

## **Business Justification Case**

# **Development of a second permanent Regional Computed Tomography Simulator (CT-Sim) and Artificial Intelligence (AI) in the South West Wales Cancer Centre at Singleton Hospital, Swansea**



## Document control sheet

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# 1 Purpose

## 1.1 Introduction

This Business Justification Case (BJC) seeks approval from the Welsh Government (WGov) for Swansea Bay University Health Board (SB UHB) to develop a 2<sup>nd</sup> permanent Regional Computed Tomography Simulator (CT-Sim) and Artificial Intelligence (AI) in the South West Wales Cancer Centre (SWWCC) at Singleton Hospital, Swansea. The Health Board would require capital investment of £2.630m (incl of recoverable VAT).

Providing a second permanent CT-Sim within the South West Wales region will:

- Provide essential resilience in cancer treatment pathways in compliance with best practice requirements as set out in the Service Specification for External Beam Radiotherapy Services in Wales<sup>1</sup>, that requires Cancer Centre have access to a 2<sup>nd</sup> CT-Sim, and; as supported by the Clinical Oncology Sub Committee’s (COSCs) (of Welsh Scientific Advisory Committee), which recommends that all Welsh Cancer Centres (as part of a Radiotherapy 10-year Equipment Plan) include two CT-Sims
- Improve *Time to Radiotherapy* performance, support meeting the 14-day cancer target and reduce the patient pathway for the population of South West Wales
- Reduce significant clinical risk (operating only one machine presents a single point of failure, which should machine breakdown occur will result in breaches of Radiotherapy Treatment (RT) targets and will require emergency patients to be transferred to Velindre Cancer Centre (VCC)
- Provide access to innovative multi-professional AI software, which will reduce Clinical Oncologist and non-medical staff (Radiotherapy Physics) staff time spent undertaking Outlining targets and Organs at risk

This investment supports the final Welsh Scientific Advisory Committee Radiotherapy Treatment (RT) Infrastructure Plan (submitted to WGov 30<sup>th</sup> June 2022) and SB and HDd UHB’s Clinical Services’ Plans.

It supports national cancer strategies, including the Cancer Quality Statement (2021) and the Cancer Action Plan for Wales (2022).

SWWCC’s Strategic Programme Case (2023/2024 – 2032/2033) *Improving Regional Non-Surgical Oncology Services (Radiotherapy and Oncology Outpatients) for the population of South West Wales*, which was jointly developed by SB and HDd UHBs, recognises that CT-Sims are integral to RT treatment planning and that limited CT capacity presents the biggest barrier to achieving RT targets.

The plan is to have a second permanent CT-Sim commissioned and available to treat patients in 1<sup>st</sup> Qtr 2025

## 1.2 South West Wales Cancer Centre (SWWCC)

The SWWCC is based in Singleton Hospital, Swansea and provides non-surgical oncology services (cancer treatment) to South West Wales. It is one of three specialist Cancer Centres in Wales, alongside Velindre NHS Trust which serves the population of South East Wales and the North Wales Cancer Treatment Centre for North Wales:

Figure 1 – Wales Cancer Centres



<sup>1</sup> [executive.nhs.uk/functions/networks-and-planning/cancer/clinical-hub/radiotherapy/radiotherapy-accordion/service-specs/service-specification-of-external-beam-radiotherapy-services-eng/](https://www.executive.nhs.uk/functions/networks-and-planning/cancer/clinical-hub/radiotherapy/radiotherapy-accordion/service-specs/service-specification-of-external-beam-radiotherapy-services-eng/)

The SWWCC serves nearly one-third of the population of Wales. Principally, it serves the populations of SBU and HDd UHBs, and historically, a small number of Cwm Taff Morganwyg UHB's Bridgend population, a small catchment area on the South West Powys border, and a small number of other patients, as follows:

**Figure 2 – SWW Regional Activity by patient by postcode (2023/24)**

Activity	Total	SB UHB	HDd UHB	CTM UHB	South Powys NHS Trust	C&V UHB	Other (SNHSFT (Somerset & UH Dorset))
Activity by postcode	2,278	1,084	1,150	36	3	1	4
Activity %		47.59%	50.48%	1.58%	0.13%	0.04%	0.17%

Please see **Appendix F – Letter of Support**.

Radiotherapy departments ensure safe use of controlled doses of ionising radiation to treat people who have cancer and some benign conditions. Together with other types of active treatment, it has a vital role in modern cancer care with approximately 50% of all cancer patients receiving radiotherapy as part, or the whole, of their treatment plan.

Radiotherapy planning, which precedes treatment, requires CT-Sim scanners to provide 3D images of tumour anatomy that allow multi-professional teams in cancer care to localise tumours and plan RT by providing accurate radiation dose calculations.

Demand for CT simulation scans increased from approx. 1,600 patients p.a. in South and West Wales pre-Covid to 2,278 patients (requiring 2,688 scans) in 2023/24, post the introduction of hypofractionation (a treatment schedule in which the total dose of radiation is divided into large doses and treatments are given less often per week). Demand for scans is continuing to increase. As at May 2024, the forecast activity for 2024/25 was c3,000 scans.

Currently, the SWWCC only has one permanent CT-Sim and one additional temporary scanner that has to be decommissioned in December 2024 and is unable to provide complex planning per UK best practice. Most centres in England treating more than 2,000 patient's p.a. have two modern CT-Sims.

Adopting Artificial Intelligence (AI) outlining software has been shown to be a safe and effective way to reduce RT planning time, but as importantly increase the quality and safety of treatments. This support would be extended to the current and 2<sup>nd</sup> permanent CT-Sims.

### 1.3 Recommendation

Investment in an additional permanent CT-Sim supports best practice, achievement of Wales' RTT performance metric of 14 days (a core WGov Quality Metric for Cancer Centre performance) directly translating into improved cancer outcomes for many tumour sites and provides essential pre-treatment planning pathway resilience. We therefore recommend that WGov supports this investment proposal.

.....  
Ms Ceri Gimblett, Interim Service Director, Singleton & Neath Port Talbot Hospitals Service Delivery Group, SBUHB

## 2 Strategic Context

### 2.1 Introduction

This section outlines the strategic context for this investment.

### 2.2 Local and National Context

The Health Board's strategic response to access pressures is outlined in '*Changing for the Future*,' which references the Health Board's strategic vision for its three acute sites is as follows:



**Singleton Hospital** as a centre of excellence cancer centre and elective surgical centre for all other surgery that does not require the high-level clinical infrastructure provided at Morriston Hospital – planned care (eyes and cold elective), **cancer care**, maternity (births and neonates) and diagnostics.

**Morriston Hospital** as the centre of excellence for emergency and complex care for medical and surgical patients for our population along with delivering sustainable tertiary services for a broader population base.

**Neath Port Talbot Hospital (NPTH)** as a centre for excellence elective care centre, primarily focusing on orthopaedic, spinal and urology care.

This investment addresses and aligns with the following NHS Wales' strategies, guidance, and ambitions:

- The Service Specification for External Beam Radiotherapy Services in Wales set out standards ensuring best patient care and the necessary infrastructure<sup>2</sup>.
- Six Goals for Urgent Emergency Care
- The Quality Statement for Cancer
- National Clinical Framework
- The Duty of Quality Statutory Guidance 2023
- Health and Care Quality Standards 2023
- Value Based Health Care
- A Cancer Improvement Plan for NHS Wales 2023-2026

This investment supports the following regional and local strategies, plans and drivers for change and delivery of the main benefits:

**Figure 3 – Key Drivers**



This investment supports The Well-Being and Future Generations Act by:

- Improving the wellbeing of the population Wales by providing access to modern cancer planning infrastructure to support cancer treatment
- Investing in high-level technology, which will make a real difference to improving cancer patients' health and keeping them well, whilst allowing our staff to work more effectively

<sup>2</sup> [executive.nhs.wales/functions/networks-and-planning/cancer/clinical-hub/radiotherapy/radiotherapy-accordion/service-specs/service-specification-of-external-beam-radiotherapy-services-eng/](https://executive.nhs.wales/functions/networks-and-planning/cancer/clinical-hub/radiotherapy/radiotherapy-accordion/service-specs/service-specification-of-external-beam-radiotherapy-services-eng/)

- Supporting a resilient service model through collaboration with other Health Boards and by meeting demand from across South-West Wales

It supports A Healthier Wales long term plans for health & social care by:

- Meeting national well-being goals
- Improving people's physical wellbeing and maximising their mental health by promoting a 'person centred' service, which helps them to stay well or by the very least, to live the best life possible
- Supporting treatment and planned care services that work well

It supports delivery of Wales' Cancer targets by maintaining a more resilient continuum of care for cancer patients.

In 2023, SBUHB and HDdUHB approved the Strategic Programme Case (SPC) for the South West Wales Cancer Centre (SWWCC) for the period 2023/2024 – 2032/2033 to support regional non-surgical oncology service. The SPC acts as an overarching framework to develop further business cases and service plans to ensure that all patients across the region receive the services they deserve. It specifically references radiotherapy and oncology outpatients as cancer treatment services which require development of regional service models, and joint business cases for investment as required in the next 10 years. This business case is the first major capital investment requirement outlined in the SPC.

## 2.3 Health Board Context

### Swansea Bay University Health Board

Swansea Bay UHB plans, secures, and delivers healthcare services for the people of Neath Port Talbot and Swansea, and works to improve their health and wellbeing. It serves a population of 390,000, have a budget of around £1.1 billion and employ 12,500 staff.

The Health Board has three major hospitals providing a range of services: Morriston and Singleton hospitals in Swansea and Neath Port Talbot Hospital in Baglan, Port Talbot. It has a community hospital at Gorseinon and Primary Care Resource Centres providing clinical services outside of the main hospitals. It provides Adult Mental Health assessment and treatment in-patient services, Older Persons assessment and Adult Rehabilitation and Step-Down services. Low Secure and Medium Secure mental health units are sited at Glanrhyd Hospital, Bridgend, and commissions Psychiatric Intensive Care (PICU) services from the Princess of Wales Hospital, Bridgend. It provides regional forensic mental health services and community based mental health and learning disability assessment and continuing care services. It provides more than 70 specialised services to the populations of South West Wales, South Wales, and for certain services, on a national basis. Primary care independent contractors play an essential role in the care of our population, and the Health Board commissions services from 49 GP practices, 31 optometry practices, 72 dental practices and 92 community pharmacies across our region.

The Singleton Hospital site hosts the SWWCC, a centre of excellence cancer centre and elective surgical centre for all other surgery that does not require the high-level clinical infrastructure, i.e. planned care (eyes and cold elective), cancer care, maternity (births and neonates) and diagnostics. See **Appendix A Estates Annexe A1 Executive Summary**.

