constraint of cumulation with previous awards. Where MFA is not appropriate a suitable approach will be considered including

- Welsh Local Government Capital Investment Aid & Employment Aid Scheme (SA.60356)
- UK Local Growth Streamlined Route
- UK Research, Development and Innovation Streamlined Route

Ambition North Wales will obtain detailed subsidy control advice when the grant scheme is developed to confirm the scope of criteria ensures compliance with MFA and the other potential routes listed above.

3.8. Risk allocation

Risk apportionment grant scheme design and administration

Risk Category	**Potential allocation**		
	Public	**Private**	**Shared**
Design risk			
Transition and implementation risk			
Availability and performance risk			
Operating risk			
Termination risks			
Control risks			
Financing risks			
Legislative risks			
Other project risks			

Table 3 Risk apportionment (Ambition North Wales procurement)

3.9. Risk apportionment beneficiaries' delivery

Risk associated with the implementation will be apportioned entirely to beneficiaries and confirmed in the Grant Funding Agreements. To control the risk to Ambition North Wales of under performance by beneficiaries, the grants will be payable in stages, in arrears and based on evidence of eligible expenditure and pre agreed key performance indicators.

3.10. Charging mechanism, contract type and accountancy treatment

The project intends to make payments for its key outputs and services over the lifetime of the contracts as set out in tables below. During the pre-delivery phase the grant scheme design will be paid according to a fixed price (Ambition North Wales contract) and external legal advice where required will be paid as a day rate (called off form existing framework).

The accountancy of the deal will follow Cyngor Gwynedd's relevant accountancy standards. The service contract for the project will be subject to VAT and reclaimed in line with Cyngor Gwynedd's standard treatment. The balance sheet will feature in the reporting process set out in a Grant Scheme management plan.

3.11. Key Commercial Case considerations for the FBC:

- Identifying the most suitable operating model and the Accountable Body for the grant scheme, currently assumed to be the future North Wales Joint Committee / Ambition North Wales.
- Market testing of the potential supplier base and scope of services proposed for running a fund; identification of suitable and capable providers based in North Wales.
- Exploring potential partnership arrangements with Development Bank of Wales for Ambition North Wales to deliver grant in conjunction with Development Bank of Wales' SME loans offer.
- Finalising the most suitable contractual arrangements for procured resources.
- Securing legal advice on fiduciary duties and subsidy control considerations relating to the grant scheme

4. Financial Case

Preferred Option – Advanced Wireless grant scheme
A £19M fund will operate as a flexible grant scheme to fund adoption of advanced wireless solutions. The scheme will be administered by Ambition North Wales over a three-year period following initial scheme design with project management provided by the sponsor, Ambition North Wales. The first phase of the project will involve the grant scheme design and set up followed by the delivery of capital funding to private and public sector organisations which will apply for funding in accordance with the scheme's conditions and eligibility criteria.

It is not possible to establish at this stage how much spend will be required for any single advanced wireless solution because the applications are generally at an early stage of maturity in the UK, and each network will be uniquely tailored to the specification of the user. Lessons learned through the delivery of projects in earlier funding rounds will better inform the later rounds. UK Government's 5G Innovation Regions Programme (2024-25) which shares a similar scope, will inform grant scheme design initially and evaluation of that programme will assist in reviewing scheme criteria in years 2 and

4.1. Financial constraints

- A budget of £19.54M is allocated from the Growth Deal's Connected Campuses project. All modelling for the OBC is based on the £19.54M capital.
- The Growth Deal funding package is capital funding only with no revenue funding for projects.

4.2. Funding Sources

Growth Deal capital funding will primarily be used to establish and manage the grant scheme for the duration of the project. Activities to support the deployment, such as demand stimulation, market engagement, awareness raising, the facilitation of forums to bring customers and suppliers together, will require revenue funding. The fund's design is proposed to include a charge for successful applicants to meet the costs of delivering the scheme, including administration, assessment and demand stimulation. The scheme design will identify a suitable rate to charge for applications based on the grant award sought, with this expected to be in the range of 1% to 5%. Income from this charge will also be required to cover the administration of unsuccessful expressions of interest which do not proceed to successful applications. It will therefore be essential that clear eligibility requirements set out at expression of interest stage are designed into the scheme to ensure a high conversion rate to successful awards.