### Hywel Dda University Health Board

Hywel Dda UHB plans and provides healthcare services for people in Carmarthenshire, Ceredigion, Pembrokeshire and its bordering counties. Currently it has a budget of over £1 billion and employs 13,143 members of staff providing primary, community, in-hospital, mental health and learning disabilities authorities and public, private and third sector colleagues, including volunteer services in partnership with three local authorities for approximately 382,518 people across a quarter of the landmass of Wales through:

- Four main hospitals: Bronglais General in Aberystwyth, Glangwili General in Carmarthen, Prince Philip in Llanelli and Wityhush General in Haverfordwest
- Seven community hospitals: Amman Valley and Llandovery in Carmarthenshire; Tregaron, Aberaeron and Cardigan in Ceredigion; and Tenby and South Pembrokeshire Hospital Health and Social Care Resource Centre in Pembrokeshire

48 general practices (four of which are managed practices), 40 dental practices (including three orthodontic), 97 community pharmacies, 44 general ophthalmic practices (44 providing Eye Health Examination Wales and 29 low vision services) and 17 domiciliary only providers and 11 health centres. Numerous locations providing mental health and learning disabilities services.

## 2.4 Population

The following table provides the population statistics for Wales, SBUHB and HDUHB:

**Figure 4 – Population Base (as at Mid-Year 2022)**

Key Statistics	Wales	HDUHB	SBUHB
<b>Total population</b>	<b>3,131,640</b>	<b>385,094</b>	<b>383,440</b>
% Population aged 65 to 74	11.28%	13.35%	10.88%
% Population aged 75 to 83	7.52%	8.93%	7.29%
% Population aged 85 and over	2.72%	3.20%	2.75%
<b>% Total Population aged 65 and over</b>	<b>21.51%</b>	<b>24.48%</b>	<b>20.92%</b>

Source: StatsWales.gov

The population of Wales is expected to grow to 3,423,359 by 2046 (6.49%).

## 2.5 Health Status

The following table provides the latest health statistics for Wales, and HDUHB's and SBUHB's populations:

**Figure 5 – Morbidity**

Key Statistics	Wales	HDUHB	SBUHB
Life expectancy at birth (males)	78.3 years	79.2 years	77.4 years
Health Life Expectancy (males)	65.3 years	66.2 years	63.9 years
Life expectancy at birth (females)	82.3 years	82.9 years	81.7 years
Health Life Expectancy (females)	66.7 years	67.6 years	65.0 years
Working age adults overweight or obese	62.00%	63.00%	62.00%
Adults who smoke	13.00%	12.00%	14.00%

Source: StatsWales.gov

The incidence of cancer is increasing. In particular, the rising incidence of cancer and an ageing population (many of whom experience multiple health conditions as they age) is a major issue.

## 2.6 Case for Change

In outlining the case for investment this section highlights the importance of increasing permanent CT scanning capacity within the South West Wales region.

Demand for CT simulation scans increased from approx. 1,600 patients p.a. in South and West Wales pre-Covid to 2,278 patients (requiring 2,688 scans) in 2023/24, post the introduction of hypofractionation (a treatment schedule in which the total dose of radiation is divided into large doses and treatments are given less often per week). Demand for scans is continuing to increase. As at May 2024, the forecast activity for 2024/25 was c3,000 scans.

Capacity already exceeds best practice - most centres in England treating more than 2,000 patients' p.a. have two CT-Sims.

Historically, the SWWCC has had two CT Simulators to support demand: one modern CT-Sim and one conventional CT simulator. As technology has progressed the conventional simulator was no longer fit for purpose for more complex procedures and decommissioned as recommended by the manufacturer. However, in response to the breakdown of the modern CT in June 2023 its operation was temporarily extended to December 2024 to provide limited resilience should the existing CT breakdown again. The SWWCC, therefore, currently has only one CT-Sim capable of complex treatment planning, which limits our ability to achieve Time to RT performance targets - current performance is 15% for the 14 day pathway with the average reported wait times for a CT planning scan of 3-7 days during 2022 and 2023 for a Radiotherapy CT-Scan (the ideal, is 2 days for majority of types of treatment)

Utilising a single CT-Sim scanner for all patients' needing Radiotherapy is a critical single point of failure within the current pathway. When the CT-Sim is out of use, patients cannot be scanned at all, and therefore cannot commence their pathway. A recent significant breakdown resulted in patients being unable to start their Radiotherapy, profoundly impacting RT performance. Recent reviews by Health Inspectorate Wales Inspection (Sept 2021) and The Wales Cancer Network Peer Review (June 2022) supported investing in a

2<sup>nd</sup> permanent CT to improve resilience. The pressing need for resilience was supported in *The Service Specification for External Beam Radiotherapy Services for the in Wales*<sup>3</sup>.

The introduction of AI software would allow many more Organs to be outlined automatically, some may require editing, but this is overall a time reduction. Multi-professional workforce can be entitled to review and approve these outlines, whilst at the same time preparing safer treatments of higher quality minimising RT side-effects. AI would have the additional benefit of ensuring a consistent quality of treatment, reducing unnecessary variation of Modern RT treatment plans and decrease errors. This would also enable service development and Research and Clinical Trial participation.

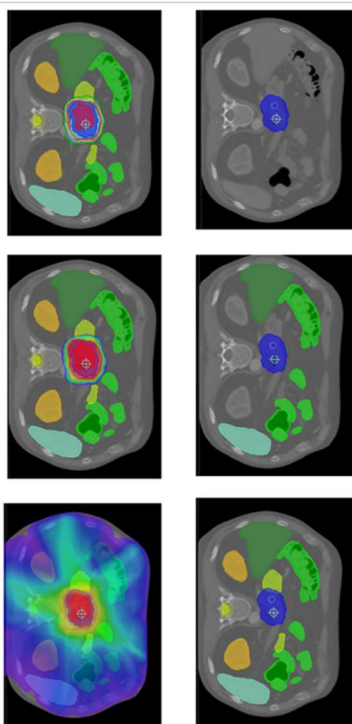
The shortage of Clinical Oncologists (and non-medical staff) will be in part mitigated by the adoption of AI technology. It is important to note the Clinical Oncologist will still retain oversight of the pathway and the quality of treatment. The current pathway shows two main areas where there is significant call on Clinical Oncologist time. Current pathway analysis shows significant reduction on Oncologist time could be made with the introduction of AI based localisation software.

## 2.7 Business Needs

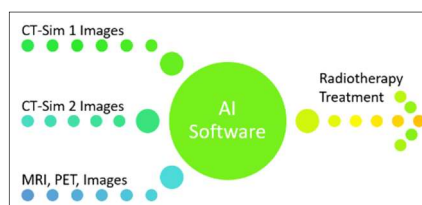
### CT-Sim Scans

A CT-Sim planning scan is an essential component of the Radiotherapy patient pathway. To provide the population served by the SWWCC with a resilient CT-Sim service it needs access to a 2<sup>nd</sup> permanent CT-Sim with supporting Artificial Intelligence (AI) to meet current and forecast demand for cancer treatment. Investment in a second permanent CT-Sim would support achievement of RT performance targets and improve resilience, meet current and future demand, improve patient safety, and improve the patient experience by reducing risk of treatment delays, ultimately translating into improved cancer outcomes comparable to international data.

### Artificial Intelligence (AI)



AI based delineation auto-segmentation software sits at the next step along the pathway from taking the CT-Simulator imaging, and is to be used to automate the outlining of the critical Organs at Risk (OARs) near to the tumour.



This allows the RT Plan to be automatically optimised to increase the radiation dose to the tumour and reduce the risk of side effects to the nearby organs as much as possible. Currently outlining the nearby Organs at Risk is a timely, manual process, and therefore the number of outlines is limited.

The AI outlining software will reduce the time taken to outlining the OARs, and allow additional OARs to be delineated, thereby improving outcomes and quality of treatments. See (figure to the left), which illustrates the potential of AI to delineate more OARs and improve the dose to the tumour (shown in blue).

Investment in AI software would support both the current and new CT-Sim, would improve quality of treatments and clinical efficiencies (AI software capability would be extended to both machines), and reduce workforce pressures.

<sup>3</sup> [executive.nhs.wales/functions/networks-and-planning/cancer/clinical-hub/radiotherapy/radiotherapy-accordion/service-specs/service-specification-of-external-beam-radiotherapy-services-eng/](https://www.executive.nhs.wales/functions/networks-and-planning/cancer/clinical-hub/radiotherapy/radiotherapy-accordion/service-specs/service-specification-of-external-beam-radiotherapy-services-eng/)

## 2.8 Problems with Status Quo

Historically, capacity in Radiotherapy has been an issue with the availability for a CT planning scan and treatment capacity being one of the main reasons patients breach their wait time target.

The SWWCC has seen the highest increase in breast cancer patients, this has an impact on any previous efficiencies in capacity we achieved through hypo-fractionating treatment. During 2022/23 it was anticipated 50% patients would be eligible for breast hypofractionation - we are now seeing 90% of patients being eligible and receiving 5 RT treatments instead of 15. Whilst hypofractionation increases the capacity of patients able to be treated on the treatment Linacs, it does not increase the capacity of the CT-Sim to scan these patients for planning and thereby increases the demand on the CT-Sim scanner

All other options for increasing CT having been explored, we have re-commissioned an older CT-Sim as an interim measure but cannot use this beyond end of 2024. All clinical efficiencies have been maximised. Weekend working is in place for other elements of the Radiotherapy service, and so there no resources to run the CT scanner for 7 days. Out of hours working is currently undertaken for Quality Assurance, Training and R&D. If we were to run the existing scanner longer, we would incur increased bottlenecks as and when demand varies, and breakdowns then prove to be crippling.

The SWWCC currently has 2 quality related risks on its risk register, both relating to service delivery:

- **Datix ID no. 2599** (risk rating 20) is specific to RT delivery and verification of radiation dose. The main element of the risk is due to the department relying 100% on only one CT with the technological advances required for complex RT planning.
- **Datix ID no. 89** (risk rating 15) relates to Clinical Risk of target breaches in the provision of radical radiotherapy treatment. Risk of target breaches occurring will increase significantly once the temporarily re-commissioned older CT-Sim is no longer in service (a single CT is a single point of failure in the RT department and has implications on achievement of 14-day targets).

## 2.9 Workforce

The workforce model is based on the following assumptions:

- Medical staff & Radiotherapy Physics staff work closely with the radiotherapy team, there should be only positive impact on both groups.
- The additional WTE required to operate at various capacity options is included in the Appendix G. The example below of operating at 50% capacity requires an additional 9.40 WTE:

Department	Description	Band	50% Capacity
			WTE
Medical Physics	Dosimetrist	Band 7	1.00
Medical Physics	Dosimetrist	Band 5	2.00
Medical Physics	Healthcare Scientist	Band 7	0.20
Medical Physics	Medical Physics Experts	Band 8a	0.20
Radiotherapy	Radiographer	Band 7	2.50
Radiotherapy	Radiographer	Band 6	1.00
Radiotherapy	Radiographer	Band 5	2.00
Oncology	Oncology	Consultant	0.50
<b>Total</b>			<b>9.40</b>

All posts will be recruited through the usual processes.

The clinical team see no difficulties recruiting to these posts.

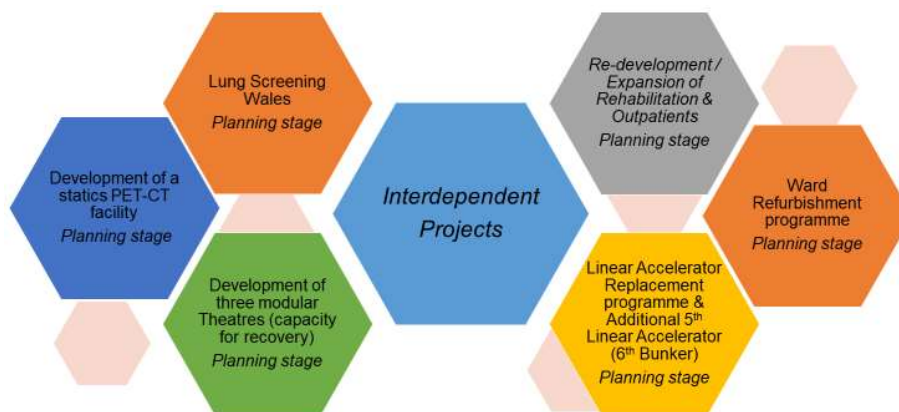
Oncology, Radiotherapy and Medical Physics are actively engaged in national training programmes.

This equipment is expected to match existing equipment, and so skills will be transferrable between machines. Therefore, training can be completed by the manufacturer and existing internal processes. This means no skill gaps, and optimised clinical usage and efficiency

## 2.10 Interdependencies

The interdependent projects are as follows:

**Figure 6 – Interdependencies**



Critical interdependencies include the planned expansion of Lin Acc capacity with the planned development of a 5<sup>th</sup> machine, which efficacy as a treatment tool is dependent upon CT-Sim treatment planning. The development of a static PET CT facility in a new build extension to the SWWCC will need to co-ordinated with other internal developments such as this project, to avoid disruption of service delivery. The introduction of Lung Screening in Wales in could increase demand for CT-Sim scans as part of the cancer pathway. The other projects and programmes indicated support development of the Singleton Hospital as a centre of excellence and improve overall condition of the estate.

## 2.11 Spend Objectives

The key spend objectives supports SBU and HDU Health Boards' business needs by increasing CT-Sim capacity within the region. These objectives align with NHS Infrastructure Investment Guidance objectives and criteria. In particular, they align with SBU's strategic response to access pressures as set out in "Changing for the Future" which references Singleton Hospital's role as a centre of excellence for planned care, cancer care, maternity, and diagnostics. The spend objectives have been identified as follows:

**Figure 7 – Spend Objectives**

<b>Spend Objective 1: To increase Resilience of the SWWCC’s RT infrastructure</b>	
Specific	<p>A 2<sup>nd</sup> permanent additional CT-Sim we will:</p> <ul style="list-style-type: none"> <li>• Increase capacity to support planned activity minimum 2,900 to maximum 3,500 patients’ p.a.</li> <li>• Additional capacity supports planned Lung Screening projected activity</li> </ul>
Measurable	<p>Evidenced by:</p> <ul style="list-style-type: none"> <li>• Increasing capacity from baseline 2,100 patients’ p.a. to minimum 2,900 (to support hyperfractionation) to maximum 3,500 patients’ p.a.</li> <li>• Complying with best national best practice recommendations by providing two modern CT-Sim machines</li> <li>• Providing fully compliant supporting estate infrastructure and a high-quality environment</li> <li>• Meeting WHBN/WHTM design and technical standards’ requirements</li> <li>• Reduced no. of breaches above baseline</li> </ul>
Achievable	Provide access to a second CT-Sim & AI software service
Relevant	<p>This objective delivers the following:</p> <p><b>Health Gain</b></p> <ul style="list-style-type: none"> <li>• Quality - facilitates high standards of patient care</li> <li>• Improves our performance against international Health Outcomes for cancer patients by providing more appropriate and effective cancer treatment planning services</li> <li>• Provides additional permanent CT-Sim Capacity will allow the SWWCC to meet demand for the next 10 years, subject to emerging technologies and best practice</li> </ul> <p><b>Clinical &amp; Skills Sustainability</b></p> <ul style="list-style-type: none"> <li>• Supports Clinical and Skills Sustainability within cancer services</li> <li>• Improves the resilience of the SWWCC CT-Sim service</li> <li>• Improves the patient experience, by e.g., providing tattoo-less treatment treatments</li> <li>• Improves Clinical Safety - adoption of AI outlining software supports safer safe way of working reducing risk</li> </ul> <p><b>Equity</b></p> <ul style="list-style-type: none"> <li>• Improves Equity of Access within the region to high-quality diagnostic and cancer treatment and treatment planning services</li> <li>• Allows expansion of current hours of delivery</li> </ul>
Time-bound	This objective will be fully realised on the second CT-Sim being operational
<b>Spend Objective 2: To improve the SWWCC’s RT Quality of service to improve Quality and Safety of Services by reducing time to RT and breaches in RT targets</b>	
Specific	<p>A 2<sup>nd</sup> permanent additional CT-Sim we will:</p> <ul style="list-style-type: none"> <li>• Increase capacity to support planned activity minimum 2,900 to maximum 3,500 patients’ p.a.</li> <li>• Reduce clinical risk by eliminating a single point of failure</li> <li>• Improve the patient experience by providing regional access to high quality treatment planning</li> <li>• Enhance the SWWCC’s reputation as a regional centre of excellence for cancer services</li> <li>• Provide access to modern infrastructure that complies with best practice</li> <li>• Improve speed of access to CT-Scans</li> <li>• Provide higher quality scans (current older temporary scanner provides limited functionality)</li> </ul>

Measurable	Evidenced by: <ul style="list-style-type: none"> <li>Accessing a modern CT-Sim service with AI capability</li> <li>Ensuring the SWWCC has sufficient current and future CT-Sim capacity (sufficient for next 10 years, subject to emerging technologies and best practice)</li> <li>Improving RTT performance above baseline</li> <li>Improving quality or pre-planning work</li> </ul>
Achievable	Provide access to a second CT-Sim & AI software service
Relevant	This objective delivers the following: <p><b>Health Gain</b></p> <ul style="list-style-type: none"> <li>Quality - facilitates high standards of patient care</li> <li>Improves our performance against international Health Outcomes for cancer patients by providing more appropriate and effective cancer treatment planning services</li> <li>Provides additional permanent CT-Sim Capacity will allow the SWWCC to meet demand for the next 10 years, subject to emerging technologies and best practice</li> </ul> <p><b>Clinical &amp; Skills Sustainability</b></p> <ul style="list-style-type: none"> <li>Supports Clinical and Skills Sustainability within cancer services</li> <li>Improves the resilience of the SWWCC CT-Sim service</li> <li>Improves the patient experience, by e.g., providing tattoo-less treatment treatments</li> <li>Improves Clinical Safety - adoption of AI outlining software supports safer safe way of working reducing risk</li> </ul>
Time-bound	This objective will be fully realised 12 months from the second CT-Sim being operational
<b>Spend Objective 3: To improve the SWWCC's RT service efficiencies</b>	
Specific	A 2 <sup>nd</sup> permanent additional CT-Sim we will: <ul style="list-style-type: none"> <li>Improve RT performance against All Wales Radiotherapy Quality Metrics' including 14-day targets, reducing time to RT rates</li> <li>Reduce number of RT target breaches against baseline</li> <li>Mitigates loss of unused Linac capacity above baseline</li> </ul>
Measurable	Evidenced by: <ul style="list-style-type: none"> <li>Achieving, e.g., the 14-day target for 80% of our patients (currently only 20% meet this target)</li> <li>Improving the time to CT scan part of the patient pathway by providing access to modern CT-Sim infrastructure and AI Software</li> <li>Reducing current Radiotherapy Pathways by 2 days in line with best practice and WGov's Quality Metric for Cancer Centre performance (i.e., from 20 days to 18 days) with more patients moving towards compliance</li> <li>Reducing Outlining of patients from 14 to 8 days</li> </ul>
Achievable	Provide access to a second CT-Sim & AI software service.

Relevant	<p>This objective delivers the following:</p> <p><b>Health Gain</b></p> <ul style="list-style-type: none"> <li>Quality - facilitates high standards of patient care</li> <li>Improves our performance against international Health Outcomes for cancer patients by providing more appropriate and effective cancer treatment planning services</li> <li>Provides additional permanent CT-Sim Capacity will allow the SWWCC to meet demand for the next 10 years, subject to emerging technologies and best practice</li> </ul> <p><b>Clinical &amp; Skills Sustainability</b></p> <ul style="list-style-type: none"> <li>Supports Clinical and Skills Sustainability within cancer services</li> <li>Improves the resilience of the SWWCC CT-Sim service</li> <li>Improves the patient experience, by e.g., providing tattoo-less treatment treatments</li> <li>Improves Clinical Safety - adoption of AI outlining software supports safer safe way of working reducing risk</li> </ul>
Time-bound	This objective will be fully realised 12 months from the second CT-Sim being operational
<b>Spend Objective 4: To improve the SWWCC's RT service effectiveness</b>	
Specific	<p>A 2<sup>nd</sup> permanent additional CT-Sim we will:</p> <ul style="list-style-type: none"> <li>Provide the South West Wales region's population with access to two modern CT-Sims capable of supporting complex treatments</li> <li>Provide more opportunities for Research and Clinical Trial participation</li> </ul>
Measurable	<p>Evidenced by:</p> <ul style="list-style-type: none"> <li>Providing fully compliant clinical services</li> <li>Modern technology providing increased opportunities for Research and Clinical Trial participation above baseline</li> </ul>
Achievable	Provide access to a second CT-Sim & AI software service.
Relevant	<p>This objective delivers the following:</p> <p><b>Health Gain</b></p> <ul style="list-style-type: none"> <li>Quality - facilitates high standards of patient care</li> <li>Improves our performance against international Health Outcomes for cancer patients by providing more appropriate and effective cancer treatment planning services</li> <li>Provides additional permanent CT-Sim Capacity will allow the SWWCC to meet demand for the next 10 years, subject to emerging technologies and best practice</li> </ul> <p><b>Clinical &amp; Skills Sustainability</b></p> <ul style="list-style-type: none"> <li>Supports Clinical and Skills Sustainability within cancer services</li> <li>Improves the resilience of the SWWCC CT-Sim service</li> <li>Improves the patient experience, by e.g., providing tattoo-less treatment treatments</li> <li>Improves Clinical Safety - adoption of AI outlining software supports safer safe way of working reducing risk</li> </ul> <p><b>Equity</b></p> <ul style="list-style-type: none"> <li>Improves Equity of Access within the region to high-quality diagnostic and cancer treatment and treatment planning services</li> </ul>
Time-bound	This objective will be fully realised 12 months from the second CT-Sim being operational