		Year 1	Year 2	Year 3	Year 4	Total
Funding						
15	CAPEX funding (Growth Deal)	£ 123,900	£ 4,674,653	£ 9,808,864	£ 4,931,732	£ 19,539,148
16	OPEX (Subsidy Control resource, Ambition North Wales PMO)	£ 6,250	£ -	£ -	£ -	£ 6,250
17	OPEX (Administration charge to applicants)	£ -	£ 104,193	£ 104,193	£ 104,193	£ 312,579
18	OPEX contingency (Ambition North Wales PMO)	£ 1,250	£ 20,839	£ 20,839	£ 20,839	£ 63,766
19	**Total funding**	£ 131,400	£ 4,799,684	£ 9,933,895	£ 5,056,763	£ 19,921,743

Table 4 Summary of project funding sources

4.3. Private investment

Total investment per beneficiary will be confirmed with each award however for the purpose of the Economic and Financial cases estimates are calculated based on average awards matched by the beneficiary at a rate of 50% of total costs. Subject to the scheme design and Subsidy Control conditions, intervention rates and the value of levered investment per application is expected to vary according to the extent of benefits to be delivered by the applicant, e.g., job creation, productivity etc.

		Year 1	Year 2	Year 3	Year 4	Total
	Private / Public sector capital investment (est.)	£ -	£ 4,620,053	£ 9,754,264	£ 4,877,132	£ 19,251,448

4.4. Estimated Capital Costs

		Year 1	Year 2	Year 3	Year 4	Total
Capital Expenditure						
1	Grant awards	£ -	£ 4,620,053	£ 9,754,264	£ 4,877,132	£ 19,251,448
2	Grant scheme design	£ 57,750	£ -	£ -	£ -	£ 57,750
3	Capitalised Staff costs (ANW, project mgt.)	£ 45,500	£ 45,500	£ 45,500	£ 45,500	£ 182,000
4	Contingency	£ 20,650	£ 9,100	£ 9,100	£ 9,100	£ 47,950
5	**Total Capital costs (CAPEX)**	£ 123,900	£ 4,674,653	£ 9,808,864	£ 4,931,732	£ 19,539,148

Table 5 Indicative Capital Costs

An average award of £75,000 is modelled (assuming total costs are therefore £150,000 including the beneficiaries' 50% capital contribution) however it is anticipated that the grant scheme will be de-signed to serve several categories of award value (i.e. small, medium and large awards). All capital costs are expressed as exclusive of VAT.

4.5. Estimated Revenue Costs

Operating costs that do not qualify as capital expenditure will be met with income generated by the scheme administration charge paid by successful applicants. In year 1 revenue costs will be required to be covered by PMO budget in advance of successful applications being processed and this is likely to extend to year 2 during the initial period of applications being received and processed. As the scheme matures and the volume of applications increases the income from applicants will be used to sustain the ongoing delivery of the Scheme through to completion. The estimated revenue costs of the project are shown in the table below. All revenue costs are expressed as exclusive of VAT.

Lifespan		Year 1	Year 2	Year 3	Year 4	Total
Operating Expenditure						
6	Subsidy Control resource	£ 6,250	£ -	£ -	£ -	£ 6,250
7	Grant operation	£ -	£ 22,750	£ 22,750	£ 22,750	£ 68,250
8	Application assessment	£ -	£ 27,576	£ 27,576	£ 27,576	£ 82,727
9	Demand stimulation	£ -	£ 45,500	£ 45,500	£ 45,500	£ 136,500
10	Programme management	£ -	£ 8,367	£ 8,367	£ 8,367	£ 25,102
11	**Subtotal OPEX**	**£ 6,250**	**£ 104,193**	**£ 104,193**	**£ 104,193**	**£ 318,829**
12	Contingency	£ 1,250	£ 20,839	£ 20,839	£ 20,839	£ 63,766
13	**Total Operating costs (OPEX)**	**£ 7,500**	**£ 125,032**	**£ 125,032**	**£ 125,032**	**£ 382,595**

Table 6 Indicative Revenue Costs

4.6. Assumptions

- Grant awards will vary from low value awards (ca. £10,000) up to higher value awards of £1M+, based on a range of applications which have been funded by UK Government sponsored schemes such as 5G Innovation Regions and the 5G Test Bed and Trials Programmes. Other grant schemes currently operating in the UK with comparable scope demonstrate that this range is appropriate and the scheme should expect to attract both low and high value capital bids.