<b>Spend Objective 5: To improve the SWWCC's RT service economies</b>	
Specific	A 2 <sup>nd</sup> permanent additional CT-Sim we will: <ul style="list-style-type: none"> <li>• Provide innovative AI software, which will reduce Clinical Oncologist and non-medical staff (Radiotherapy Physics) time spent undertaking Outlining targets and Organs at risk</li> </ul>
Measurable	Evidenced by: <ul style="list-style-type: none"> <li>• Achieving a reduction in Clinical Oncologists &amp; Radiologists time (NCRB)</li> <li>• Supporting cost avoidance and promoting time saving opportunities</li> <li>• Improving VfM of Linear Accelerators by providing more timely and reliable pre-planning support</li> </ul>
Achievable	Provide access to a second CT-Sim & AI software service.
Relevant	This objective delivers the following: <b>Value for Money</b> <ul style="list-style-type: none"> <li>• Achieving a reduction in Clinical Oncologists', RT and Dosimetrists' time (NCRBs)</li> <li>• Supporting cost avoidance and promoting time saving opportunities</li> <li>• Improving VfM of Linear Accelerators by mitigating loss of Linac capacity.</li> </ul>
Time-bound	This objective will be fully realised 12 months from the second CT-Sim being operational

All the above to be achieved in 1<sup>st</sup> Qtr 2025 and for operational benefits to be evidenced in 2026/27, subject to funding and planning approvals. There are no potential dis-benefits.

## 2.12 Potential Scope

This section describes the potential scope for the project in relation to the above business needs in terms of modalities and service drivers. Potential Service Scope solutions for this investment are limited to the following options:

**Figure 8 - Potential Service Scope Framework Options**

Business as Usual	Do Minimum
No change to the SWWCC's single permanent CT-Sim Service Model – SWWCC service has poor resilience and is unable to meet South West Wales' populations' CT Radiotherapy planning needs	Provide a more resilient CT-Sim service in the SWWCC, ensuring there is sufficient capacity to meet the future CT Radiotherapy planning needs of South West Wales' population

## 2.13 Main Benefits

The main benefits in terms of Quantifiable (Q), Non-Quantifiable (NQ), Cash Releasing (CR), Non-Cash Releasing (NCR) benefits of this investment are as follows:

**Figure 9 – Benefit Category and Key Benefits**

Benefit Category	Stakeholder Group	Key Benefits	Type of Benefit
1. Health Gain	Patients Health Board/Staff Wider Community	<ul style="list-style-type: none"> <li>Increases capacity to support planned activity minimum 2,900 to maximum 3,500 patients' p.a.</li> </ul>	Q NCR
		<ul style="list-style-type: none"> <li>Service is supported to improve compliance for 80% of 14-day target (to 25-35% compliance over current 15% baseline)</li> </ul>	Q NCR
2. Clinical and Skills Sustainability	Patients Health Board/Staff Wider Community	<ul style="list-style-type: none"> <li>Eliminates breaches that occur within the CT-Sim part of the pathway</li> </ul>	Q NCR
		<ul style="list-style-type: none"> <li>Supports reduction in Book RT Data Export step from current 9 days to 4 days</li> </ul>	Q NCR
		<ul style="list-style-type: none"> <li>Mitigates risk by eliminating CT Sim single point of failure</li> </ul>	Q NCR
		<ul style="list-style-type: none"> <li>Reduces radiation risk to patients, per best practice</li> </ul>	NQ NCR
3. Equity	Patients Health Board/Staff Wider Community	<ul style="list-style-type: none"> <li>Improves Equity of Access within the region to high-quality diagnostic and cancer treatment and treatment planning services</li> </ul>	Q NCR
4. Value for Money	Health Board/Staff	<ul style="list-style-type: none"> <li>Utilises AI to achieve more effective use of Clinical Oncologists &amp; Radiologists time (and reduce overall pathway by 3 days)</li> <li>Improves VfM of Linear Accelerators by mitigating loss of Linac capacity</li> </ul>	NQ NCR
	Wider Community	<ul style="list-style-type: none"> <li>Supports Achievement of NHS Net Zero Carbon targets</li> </ul>	Q NCR

Please see **Appendix B** for the detailed Benefits Register.

## 2.14 Main Risks

The main risks and mitigations are outlined below:

**Figure 10 - Main Risks**

<b>Risk</b>	<b>Risk Rating Probability x Impact</b>	<b>Management Action</b>
Risk that capital funding will not be approved on a timely basis	2 x 3 (6)	Ongoing liaison with WGov. This project is a high priority for the Health Board / Region. Considered low/medium risk.
Risk that workforce will not be in place	2 x 2 (4)	All posts will be recruited through the usual processes. The clinical team see no difficulties recruiting to these posts. Considered low risk.
Risk that the service model will change	2 x 2 (4)	This project plays a key role on cancer planning for the regional population. Considered low risk.

See **Appendix A Estates Annexe A5** Risk Register.

## 2.15 Constraints and Dependencies

The constraints and dependencies are as follows:

- The solution must be fit for purpose, make best use of the available development space, and be delivered on a timely basis.
- Develop workforce plan and ensure that workforce requirements and training plans are in place to support the development.
- Capital and revenue resources are limited, and the solution should provide value for money, support clinical needs, and be affordable.
- The availability of capital funding from WGov.
- The project must be delivered within project budget.
- Continued support for the agreed model of care.

## 3 The Economic Case

### 3.1 Introduction

This section of the business case demonstrates that the most economically advantageous option has been selected.

### 3.2 Critical Success Factors

The following Critical Success Factors (CSFs) have been identified:

**Figure 11 – Critical Success Factors (CSFs)**

CSF	Description
CSF1 Strategic Fit & Business Needs	The solution must fit with national, regional, local strategies.
CSF2 Compliance	The solution must comply with best practice.
CSF3 Benefits Optimisation	The solution should optimise benefits, make effective use of scarce resources, and provide value for money.
CSF4 Potential Achievability	The solution must be deliverable on a timely basis to avoid disruption of clinical services.
CSF5 Acceptability	The solution must be acceptable to users and clinicians.
CSF6 Potential Affordability	The organisation's ability to fund the required level of expenditure; viz, the capital and revenue consequences associated with the proposed investment.

### 3.3 Framework Option Appraisal

#### Long List Options

In accordance with WGov's Infrastructure Investment Board's & HMT's Treasury Green Book guidance Project Board members completed a hi-level SWOT-style analysis of the long list options. An option scored 'x' if it failed to deliver on an SO or CSF, '~' if it partially delivered, and '✓' if it fully delivered as follows:

Key:	X Not Achieved	~ Partially achieved	✓ Fully achieved
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Options 'scored' multiples of '✓' if an option optimally delivered on an updated Spend Objective or CSF. The pros and cons for each long list option were recorded to provide an audit trail and the options were ranked in order of achievement, indicating the 'preferred' solution and 'do less' or 'do more ambitious' solutions as appropriate. Four options were identified and taken forward for detailed financial analysis.

In accordance with HM Treasury's Green Book and WGov business case guidance the five categories of framework options in terms of choice are as follows:

- **Potential Service Scope Options** – what is the potential coverage of the service to be delivered (the 'what');
- **Potential Service / Technical Solution Options** – potential options for delivering the preferred service scope option (the 'how');
- **Potential Service Delivery Options** – who will deliver the preferred scope & preferred service / technical solution options (the 'who');
- **Potential Service Implementation Options** – potential timescales options for delivering the preferred scope, preferred service / technical solution, and preferred delivery options (the 'when');
- **Potential Finance Options** – potential funding and affordability options for delivering the preferred scope, preferred service / technical solution, preferred delivery preferred implementation options.

The framework options were agreed by the Project Board's members as follows given the need to locate the second permanent CT-Sim within the SWWCC's footprint the range of each option was limited to the following in scope:

**Figure 12 – Service Scope Options**

Business As Usual	Do Minimum
No change to the SWWCC's single permanent CT-Sim Service Model – SWWCC service has poor resilience and is unable to meet South West Wales' populations' CT Radiotherapy planning needs	Provide a more resilient CT-Sim service in the SWWCC, ensuring there is sufficient capacity to meet the future CT Radiotherapy planning needs of South West Wales' population
Discount	Preferred

The service solutions identified potential options for delivering the preferred service scope option. They were agreed as follows:

**Figure 13 – Service Solutions Options**

Do Minimum	Do Maximum
Invest in a permanent second CT-Sim at Singleton Hospital	Invest in a permanent second CT-Sim and AI Software at Singleton Hospital
Possible	Preferred

### Long list options

Following detailed non-financial evaluation, the available shortlisted framework options were agreed as follow:

**Figure 14 – Framework Long List Options**

Framework Options	Business As Usual	Do Minimum	Do Maximum
Service Scope Options	No change to the SWWCC's single permanent CT-Sim Service Model – SWWCC service has poor resilience and is unable to meet South West Wales' populations' CT Radiotherapy planning needs	Provide a more resilient CT-Sim service in the SWWCC, ensuring there is sufficient capacity to meet the future CT Radiotherapy planning needs of South West Wales' population	
	Discount (retained as Baseline Comparator)	Preferred	
Service Solutions Options		Invest in a second permanent CT-Sim at Singleton Hospital	Invest in a second permanent CT-Sim and AI Software at Singleton Hospital
		Discount	Preferred
Implementing Service Solution	A single phased		
Delivery Service Solution	NHS staffed		
Funding Service Solution	Capital funded		

The Steering Board's members identified only one viable means for implementing, delivering, and funding the preferred service solution, technical solution, and implementation solution – a single phased, NHS staffed, and Capital funded solution.

### Short list options

Following detailed non-financial evaluation, the available options were agreed as follow:

**Figure 15 – Short Listed Option Findings**

Option	Reason for Acceptance or Rejection for further consideration	Finding
<b>Option 1 – Business as Usual:</b> No change to the SWWCC's single permanent CT-Sim Service Model – SWWCC service has poor resilience and is unable to meet South West Wales' populations' CT Radiotherapy planning needs	Fails to deliver required Spend Objectives of CSFs. Fails to improve SWWCC's CT-Sim services' resilience and meet forecast demand.	Discounted (retained as Baseline Comparator)
<b>Option 2: Do Minimum:</b> Provide a more resilient CT-Sim service in the SWWCC, ensuring there is sufficient capacity to meet	Delivers most the required Spend Objectives and all the CSFs. Improves SWWCC's CT-Sim services' resilience,	Discounted

Option	Reason for Acceptance or Rejection for further consideration	Finding
the future CT Radiotherapy planning needs of South West Wales' population by investing in a <b>permanent second CT-Sim</b> at Singleton Hospital	meets forecast demand and, reduces RT patients' pathways	
<b>Option 3: Do Maximum:</b> Provide a more resilient CT-Sim service in the SWWCC, ensuring there is sufficient capacity to meet the future CT Radiotherapy planning needs of South West Wales' population by in a <b>permanent second CT-Sim and AI Software</b> at Singleton Hospital	Delivers all the required Spend Objectives and all the CSFs. Improves SWWCC's CT-Sim services' resilience, meets forecast demand, and further reduces RT patients' pathways compared with a non-AI Software solution	Preferred

- **Option 1** (Business as Usual - Single CT-Sim Service Model) was **discounted** but was retained as the Baseline Comparator.
- **Option 2** (Do Minimum - Develop a second permanent CT-Sim at Singleton Hospital) was **discounted** as it provides a less than optimum clinical solution and patient benefits.
- **Option 3** (Do Maximum - Develop a second permanent CT-Sim and AI Software at Singleton Hospital) was optimum clinically supported solution and was confirmed as the **preferred option** and was taken forward for further evaluation.

See **Appendix E – Framework Options**.

### 3.4 Economic Appraisal

#### Capital Costs

The project's Cost Advisor, AECOM, has prepared capital costs for Option 3 (the preferred option) based on a fully tendered design. No allowance has been made for inflation. Planning contingency was estimated by AECOM at 4.99% of works, non-works, equipment and fees, a rate that is reflective of its level of design at this stage (see **Appendix A Estates Annexe A2** for the Cost Forms). The capital costs are as follows:

**Figure 16 – Capital Costs (excl VAT £000s)**

	Option 3 Preferred Option
Works	459
Fees	115
Non-Works Costs	90
Equipment Costs	1,442
Planning Contingency	105
<b>Base Project Cost</b>	<b>2,211</b>

#### Recurring Revenue Costs

##### Recurring Revenue Summary

The demand, capacity, waiting list, workforce and resulting financial revenue values have been modelled using 5 different scenarios for the new permanent CT-SIM (CT3):

Option	Description
A	Operate CT3 at 25% capacity (same as current recommissioned CT1)
B1	Operate CT3 at a capacity level to meet demand and maintain waiting list at current level (183 end of June 2024)
B2	Operate CT3 at a capacity level to meet demand and reduce waiting list to a more manageable level of c50
C	Same as option B2 up to 26/27, but no further increase in capacity above the modelled 53% to meet demand in 26/27
D	Same as option B2 up to 27/28, but no further increase in capacity above the modelled 78% to meet demand in 27/28

The modelled additional recurrent cost and associated 50/50 funding from each UHB over the modelled five-year period is shown in the table below.

CT1	New Permanent Additional CT SIM - CT3					
	Year 0 24/25	Year 1 25/26	Year 2 26/27	Year 3 27/28	Year 4 28/29	Year 5 29/30
<b>Recurrent Cost</b>	£000s	£000s	£000s	£000s	£000s	£000s
Option A	282	390	390	390	390	390
Option B1	282	420	844	1,043	1,046	1,290
Option B2	282	469	844	1,043	1,046	1,290
Option C	282	469	844	844	844	844
Option D	282	469	844	1,043	1,043	1,043
<b>50/50 Funding per UHB</b>						
Option A	141	195	195	195	195	195
Option B1	141	210	422	521	523	645
Option B2	141	235	422	521	523	645
Option C	141	235	422	422	422	422
Option D	141	235	422	521	521	521

The table below summarises all options up to 2025/26. The do-nothing option (only operate single CT-SIM CT2), results in a waiting list of 881 by the end of 2025/26 (compared to the current waiting list of 183).

Option A (minimum investment) is to continue with existing 25% additional capacity (603 scans) which costs £390k per annum and results in a waiting list of 279. Recurrent funding split 50/50 between the two UHBs = £195k per UHB. The additional funding above current CT1 funding of £262k is £64k per UHB (£195k-£131k). The main reason for the increase in cost vs current recommissioned CT1 is due to the service/maintenance contract and software costs associated with a new machine.

Option B2 (maximum investment) to meet current demand and reduce waiting list to c50 requires additional capacity of 34.5% (832 scans) which costs £469k per annum and results in a waiting list of 51. Recurrent funding of £235k per UHB is £104k above the current CT1 funding of £131k per UHB.

Current Ask to 2025/26 Recurrent Position	New Permanent Additional CT SIM - CT3			
	Do nothing	Option A	Option B1	Options B2-D
Additional Capacity %	0.0%	25.0%	29.0%	34.5%
Additional Scan Activity	0	603	699	832
Waiting List at the end of 25/26	881	279	183	51
Additional Cost £000s	n/a	£390	£420	£469
50/50 Funding per UHB £000s	n/a	£195	£210	£235

*NB. Additional funding per UHB above vs current recommissioned CT1 £131k each UHB =*                      *£64*                      *£79*                      *£104*

Given the current financial environment, based on the modelled demand and activity required to bring the waiting list down to a manageable level and associated incremental increase in cost, the preferred commissioning and funding option would be Option B2. This seeks approval to commission additional recurrent capacity and associated funding up to the different values modelled to 2025/26 for Option B2. Capacity and funding will remain at the 2025/26 modelled levels from 2025/26 onwards until such time as a future business case is put forward to commission additional capacity above those levels.

**SBUHB, all options above to 2025/26 recurrent levels of £235k are affordable within the baseline funding allocated to the Singleton and NPT Service Delivery Unit.**

**There is general support from HDd UHB for the proposal. They will need to take the recurrent revenue ask of £235k through their internal financial and Board governance during July**

#### Modelled Activity and Waiting List

The demand, current capacity (permanent CT2 and non-recurrent recommissioned CT1 during 2024/25) and resulting waiting list over the next few years is summarised in the table below.

<b>Demand, Activity &amp; Waiting List</b>	<b>Year 0 24/25</b>	<b>Year 1 25/26</b>	<b>Year 2 26/27</b>	<b>Year 3 27/28</b>	<b>Year 4 28/29</b>	<b>Year 5 29/30</b>
Baseline Demand	2,967	3,012	3,111	3,694	4,295	4,437
Annual 3.3% Growth	84	99	103	122	142	146
Stepped Growth*	0	0	480	480	0	0
<b>Total Demand</b>	<b>3,051</b>	<b>3,111</b>	<b>3,694</b>	<b>4,295</b>	<b>4,437</b>	<b>4,584</b>
Permanent CT2	2,412	2,412	2,412	2,412	2,412	2,412
Non Recurrent CT1	603	n/a	n/a	n/a	n/a	n/a
<b>Total Current Activity</b>	<b>3,015</b>	<b>2,412</b>	<b>2,412</b>	<b>2,412</b>	<b>2,412</b>	<b>2,412</b>
Opening Waiting List	147	183	881	2,163	4,047	6,072
Demand vs Activity	36	699	1,282	1,883	2,025	2,172
Closing Waiting List	183	881	2,163	4,047	6,072	8,243

\* Stepped growth for adaptive Urology in 26/27 and adaptive Head&Neck + Gynaecology in 27/28

With an opening baseline demand of c3,000 scans per annum, with 3.3% annual growth (average annual growth over the last two years) and stepped changes in service in future years, results in demand increasing from 3,051 scans in 24/25 to 3,111 in 25/26 and up to 4,584 by 29/30. Current permanent CT2 activity is 2,412 scans per annum and the recommissioned CT1 provides an additional 603 scans non recurrently in 24/25. The future demand will not be met with one permanent CT scan, which will result in a significant increase in the waiting list over the period.

The table below shows the additional capacity needed to meet the objectives of each option.

<b>Additional Capacity</b>	<b>CT1</b>	<b>New Permanent Additional CT SIM - CT3</b>				
	<b>Year 0 24/25</b>	<b>Year 1 25/26</b>	<b>Year 2 26/27</b>	<b>Year 3 27/28</b>	<b>Year 4 28/29</b>	<b>Year 5 29/30</b>
Option A	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%
Option B1	25.0%	29.0%	53.0%	78.0%	84.0%	90.0%
Option B2	25.0%	34.5%	53.0%	78.0%	84.0%	90.0%
Option C	25.0%	34.5%	53.0%	53.0%	53.0%	53.0%
Option D	25.0%	34.5%	53.0%	78.0%	78.0%	78.0%

The capacity profile for each option delivers the following additional scans and resulting waiting list.

	CT1	New Permanent Additional CT SIM - CT3				
	Year 0 24/25	Year 1 25/26	Year 2 26/27	Year 3 27/28	Year 4 28/29	Year 5 29/30
<b>Additional Scans</b>						
Option A	603	603	603	603	603	603
Option B1	603	699	1,278	1,881	2,026	2,171
Option B2	603	832	1,278	1,881	2,026	2,171
Option C	603	832	1,278	1,278	1,278	1,278
Option D	603	832	1,278	1,881	1,881	1,881
<b>Waiting List</b>						
Option A	183	279	963	2,247	3,675	5,247
Option B1	183	183	183	183	183	183
Option B2	183	51	51	51	51	51
Option C	183	51	51	651	1,395	2,283
Option D	183	51	51	51	195	483

### Revenue Cost and Funding

The future recurring revenue costs above baseline at different capacity levels up to 2025/26 levels are summarised in the table below (detail included in Appendix G).

The key revenue assumptions are as follows;

- Direct pay costs are costed using 2023/24 pay rates.
- All staffing costed at substantive rates with no allowance for any premium rates
- The pay costs for Medical Physics Dosimetrists include enhancements for permanent weekend working and the costs for Radiographers include on-call/standby payments
- AI annual software subscription costs will cover both current CT2 and additional CT3.
- All other costs are at current 2024/25 prices.

Recurrent additional cost for recurrent additional capacity % options in 2025/26	Current Baseline	Recommissioned	New Permanent CT SIM - CT3		
	CT2 100% Capacity £000s	CT1 Non Recurrent 25% Capacity £000s	Option A per CT1 (25%) £000s	Option B1 Hold WL 29% £000s	Options B2+C+D WL=50 34.5% £000s
<b>Annual Cost</b>					
Direct Pay Costs	£1,919	£172	£229	£257	£303
Direct Non Pay Costs	£314	£13	£88	£91	£93
AI Software Subscription	£0	£90	£65	£65	£65
Facilities Management Costs	£14	£7	£7	£7	£7
<b>Total/Additional Annual Cost</b>	<b>£2,248</b>	<b>£282</b>	<b>£390</b>	<b>£420</b>	<b>£469</b>
Variable non pay not included in funding		-£20			
<b>Total Additional Commissioned / Funding</b>		<b>£262</b>	<b>£390</b>	<b>£420</b>	<b>£469</b>
Additional CT3 cost % vs CT2 baseline cost			17%	19%	21%
<b>Additional Annual Funding</b>					
Hywel Dda UHB (50%)		£131	£195	£210	£235
Swansea Bay UHB (50%)		£131	£195	£210	£235
<b>Total Additional Annual Funding</b>		<b>£262</b>	<b>£390</b>	<b>£420</b>	<b>£469</b>
Additional funding above recommissioned CT1			£128	£157	£207
Additional funding above recommissioned CT1 per UHB			<b>£64</b>	<b>£79</b>	<b>£104</b>

There are economies of scale to be gained from the addition of a second permanent CT with costs increasing by a lower % than the additional capacity % being created e.g. 34.5% additional capacity from CT3 costs 21% above CT2 baseline (£0.469m/£2.248m).