- Successful applicants will be prepared to pay the administration charge to access the capital funding. The overall estimated income from this charge represents 1.6% of the total capital grant award and is considered to be a proportionate level of cost to the applicants.

4.7. Risks

Risk	Description	Mitigation
Grants	If the value of individual grants or overall grant scheme is insufficient the scheme may not have a material effect on spending objectives and benefits.	Engage market in grant design. and for each funding call. Review success of each funding call, and delivery projects and adjust scope to reflect feedback. Consider increasing grant values and securing additional funding.
Budget	If project costs are higher than budgeted for outcomes may be reduced or the scheme may be unaffordable	Engage with market to test assumptions. Detailed assessment of costs through development. Ensure that delivery cost is not all-or-nothing, so that higher unit cost simply means less volume delivered, not delivery failure.
Administration charge	If the administration charge applied to successful applicants deters applicants there may be reduced delivery of the capital grant fund risking delivery of spending objectives and benefits.	Consult a range of potential applicants to ensure administration charges are proportionate and affordable across a range of project values. Review administration charges throughout the project lifecycle and revise these where necessary ensuring the project remains affordable.
Demand	If there is insufficient demand for the grants at the minimum values prescribed in the scheme the costs associated with delivery and administration are unaffordable	Thorough consultation with potential applicants will need to be undertaken during the design of the scheme and a high level of engagement, promotion and demand stimulation activity planned to ensure a sufficient volume of quality applications.
Administration of unsuccessful expressions of interest	If the scheme attracts a large volume of unsuccessful applications the cost of administering these may exceed the income secured from successful applications, risking the affordability of the scheme.	The grant scheme's design will need to consider effective means of efficiently processing expressions of interest so that only those which have a high probability of success are accepted to full application. Scheme criteria will need to be appropriately balanced to both encourage applications and set eligibility requirements which reduce risk of failed delivery of benefits.

4.8. Financial Case Summary

		Total
Capital Expenditure		
	Capital costs	£ 19,491,198
	Contingency	£ 47,950
	Total Capital costs (CAPEX)	**£19,539,148**
Revenue Expenditure		
	Revenue costs	£ 318,829
	Contingency	£ 63,766
	Total Operating costs (OPEX)	**£ 382,595**
Project costs		
	Project costs	£ 19,810,027
	Project contingency	£ 111,716
	Total project costs (public)	**£ 19,921,743**
Project income		
	Applicant scheme administration charge	£318,829
Net project cost (public)		£ 19,914,593
	Private investment	£ 19,251,448
	Total costs (Net Public + Private)	**£ 38,854,362**

Table 7 Summary of project costs

5. Management Case

5.1. Methodology

The NWEAB has developed a Project Management Framework that sets out how a NWEAB project is to be defined, directed, managed, and communicated. This Framework is aligned with HM Government project guidance with methods tailored to meet NWEAB requirements.

5.2. Governance

The Advanced Wireless project will be aligned with the Ambition North Wales governance structures. The Project Manager will report to the Ambition North Wales Digital Programme Manager, governed by the Connected Campuses Project Board. The project will have a Project Manager and a Senior Responsible Owner (SRO). The Project Board reports to the Digital Programme Board, which in turn reports to the Portfolio Board. The North Wales Economic Ambition Board is the authority with ultimate responsibility for approving business cases. Escalation of risks, issues and change management is applied up the hierarchy according to the level of significance.