The modelled cost for different capacity levels over the modelled five-year period are:

Recurrent additional cost for recurrent additional capacity % options in the future (This business case ask is to 2025/26 only)	Current Baseline CT2 100% Capacity £000s	New Permanent CT SIM - CT3					Maximum 100% £000s
		Current CT1 25% £000s	Meet demand to 25/26 29% £000s	Improve WL 25/26 34.5% £000s	Meet demand in 26/27 53% £000s	Meet demand in 27/28 78% £000s	
<b>Annual Cost</b>							
Direct Pay Costs	£1,919	£229	£257	£303	£589	£774	£1,015
Direct Non Pay Costs	£314	£88	£91	£93	£157	£171	£182
AI Software Subscription	£0	£65	£65	£65	£90	£90	£90
Facilities Management Costs	£14	£7	£7	£7	£8	£8	£8
<b>Total/Additional Annual Cost</b>	<b>£2,248</b>	<b>£390</b>	<b>£420</b>	<b>£469</b>	<b>£844</b>	<b>£1,043</b>	<b>£1,296</b>
Additional CT3 cost % vs CT2 baseline cost		17%	19%	21%	38%	46%	58%

The above table shows maximum capacity use of CT3 costs £1.296m compared to £2.248m current baseline cost for CT2 (+58% cost for +100% more capacity). This efficiency is mainly driven from workforce gains modelled from the impact of implementing artificial intelligence software across both CTs and economies of scale from operating two CTs, as demonstrated by the workforce WTE numbers below.

Workforce Efficiencies (WTEs)	Baseline CT2 100%	Additional CT3 100%	Difference Additional vs Baseline	Difference due to	
				Artificial Intelligence	Economies of Scale
Medical Physics - Dosimetrists	10.61	6.00	-4.61	-4.61	0.00
Medical Physics - Healthcare Scientists	5.00	0.40	-4.60	-1.00	-3.60
Medical Physics Experts	1.30	0.40	-0.90	0.00	-0.90
Radiographers	10.00	8.50	-1.50	0.00	-1.50
Radiographers Support (Admin)	1.00	0.00	-1.00	0.00	-1.00
Consultant Oncologist	1.00	1.00	0.00	0.00	0.00
<b>Total WTEs</b>	<b>28.91</b>	<b>16.30</b>	<b>-12.61</b>	<b>-5.61</b>	<b>-7.00</b>

The modelled additional recurrent cost and associated 50/50 funding from each UHB over the modelled five-year period is shown in the table below.

	CT1	New Permanent Additional CT SIM - CT3				
	Year 0 24/25	Year 1 25/26	Year 2 26/27	Year 3 27/28	Year 4 28/29	Year 5 29/30
<b>Recurrent Cost</b>	£000s	£000s	£000s	£000s	£000s	£000s
Option A	282	390	390	390	390	390
Option B1	282	420	844	1,043	1,046	1,290
Option B2	282	469	844	1,043	1,046	1,290
Option C	282	469	844	844	844	844
Option D	282	469	844	1,043	1,043	1,043
<b>50/50 Funding per UHB</b>						
Option A	141	195	195	195	195	195
Option B1	141	210	422	521	523	645
Option B2	141	235	422	521	523	645
Option C	141	235	422	422	422	422
Option D	141	235	422	521	521	521

### 3.5 Risk Appraisal Findings

The key risks associated with the preferred option at this stage have been assessed by an independent Cost Advisor using WGov guidance methodology for business cases. The scheme risk register reflects an assessment of the main works risks and informs this project's 'knowns' & 'unknowns' at this point in time. Risks have been apportioned to either the Health Board or private sector and mitigating strategies have been identified in the Risk Register. The risk appraisal was undertaken using the WGov's risk methodology for business cases. See **Appendix A Estates Annexe A5 Risk Register**. It included the following distinct elements: Identifying the risks and definitions for assessing options; Assessing the impact and likelihood for each option against these categories, and calculating the risk score.

The range of scales used to quantify the risk for impact and likelihood was: Low = 2; Medium = 3; High = 5

Likelihood	5	10	15	20	25
	4	8	12	16	20
	3	6	9	12	15
	2	4	6	8	10
	1	2	3	4	5
	Impact				

### 3.6 The Preferred Option

The preferred option was confirmed as Option 3 (Do Maximum i.e. develop a second permanent CT-Sim and AI Software at Singleton Hospital).

## 4 The Preferred Option

The preferred option was confirmed as Option 3 (Do Maximum i.e. develop a second permanent CT-Sim and AI Software at Singleton Hospital).



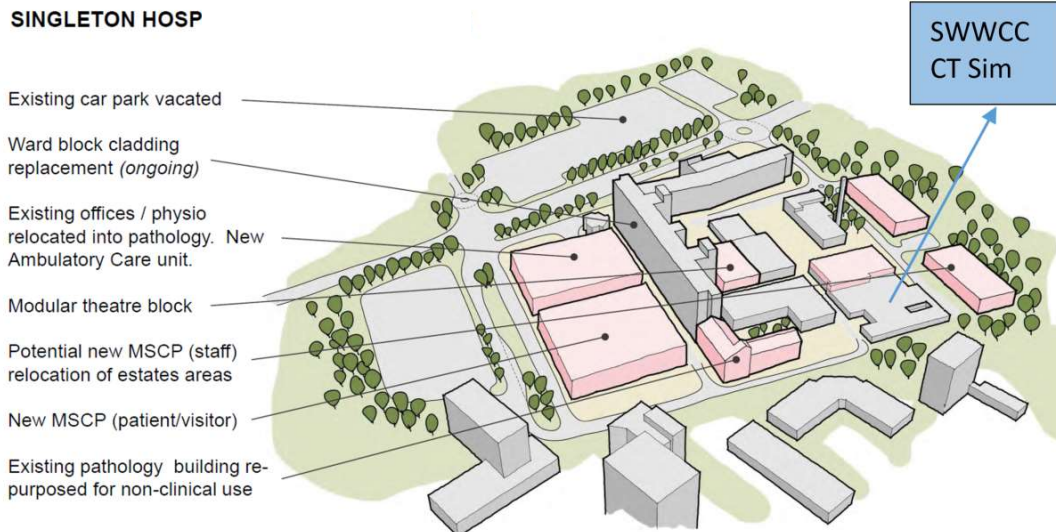
The CT-Sim environment will be designed to the latest WHBN/WHTM specification with patients at the heart of the design to ensure an improved patient experience and pathways.

See **Appendix A Estates Annexe A3** for drawings.



Environmental design is conducive to supporting patients with ambient coloured dimmable lighting and music, which promote wellbeing.

This development is within the existing SWWCC at Singleton Hospital - see *site illustration below*:



## **5 The Commercial Case**

### **5.1 Introduction**

This section of the business case outlines the proposed 'deal' as outlined in the Economic Case.

### **5.2 Procurement Strategy and Route**

The Health Board will make a direct award to provide enabling works, main works and commissioning to support delivery of a second CT-Sim.

### **5.3 Required Services**

The essential requirements to be provided as part of this contract are:

- Installation of modern CT-Sim equipment and supporting and AI software.
- Provide supporting electrical infrastructure services and IT connections.
- A transition process to ensure adjacent cancer services within the SWWCC are not disrupted during decommissioning, main works and new machine installation/commissioning stages.
- The Design Team will be required to ensure compliance with clinical and IM&T requirements to ensure compatibility with other integrated systems.

### **5.4 Key Appointments & Contract Arrangements**

The following key appointments have been made:

- Project Manager Services (to be confirmed).
- Architectural & Principal Design services are provided by Stride Treglown.
- Civils and Structural Engineering design services are provided by PHG Consulting Engineers Ltd.
- Health Board Cost Advisor services and business case support services are provided by AECOM.
- Mechanical & Electrical design services to support feasibility stage and enabling works was provided by AECOM.
- Construction and other technical commissioning services are provided by SBUHB.

If this is a capital solution, the contract will be an NEC Engineering and Construction Contract 4 with main option clause A (priced with activity schedule).

### **5.5 Required Facilities and Compliance**

The new facility will comply with Welsh Health Building Notes/Welsh Health Technical Memorandums (WHBN/WHTM). There are no derogations.

### **5.6 Potential for Risk Management**

A risk register has been compiled and costed relative to risks that apply over the whole of the project. The planning contingency includes non-recoverable VAT and excludes Optimism Bias (OB). This assessment of risk and complies with NHS Wales Shared Services Partnership – Specialist Estates Services guidance at this planning stage. See **Appendix A Estates Annexe A5** Risk Register.

### **5.7 Agreed Charging Mechanism**

A collaborative working model is to be adopted. All charging mechanisms will be covered within the Health Board's local framework agreement. AECOM, the Health Board's appointed Cost Advisor, confirms the scheme will be fully tendered. The Main Contractor will invoice SBUHB in accordance with the Payment Mechanism. The agreed Payment Mechanism is 4 weekly assessments by the Health Board Cost Advisor with payment due within 14 days of the Assessment Date.

### **5.8 Agreed Contract Length**

The contract will cover approximately 18 weeks for Enabling Works & Main Construction through to fit out of the machine and technical/operational commissioning.

### **5.9 Personnel Implications**

TUPE (Transfer of Undertaking and Protection of Employee) will not apply to this investment.

### **5.10 Accountancy Treatment**

It is assumed that public funding will be allocated for this project and therefore capital will be included on the balance sheet.

## 5.11 Indicative Timescales

The indicative milestones are set out below:

**Figure 17 – Key indicative milestones**

<b>Milestone Activity</b>	<b>Date</b>
Project Board signs off BJC	May 2024
Radiotherapy Group approved BJC	May 2024
Internal scrutiny and Health Board endorsement of the BJC	June – July 2024
Submit BJC to WGov for scrutiny and approval	July 2024
WGov approval	Sept 2024
Enter Contract	Sept 2024
Decommissioning	Sept - October 2024
Works & Installation	October 24 – Feb. 25
Clinical and Technical Commissioning	Feb. - April 25
Clinical Training	April 25
Operational	April 25
Technical Project Evaluation (approx. 3 months post new build handover)	July 25
Benefits Realisation (12 months post operational)	May 26

Please refer to **Appendix A Estates Annexe A4**.

## 6 Funding and Affordability

### 6.1 Introduction

The purpose of this section is to set out the financial implications of the preferred solution (Option 3 - Develop a permanent second CT-Sim and AI Software at Singleton Hospital).

### 6.2 Capital

The fully tendered capital cost assessment was undertaken by AECOM, Cost Advisors. These are as follows (see **Appendix A Estates Annexe A2**):

**Figure 18 – Capital Requirements (£000 incl. VAT)**

	<b>Option 3 Preferred Option</b>
Works Costs	550
Fees	137
Non- Works	109
Equipment Costs	1,731
Planning Contingency	126
<b>Total</b>	<b>2,653</b>
Less recoverable VAT	-23
<b>Project Cost</b>	<b>2,630</b>

See **Appendix A Estates Annexe A6** for VAT reclaim advice.

**Figure 19 – Preferred Option 3: Total Capital Funding Profile £000's**

<b>000's</b>	<b>Prior Years</b>	<b>2024/25</b>	<b>2025/26</b>	<b>2026/27</b>	<b>Total</b>
Capital Costs	29	2,602	0	0	<b>2,630</b>
Capital Funding	29	2,602	0	0	<b>2,630</b>

The key assumptions underlying the development of the capital costs are:

- Capital Cost includes works, non-works, abnormal allowances, equipment costs and risk contingency, which is assessed at 4.99%.
- The BIS PUBSEC indices at this stage are 311 for 2Q2024. The Business Case Reporting Index will be the standard one for Wales of 0.97
- VAT is at 20% except for the professional fee and other recoverable elements.

### 6.3 Recurring Revenue

#### Recurring Revenue Summary

The demand, capacity, waiting list, workforce and resulting financial revenue values have been modelled using 5 different scenarios for the new permanent CT-SIM (CT3):

<b>Option</b>	<b>Description</b>
A	Operate CT3 at 25% capacity (same as current recommissioned CT1)
B1	Operate CT3 at a capacity level to meet demand and maintain waiting list at current level (183 end of June 2024)
B2	Operate CT3 at a capacity level to meet demand and reduce waiting list to a more manageable level of c50
C	Same as option B2 up to 26/27, but no further increase in capacity above the modelled 53% to meet demand in 26/27
D	Same as option B2 up to 27/28, but no further increase in capacity above the modelled 78% to meet demand in 27/28

The modelled additional recurrent cost and associated 50/50 funding from each UHB over the modelled five-year period is shown in the table below.

	New Permanent Additional CT SIM - CT3					
	CT1	Year 1	Year 2	Year 3	Year 4	Year 5
	Year 0 24/25	25/26	26/27	27/28	28/29	29/30
<b>Recurrent Cost</b>	£000s	£000s	£000s	£000s	£000s	£000s
Option A	282	390	390	390	390	390
Option B1	282	420	844	1,043	1,046	1,290
Option B2	282	469	844	1,043	1,046	1,290
<del>Option C</del>	<del>282</del>	<del>469</del>	844	844	844	844
Option D	282	469	844	1,043	1,043	1,043
<b>50/50 Funding per UHB</b>						
Option A	141	195	195	195	195	195
Option B1	141	210	422	521	523	645
Option B2	141	235	422	521	523	645
<del>Option C</del>	<del>141</del>	<del>235</del>	422	422	422	422
Option D	141	235	422	521	521	521

The table below summarises all options up to 2025/26. The do-nothing option (only operate single CT-SIM CT2), results in a waiting list of 881 by the end of 2025/26 (compared to the current waiting list of 183).

Option A (minimum investment) is to continue with existing 25% additional capacity (603 scans) which costs £390k per annum and results in a waiting list of 279. Recurrent funding split 50/50 between the two UHBs = £195k per UHB. The additional funding above current CT1 funding of £262k is £64k per UHB (£195k-£131k). The main reason for the increase in cost vs current recommissioned CT1 is due to the service/maintenance contract and software costs associated with a new machine.

Option B2 (maximum investment) to meet current demand and reduce waiting list to c50 requires additional capacity of 34.5% (832 scans) which costs £469k per annum and results in a waiting list of 51. Recurrent funding of £235k per UHB is £104k above the current CT1 funding of £131k per UHB.

Current Ask to 2025/26 Recurrent Position	New Permanent Additional CT SIM - CT3			
	Do nothing	Option A	Option B1	Options B2-D
Additional Capacity %	0.0%	25.0%	29.0%	34.5%
Additional Scan Activity	0	603	699	832
Waiting List at the end of 25/26	881	279	183	51
Additional Cost £000s	n/a	£390	£420	£469
50/50 Funding per UHB £000s	n/a	£195	£210	£235

NB. Additional funding per UHB above vs

current recommissioned CT1 £131k each UHB =                      £64                      £79                      £104

Given the current financial environment, based on the modelled demand and activity required to bring the waiting list down to a manageable level and associated incremental increase in cost, the preferred commissioning and funding option would be Option B2. This seeks approval to commission additional recurrent capacity and associated funding up to the different values modelled to 2025/26 for Option B2. Capacity and funding will remain at the 2025/26 modelled levels from 2025/26 onwards until such time as a future business case is put forward to commission additional capacity above those levels.

**SBUHB, all options above to 2025/26 recurrent levels of £235k are affordable within the baseline funding allocated to the Singleton and NPT Service Delivery Unit.**

**There is general support from HDd UHB for the proposal. They will need to take the recurrent revenue ask of £235k through their internal financial and Board governance during July**

### Modelled Activity and Waiting List

The demand, current capacity (permanent CT2 and non-recurrent recommissioned CT1 during 2024/25) and resulting waiting list over the next few years is summarised in the table below.

Demand, Activity & Waiting List	Year 0 24/25	Year 1 25/26	Year 2 26/27	Year 3 27/28	Year 4 28/29	Year 5 29/30
Baseline Demand	2,967	3,012	3,111	3,694	4,295	4,437
Annual 3.3% Growth	84	99	103	122	142	146
Stepped Growth*	0	0	480	480	0	0
<b>Total Demand</b>	<b>3,051</b>	<b>3,111</b>	<b>3,694</b>	<b>4,295</b>	<b>4,437</b>	<b>4,584</b>
Permanent CT2	2,412	2,412	2,412	2,412	2,412	2,412
Non Recurrent CT1	603	n/a	n/a	n/a	n/a	n/a
<b>Total Current Activity</b>	<b>3,015</b>	<b>2,412</b>	<b>2,412</b>	<b>2,412</b>	<b>2,412</b>	<b>2,412</b>
Opening Waiting List	147	183	881	2,163	4,047	6,072
Demand vs Activity	36	699	1,282	1,883	2,025	2,172
Closing Waiting List	183	881	2,163	4,047	6,072	8,243

\* Stepped growth for adaptive Urology in 26/27 and adaptive Head&Neck + Gynaecology in 27/28

With an opening baseline demand of c3,000 scans per annum, with 3.3% annual growth (average annual growth over the last two years) and stepped changes in service in future years, results in demand increasing from 3,051 scans in 24/25 to 3,111 in 25/26 and up to 4,584 by 29/30. Current permanent CT2 activity is 2,412 scans per annum and the recommissioned CT1 provides an additional 603 scans non recurrently in 24/25. The future demand will not be met with one permanent CT scan, which will result in a significant increase in the waiting list over the period.

The table below shows the additional capacity needed to meet the objectives of each option.

Additional Capacity	CT1	New Permanent Additional CT SIM - CT3				
	Year 0 24/25	Year 1 25/26	Year 2 26/27	Year 3 27/28	Year 4 28/29	Year 5 29/30
Option A	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%
Option B1	25.0%	29.0%	53.0%	78.0%	84.0%	90.0%
Option B2	25.0%	34.5%	53.0%	78.0%	84.0%	90.0%
Option C	25.0%	34.5%	53.0%	53.0%	53.0%	53.0%
Option D	25.0%	34.5%	53.0%	78.0%	78.0%	78.0%

The capacity profile for each option delivers the following additional scans and resulting waiting list.

	CT1	New Permanent Additional CT SIM - CT3				
	Year 0 24/25	Year 1 25/26	Year 2 26/27	Year 3 27/28	Year 4 28/29	Year 5 29/30
<b>Additional Scans</b>						
Option A	603	603	603	603	603	603
Option B1	603	699	1,278	1,881	2,026	2,171
Option B2	603	832	1,278	1,881	2,026	2,171
Option C	603	832	1,278	1,278	1,278	1,278
Option D	603	832	1,278	1,881	1,881	1,881
<b>Waiting List</b>						
Option A	183	279	963	2,247	3,675	5,247
Option B1	183	183	183	183	183	183
Option B2	183	51	51	51	51	51
Option C	183	51	51	651	1,395	2,283
Option D	183	51	51	51	195	483

### Revenue Cost and Funding

The future recurring revenue costs above baseline at different capacity levels up to 2025/26 levels are summarised in the table below (detail included in Appendix G).

The key revenue assumptions are as follows;

- Direct pay costs are costed using 2023/24 pay rates.
- All staffing costed at substantive rates with no allowance for any premium rates
- The pay costs for Medical Physics Dosimetrists include enhancements for permanent weekend working and the costs for Radiographers include on-call/standby payments
- AI annual software subscription costs will cover both current CT2 and additional CT3.
- All other costs are at current 2024/25 prices.

Recurrent additional cost for recurrent additional capacity % options in 2025/26	Current Baseline	Recommissioned	New Permanent CT SIM - CT3		
	CT2	CT1 Non Recurrent	Option A	Option B1	Options B2+C+D
	100% Capacity	25% Capacity	per CT1 (25%)	Hold WL 29%	WL=50 34.5%
	£000s	£000s	£000s	£000s	£000s
<b>Annual Cost</b>					
Direct Pay Costs	£1,919	£172	£229	£257	£303
Direct Non Pay Costs	£314	£13	£88	£91	£93
AI Software Subscription	£0	£90	£65	£65	£65
Facilities Management Costs	£14	£7	£7	£7	£7
<b>Total/Additional Annual Cost</b>	<b>£2,248</b>	<b>£282</b>	<b>£390</b>	<b>£420</b>	<b>£469</b>
<b>Variable non pay not included in funding</b>		<b>-£20</b>			
<b>Total Additional Commissioned / Funding</b>		<b>£262</b>	<b>£390</b>	<b>£420</b>	<b>£469</b>
Additional CT3 cost % vs CT2 baseline cost			17%	19%	21%
<b>Additional Annual Funding</b>					
Hywel Dda UHB (50%)		£131	£195	£210	£235
Swansea Bay UHB (50%)		£131	£195	£210	£235
<b>Total Additional Annual Funding</b>		<b>£262</b>	<b>£390</b>	<b>£420</b>	<b>£469</b>
Additional funding above recommissioned CT1			£128	£157	£207
Additional funding above recommissioned CT1 per UHB			<b>£64</b>	<b>£79</b>	<b>£104</b>

There are economies of scale to be gained from the addition of a second permanent CT with costs increasing by a lower % than the additional capacity % being created e.g. 34.5% additional capacity from CT3 costs 21% above CT2 baseline (£0.469m/£2.248m).