5.3. Resources

The project will require a combination of dedicated staff for activities like project management, and support for specialist matters such as technical, financial, legal, commercial, and grant setup activities. The project should be resourced by a team of internal and external project resources and sup-

port from the Ambition North Wales PMO. A hybrid approach will ensure the availability of the necessary capacity and capabilities, some of which will be short term or of a specialist nature. A high degree of demand stimulation and market engagement will be necessary to ensure that customers and private sector partners are encouraged to apply for scheme funds. The Financial Case states 1 FTE to support these activities.

5.3.1 Scheme Operation

The operation of the scheme will require 0.5 FTE to administer the scheme and a panel to evaluate applications:

- Publish funding calls and manage the application process along with any clarifications
- Triage applications to ensure the eligibility criteria have been met
- Coordinate the evaluation of eligible applications
- Notify successful and unsuccessful applicants
- Administer and track the award of funds against the Ambition North Wales budget

5.3.2 Skills and Training Activities

To deliver benefits from advanced wireless delivery projects, beneficiaries may need training to fully exploit the features and opportunities posed by the technology. These requirements are beyond the scope of this project, but Ambition North Wales will facilitate access to appropriate training courses, for example through the Regional Skills Partnership.

5.4. Project Delivery and Management

5.4.1 Design - Duration: approx. 6 months

- Defining the eligibility criteria for the grant scheme, and designing the supporting operational processes
- Develop outline schedule of funding rounds

5.4.2 Market engagement - Duration: approx. 6 months in parallel with Design.

- Engaging the market to confirm that the proposed approach will be attractive to the market and that it will be capable of delivering the intended benefits
- Engaging local skills partnerships to identify opportunities to support training activities Develop and issue market notices
- Develop information packs and supplier/ customer engagement forums to raise awareness of the scheme, highlighting the opportunities Advanced Wireless present.
- Stimulating demand by creating a customer ecosystem that engages Ambition North Wales partners and potential customers to identify locations and use cases for advanced wireless application
- Creating a regional advanced wireless supply chain ecosystem that brings solution component suppliers and investors together in the region

5.4.3 Scheme Operation - Per funding round - Duration: 2.5 years initially

- Setting the award criteria for each round and geographical and sector focus of the round, ensuring that all parts of the region can benefit from the fund
- Monitoring and updating eligibility criteria, design and grant value based on lessons learned from previous tranches of the grant
- Publishing funding calls
- Managing the application process along with any clarification questions posed
- Supporting the evaluation of eligible applications by a specialist panel
- Notifying successful and unsuccessful applicants
- Administering and tracking the award of funds against the Ambition North Wales budget
- Creating case studies

5.5. Specialist Resources

The Advanced Wireless project will be supported by supplementary third-party resource to provide technical, financial, legal, commercial, procurement, and grant scheme design and set-up expertise. The Ambition North Wales PMO is planning procurement activity to ensure the requirements for these delivery specialisms are met before the projects commence.

5.6. Assumptions

- Stakeholders will work together with Ambition North Wales to define the eligibility criteria for fund applications. The criteria will recognise any requirements stipulated by Ambition North Wales funding sources, for example beneficiary match funding, Capital and revenue limitations and so on.

- The market will aid in educating customers as part of its sales and marketing effort and services provision.

- The Regional Skills Partnership could play a role in engagement with customers and facilitation of skills and training activities where required.

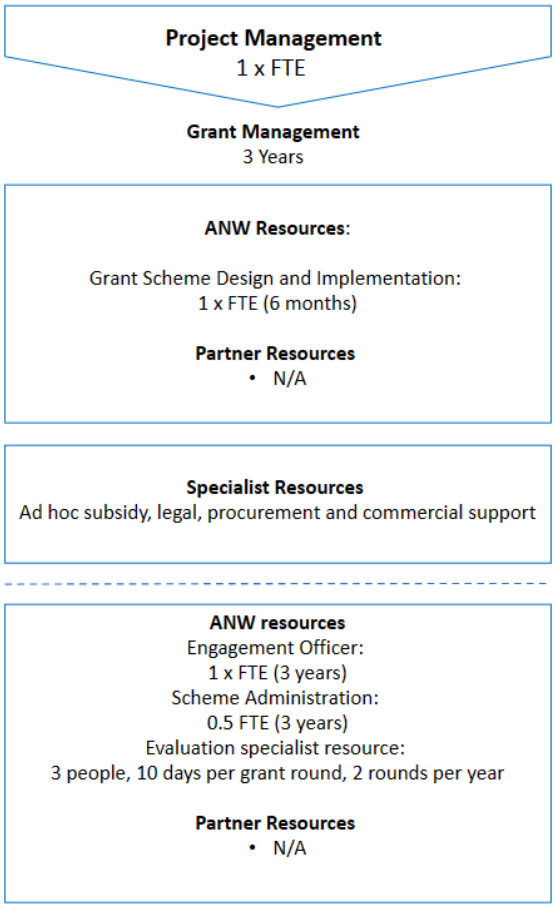


Figure 4 Summary of project resources

5.7. Risks and Issues

The Ambition North Wales Portfolio Management Office has developed a Risk and Issues Management Strategy for use across all Growth Deal projects. The strategy covers the management of risks and issues across the several categories including regulatory, environmental, financial, reputational and social, programme and project delivery and health and safety. The risk register will be owned by the SRO and managed by the Project Manager. Risks will be reviewed and scrutinised at all Project Board meetings and escalated to the Programme Board where required. The Programme Manager will have access to, and oversight of the project risk register with a remit to challenge and provide a quality assurance function.

The Risk Escalation process

- Project > Programme Risks: Project risks of significant concern will be escalated for consideration as part of the Programme Risk Register if they are considered to pose a threat to the wider programme and its expected benefits.

- Programme > Portfolio Risks: Programme risks of significant concern will be escalated for consideration as part of the Portfolio Risk Register if they are considered to pose a threat to the wider portfolio and/or the strategic goals of the NWEAB.

Risk	Impact	Mitigating Action
If there is a lack of commercial and implementation resource to support scheme set up	The project is delayed or less successful.	Understand and describe the resource implications early enough to allow Ambition North Wales sufficient lead time to identify and appoint appropriate resources
If revenue funding for the operation of the advanced wireless grant scheme is not available	The project cannot be delivered.	Seek out sources of revenue funding. Consider feasibility of Ambition North Wales partner contribution, or customer contribution as part of the eligibility criteria.
If planning and other constraints hinder progress of the resulting beneficiary delivery projects	Timescales are difficult for projects to achieve	Identify ways that Council partners can remove barriers to deployment, e.g., facilitate access to existing infrastructure. Plan early for this long lead-time item
If there is lack of interest and take up of the grant scheme	The project has a limited impact	Demand stimulation and raising awareness of the scheme, the benefits of private 5G networks and existing use cases in similar industries.

Table 8.1 Key Delivery Risks

5.8. Quality Management

The products to be delivered by the project are likely to be diverse in their nature ranging from Initiation documentation through to eligibility criteria, communications materials, Engagement Forums, scheme processes, and application guidance materials. Products will be assured and accepted in accordance with the Ambition North Wales approach to Quality Management, by either the Connected Campuses Project Board or other appropriate Ambition North Wales representatives.

5.9. High Level Timescales

The high-level timescale for the project is shown below. The delivery project plan is provided in Appendix C.

5.10. Stakeholder and Market Engagement

Engagement will ensure that key NWEAB political and stakeholders are engaged and briefed throughout the design, procurement (where appropriate), and implementation and operation stages of the project. The take up and exploitation of advanced wireless is considered a demand-led challenge. The Project team will engage with local businesses to raise awareness of the project, its objectives, and the scheme to drive participation leading to greater exploitation. Engagement will test Ambition North Wales's requirement, test the proposed assumptions about the management and operation of the scheme, test the commercial and delivery approach, confirm the attractiveness of the proposition both to potential scheme applicants and market partners, and encourage participation.