The modelled cost for different capacity levels over the modelled five-year period are:

Recurrent additional cost for recurrent additional capacity % options in the future (This business case ask is to 2025/26 only)	Current Baseline	New Permanent CT SIM - CT3					
	CT2 100% Capacity	Current CT1	Meet demand	Improve WL	Meet demand	Meet demand	Maximum
	£000s	25%	to 25/26 29%	25/26 34.5%	in 26/27 53%	in 27/28 78%	100%
	£000s	£000s	£000s	£000s	£000s	£000s	£000s
<b>Annual Cost</b>							
Direct Pay Costs	£1,919	£229	£257	£303	£589	£774	£1,015
Direct Non Pay Costs	£314	£88	£91	£93	£157	£171	£182
AI Software Subscription	£0	£65	£65	£65	£90	£90	£90
Facilities Management Costs	£14	£7	£7	£7	£8	£8	£8
<b>Total/Additional Annual Cost</b>	<b>£2,248</b>	<b>£390</b>	<b>£420</b>	<b>£469</b>	<b>£844</b>	<b>£1,043</b>	<b>£1,296</b>
Additional CT3 cost % vs CT2 baseline cost		17%	19%	21%	38%	46%	58%

The above table shows maximum capacity use of CT3 costs £1.296m compared to £2.248m current baseline cost for CT2 (+58% cost for +100% more capacity). This efficiency is mainly driven from workforce gains modelled from the impact of implementing artificial intelligence software across both CTs and economies of scale from operating two CTs, as demonstrated by the workforce WTE numbers below.

Workforce Efficiencies (WTEs)	Baseline	Additional	Difference Additional vs Baseline	Difference due to	
	CT2 100%	CT3 100%		Artificial Intelligence	Economies of Scale
Medical Physics - Dosimetrists	10.61	6.00	-4.61	-4.61	0.00
Medical Physics - Healthcare Scientists	5.00	0.40	-4.60	-1.00	-3.60
Medical Physics Experts	1.30	0.40	-0.90	0.00	-0.90
Radiographers	10.00	8.50	-1.50	0.00	-1.50
Radiographers Support (Admin)	1.00	0.00	-1.00	0.00	-1.00
Consultant Oncologist	1.00	1.00	0.00	0.00	0.00
<b>Total WTEs</b>	<b>28.91</b>	<b>16.30</b>	<b>-12.61</b>	<b>-5.61</b>	<b>-7.00</b>

The modelled additional recurrent cost and associated 50/50 funding from each UHB over the modelled five-year period is shown in the table below.

	CT1	New Permanent Additional CT SIM - CT3				
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
	24/25	25/26	26/27	27/28	28/29	29/30
<b>Recurrent Cost</b>	£000s	£000s	£000s	£000s	£000s	£000s
Option A	282	390	390	390	390	390
Option B1	282	420	844	1,043	1,046	1,290
Option B2	282	469	844	1,043	1,046	1,290
Option C	282	469	844	844	844	844
Option D	282	469	844	1,043	1,043	1,043
<b>50/50 Funding per UHB</b>						
Option A	141	195	195	195	195	195
Option B1	141	210	422	521	523	645
Option B2	141	235	422	521	523	645
Option C	141	235	422	422	422	422
Option D	141	235	422	521	521	521

#### 6.4 Income and Expenditure Analysis (Non-Cash)

The capital funded option for the purchase of the modular theatre will require additional non-cash funding for recurring depreciation (DEL) and non-recurring impairment (AME)

Figure 20 – Impact on the Balance Sheet and Impairment £000s

000's	2024/25	2025/26	2026/27	2027/28	2028/29
Depreciation (DEL)		260	260	260	260
Impairment Initial Valuation (AME)	450				

The Health Board will engage the services of the District Valuer to provide a valuation of the scheme following completion. At this stage the estimated AME Impairment on the initial valuation of the unit of £0.450m will need to be taken through the Health Board's SOCNE in 2024/25. The Health Board would require funding from WGov and this will be included in the AME impairment funding submission to WGov in 2024/25.

The Health Board will require additional recurring depreciation of £0.260m from 2025/26 with no depreciation required in 2024/25.

#### 6.5 Overall Affordability

The Health Board would require capital investment of £2.630m (incl recoverable VAT).

Non-cash funding of £0.260m will be required for recurring depreciation and £0.450m for the estimated Initial Valuation Impairment.

## 7 Management Arrangements

### 7.1 Introduction

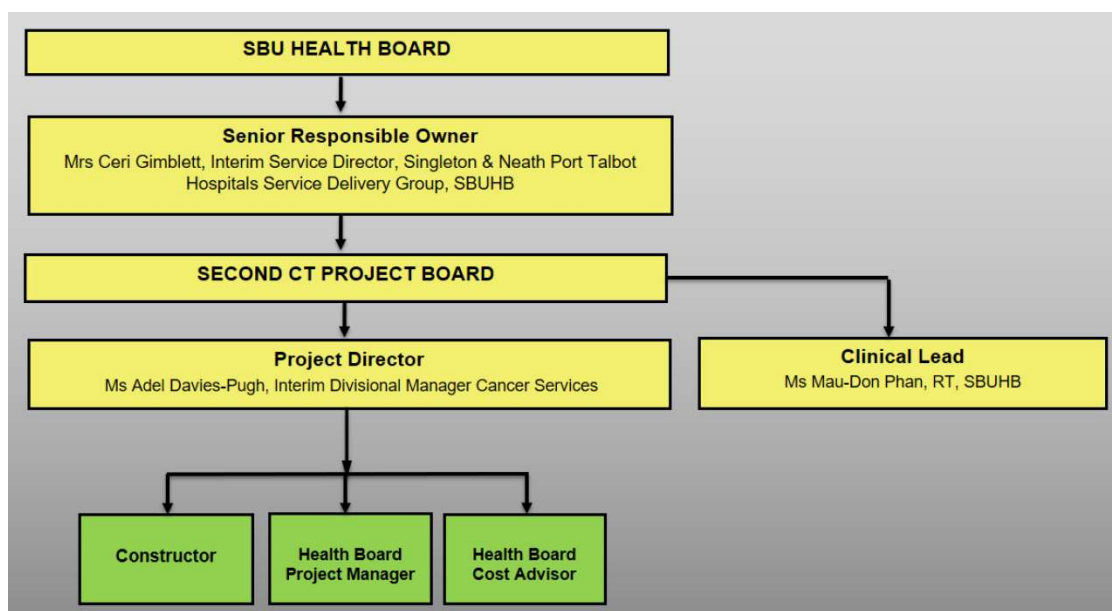
The section details the plans for the successful delivery of the scheme to cost, time and quality. The details are set out below.

### 7.2 Project Management Arrangements

To ensure successful project delivery, a robust project management reporting structure has been established. The structure is based on the Prince2 principles, with key members of the project team trained in Prince2 methodology.

- The Senior Responsible Owner (SRO) is Mrs Ceri Gimblett, Interim Service Director, Singleton & Neath Port Talbot Hospitals Service Delivery Group, SBUHB.
- The Project Director is Ms Adel Davies-Pugh, Interim Divisional Manager Cancer Services, who has the authority and responsibility to manage delivery of the project on behalf of the key stakeholders. The Project Director reports via the Project Board to the Project SRO.
- The RT Clinical Lead is Ms Mau-Don Phan, RT, and SBUHB.

The project structure is as follows:



### 7.3 Equality Health Impact Assessment (EHIA)

An Equality Health Impact Assessment has been completed - see **Appendix D**.

### 7.4 Benefits Realisation

A Benefits Plan has been established during the development of this BJC that provides a framework for this aim and is overseen by the Project Board. The Benefits Realisation Register are attached at **Appendix B**.

### 7.5 NHS Wales Gateway Review (Stage 3 – Investment Decision)

A Risk Potential Assessments (RPA) has been carried out for this project. A copy is included in **Appendix C**. A Gateway review could be arranged WGov would carry out post submission of this BJC in accordance with WGov Investment Guidance and as proportionate to this investment.

### 7.6 Contingency Plans

The Health Board can identify two major categories of project failure: Failure to achieve business case approval to deliver the project; Failure of the Main Contractor to deliver the project to time/quality. The contingency plan for the project in the event of failure to achieve business case approval is for the Health Board to continue to revise its plans, working with WGov to develop an alternative solution that is acceptable.

In the event of Main Contractor failure, SBUHB would seek recompense in line with the agreed contractual arrangements and other contractor to complete the project.

## Appendix A – Estates Annexe: A1 Executive Summary

## Appendix A – Estates Annexe: A2 Cost Form & Summary of Equipment

## Appendix A – Estates Annexe: A3 Drawing

## Appendix A – Estates Annexe: A4 Indicative Programme

## Appendix A – Estates Annexe: A5 Risk Register

## Appendix A – Estates Annexe: A6 VAT letter

## Appendix B – Benefits Register

## Appendix C – RPA

## Appendix D – Equality Health Impact Assessment

## Appendix E – Framework Options

## Appendix F – Letter of Support *to follow*

## Appendix G – Breakdown of Revenue Costs

## Abbreviations

(W)HBN	Welsh Health Building Note
(W)HTM	Welsh Health Technical Memorandum
AHP	Allied Health Professional
AI	Artificial Intelligence
AME	Annually Managed Expenditure
BAU	Business as Usual
BIS	Business Innovation and Skills (Firm
PUBSEC	Price Index) Tender Price Index of Public Sector Building Non-Housing
BJC	Business Justification Case
CIA	Comprehensive Investment Appraisal
CRBs	Cash Releasing Benefits
CSF	Critical Success Factor
CSP	(SB UHB's) Clinical Service Plan
CT-Sim	Computed Tomography Simulator
EHIA	Equality Health Impact Assessment
HB	Health Board
HDd UHB	Hywel Dda University Health Board
HMT	Her Majesty's Treasury
HSA	Health and Safety Executive
IMTP	Integrated Medium Term Plan
Linac	Linear Accelerator
NCRBs	Non-Cash Releasing Benefits
NEC	New Engineering Contract
NPTH	Neath Port Talbot Hospital
NWSSP	NHS Wales Shared Services Partnership
SES	– Specialist Estates Services
OGC	Office of Government Commerce
QA	Quality Assurance
RPA	Risk Potential Assessment
RT	Radiotherapy Treatment
SB UHB	Swansea Bay University Health Board
SDCP	Site Development Control Plan
SWWCC	South West Wales Cancer Centre
VfM	Value for Money
WGov	Welsh Government
WHSSC	Welsh Health Specialised Services Committee
WTE	Whole Time Equivalent