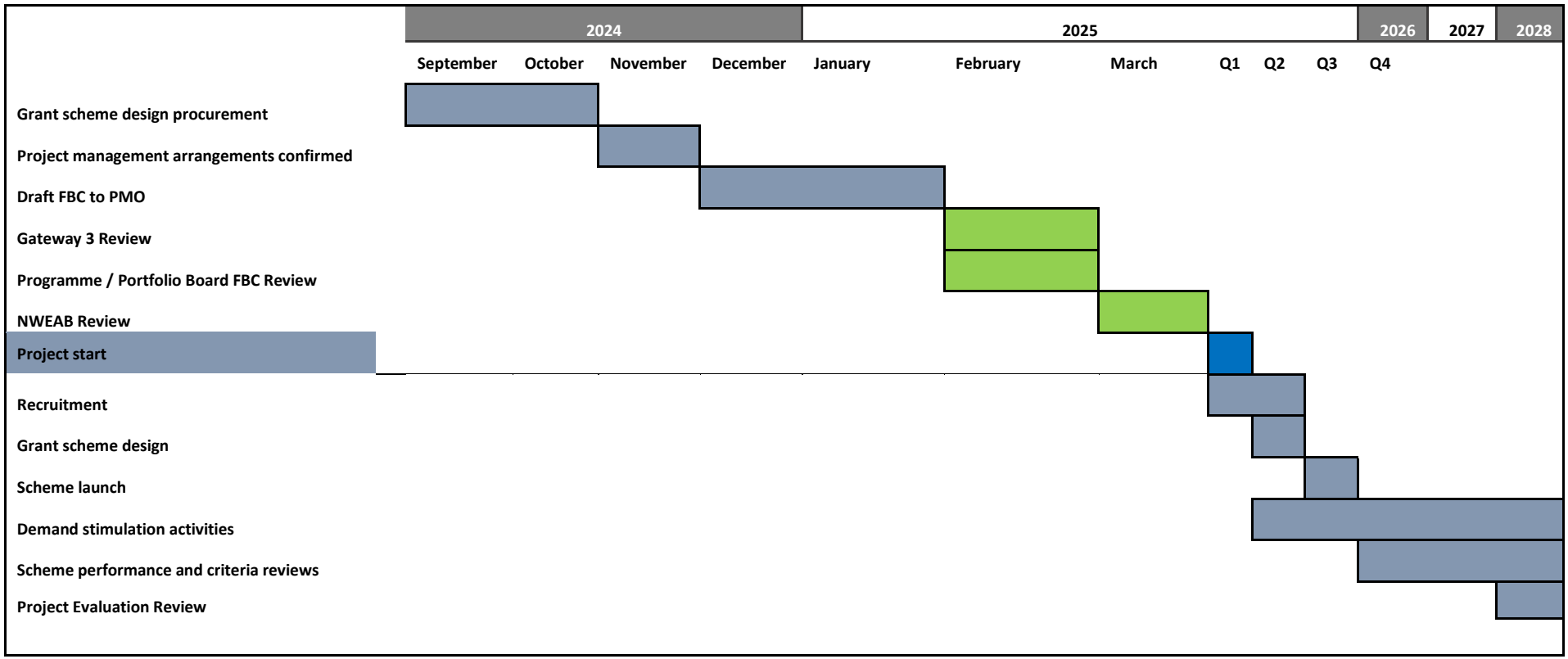


Figure 5 Outline Project Plan

5.11. Market Engagement Overview

A market engagement plan has been developed which sets out the approach to be taken to support the Advanced Wireless project. The Market structure diagram in Fig 8.4 below, shows the scope of market engagement. The market engagement approach comprises several engagements scheduled at different stages of the project scoping and delivery process. An overview is provided below.

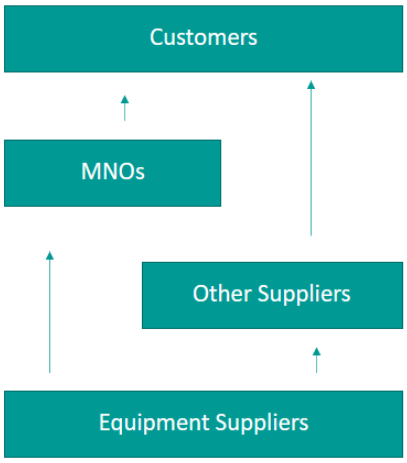


Fig 8.4 Scope of Market Engagement

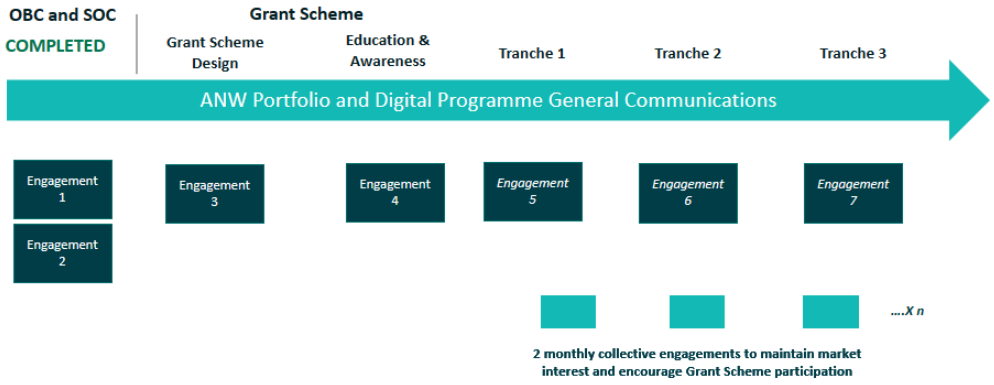


Fig 8.5 Market Engagement Overview

Engagements 1 and 2 engaged the market to inform the Strategic, Economic and Commercial Cases of the SOC and OBC development and have now been completed. Appendix D outlines the market engagement conducted in respect of Advanced Wireless.

The focus of Engagements 3,4, 5, 6 and 7 are shown in Fig 8.6 below.

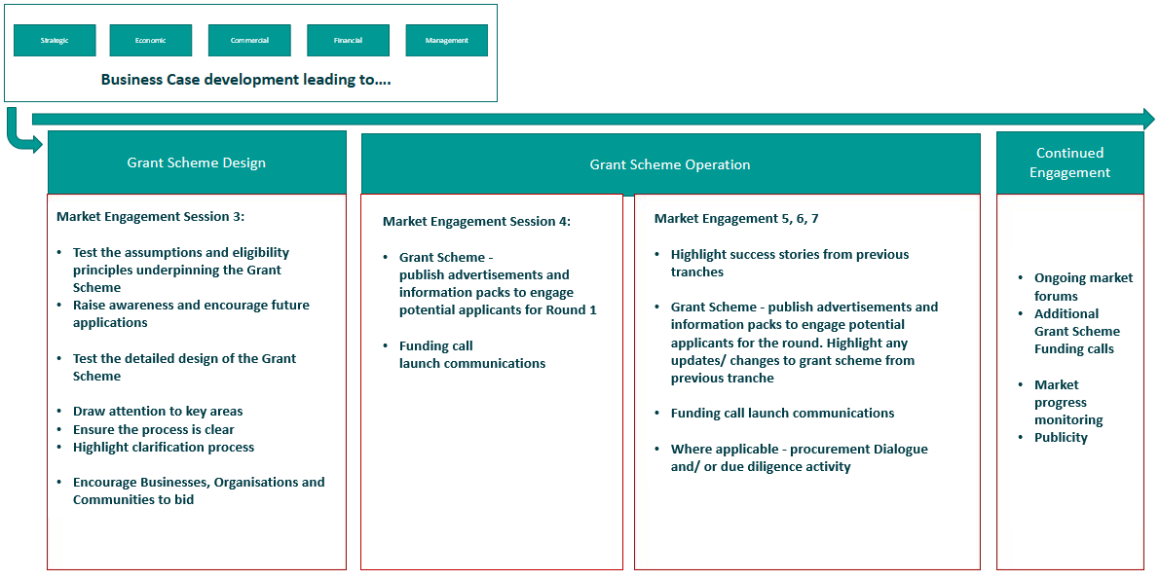


Fig 8.6 Engagements 3,4, 5, 6 and 7 focus

5.12. Project Evaluation

A Monitoring and Evaluation Plan has been developed for use across the Portfolio which describes the arrangements to monitor and evaluate the outputs, outcomes and impacts of the Growth Deal programmes and projects. Key components of the plan are set out below:

- Monthly Highlight Reports for all programmes (produced by Portfolio Management Office) and all projects (produced by Project Manager)
- Formal Quarterly Reports to the NWEAB, UK Government and Welsh Government (produced by Portfolio Management Office)
- Formal Annual Report to NWEAB, UK Government and Welsh Government (produced by Portfolio Management Office)
- Independent economic impact evaluation to be undertaken every 3-5 years against suite of indicators agreed with UK Government and Welsh Government
- Wider benefits to be achieved through procurement where appropriate, particularly social and community value will be monitored and evaluated to ensure maximum benefit is derived to the region from such activity

5.13. Benefits Management

The project will adopt the Ambition North Wales standard approach to benefits management. Mechanisms for tracking and measuring the outcomes and benefits that the Ambition North Wales project and resulting beneficiary delivery projects have been set in place to achieve will be established, demonstrating

the contribution of the projects to the Ambition North Wales Programme and Portfolio strategic objectives. Many of the primary outcomes that the projects will deliver, especially GVA are very difficult to measure and attribute directly to digital infrastructure investment. There may be a lag before the projects' effects are detectable, and improvements may be attributable to other initiatives of the Ambition North Wales Portfolio and other bodies.

The primary focus will be on the projects' outputs, in the form of the take up of the grant and the number of private Advanced Wireless networks established in line with the targets specified in the Spending Objectives. These will be simpler to analyse, more immediate, and more directly relatable by stakeholders. Case study and questionnaire analysis will be used to supplement the output analysis and to estimate the eventual benefits of the projects.

The project will baseline the KPIs that can reasonably be used as a direct proxy indicator for project success, including:

Benefit	Type	Beneficiary	Benefit Measurement
Greater awareness of Advanced Wireless networks and their benefits	Qualitative	Public and Private	Survey data
Improved processes and increased efficiency	Quantifiable	Public and Private	Statistics & survey data
Greater number of Advanced Wireless Use Cases	Quantifiable	Whole economy	Case Study collation
Greater Digital Inclusion	Qualitative	Public and Private	Number of connections within an AW network, survey data

Table 8.2 Benefits

5.14. External Assurance

In March 2024 the project underwent a Welsh Government Gateway 2 Review and received an Amber rating. Several recommendations were provided following the review interviews which included stakeholders within the Project and Programme Boards, the PMO, Welsh Government and UK Government (representing DSIT wireless infrastructure policy). The review panel also interviewed two SMEs from within the region who represented examples of potential candidate applicants to the grant scheme. The review concluded its assessment of readiness for the next phase:

"The Review Team concluded that there was sufficient evidence of satisfactory potential for the project to achieve its goals in the next phase, particularly given the broad base of stakeholder support across the region; the viability of the solution; the availability of relevant experience and good practice to draw on from elsewhere; and a sound, pragmatic approach to achieving the required outputs; but there were a number of actions (particularly with respect to project planning/control and design of the Grant scheme, covered elsewhere in this report) that would need to be completed in a timely and effective manner to best ensure that the spending objectives and the benefits would be achieved in the timeframe expected."

Supporting Documents

Please see accompanying spreadsheets:

Appendix A: CC Advanced Wireless Options Appraisal v1 0

Appendix B: CC Advanced Wireless NPSV v1 1

Appendix C: CC Advanced Wireless Project Plan v0 1

Appendix D: CC Advanced Wireless Market Engagement v0 1

Appendix E: CC Advanced Wireless Risk Log v0 1

Appendix F: Digital Programme Business Case

Appendix G: Overview of technologies and uses cases relevant to North Wales

Appendix H: GVA Distribution

Appendix I: CC Advanced Wireless Benefits Realisation Plan v0 1

Appendix J : ANW Procurement Principles

Appendix K: North Wales Digital Connectivity Strategy 2021

Appendix L Logic map of 5G adoption and benefits

Appendix L Logic map of 5G adoption and benefits (DCMS, 20