City-Region Deal
Cùmhnant Baile-Roinne

BUSINESS CASE	
Project name	UHI School of Health and Life Science (InvEnt AC)
Themes	A Skilled Economy, Growing the Economy
Lead	Jeff Howarth
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Reason for Change	Addition of clarifications and detail following discussion with the UK Government, 4/10/16
Main Changes	• Market failure rationale enhanced • National impacts elaborated • Inclusion of evidence on the wider economic returns to innovation • Clarifications on baseline for options and optimism bias

1. STRATEGIC CASE

1.1 The Market Failure

The healthcare and life science sectors are critical for economic and social development, but innovation and commercialisation in these sectors are an acknowledged challenge across the UK, with for instance the UK life sciences sector still not reflecting the global strength of the university research base. This particularly affects remote and rural settings, due – amongst many other issues – to a lack of support infrastructure in facilities and connectivity and a sub-critical research capacity, straight through to limited venture funding and inadequate workforce and skills.

The UK Government's Department for Business, Energy & Industrial Strategy identifies the following justifications for public intervention in order to create the right conditions and incentives for UK businesses to compete in a global innovation economy:

- The scale of scientific or technical problems is too great for individual private entities to tackle if markets are competitive, and may be characterised by uncertainty, making it hard for the private sector to invest. Where innovation only yields return in the long run, investment can be hampered.
- There can be a high cost of market entry/exit, e.g. where an initial supplier has built an insurmountable advantage.
- Innovation can depend on the presence of external networks, which are beyond the means of innovators to create; whilst new ideas can be difficult to protect.
- Small businesses can lack the high levels of specialised technical and/or market knowledge required for making informed decisions.
- Firms can lack the skills, resources, ability to learn, absorptive or analytic capacity to capture innovation opportunities.
- Networks can be fragmented or locked into technological regions, markets or products, with an incapability to transition into new technologies or businesses.
- Rules and regulations and Government policy can impede innovation.

Empirical evidence from the UK Innovation survey shows that the most significant barriers to innovation in the UK are cost of innovation; the cost and availability of finance; and excessive risk.

To an extent, market failure can be linked with the relative newness of the life sciences; with the "infant industry" justification for public intervention long acknowledged by economic analysts.

An example of a very relevant market failure in health and care identified in the Department for Business Innovation and Skills July 2014 report, The Case for Public Support of Innovation, relates to the increasingly important regenerative medicine, which has been identified by the Policy Exchange think tank as one of the "8 Great Technologies". The key problem is that large portions of regenerative medicine have not yet been proven to work effectively, thus falling short of a clear rationale for treatments of this type to replace existing treatments on the scale demanded by national public health systems such as the NHS. There is a strong research base in the UK to build upon, but there are significant bottlenecks in translating research into marketable products due to lock-in effects, information asymmetries, and capability and infrastructure failures. The companies involved in regenerative medicine tend to be relatively small and the background of their personnel tends to be considerably more focused on science and research than development and market knowledge.

The proposed project outcomes and the project delivery methodology have been devised together as a measured response to these market failures.

The current rate of creation of commercialisation and healthcare service outcomes from UHI (and other HIE) life sciences research has been very modest and no new products have reached the market to date. Only three outcomes can be cited, including an App for control of Lyme disease, a platform for using antibodies in diagnostics, and the methodology for virtual diabetes clinics targeting type 1 diabetes. Only the last of these has been implemented and then only as a local pilot. This is despite UHI having 70% world class and internationally excellent research scores in its life sciences REF result.

In terms of private sector cluster building, the growth of Lifescan plc from a small start-up into Scotland's largest life science company led to ambition for a life sciences cluster and, for instance, establishing a life sciences Enterprise Zone on the new Inverness Campus. Although perhaps up to 10 new start life science companies have developed in the inner Moray Firth over the last decade, there have been some notable failures (Accunostics and Distance Lab), and some remain to achieve sales or acquisition. The Enterprise Area at the Inverness Campus remains unfilled, and the attrition and growth rate of the private sector remains disappointing, with current space remaining largely unoccupied.

The NHS Highland (NHSH) clinical research facility (previously owned by UHI but recently absorbed into the NHS), and their internal research and commercialisation support processes have not yet yielded the returns hoped for. In addition, health care delivery in remote and rural communities faces growing challenges, particularly in the recruitment and retention of GPs and most specialist medical and clinical staff. Career development and the lack of research opportunities are amongst the key barriers. NHSH is increasing the research opportunities for consultants, as part of its recruitment and retention strategy, but this requires university and private sector involvement, and a means of ensuring service delivery is not compromised.

This City Region Deal project sits within a linked framework of large co-investments and provides the crucial final building blocks in the strategic integration of these developments into a transformational engine for wealth creation and employment.

1.2 Current Context

The vision of this project is to establish a centre of excellence in innovation and commercialisation in health and life sciences, delivering a step change in business and sector growth. The following synchronous developments have laid the foundations for this project:

- The transfer of pre-registration nurse education from the University of Stirling to the University of the Highlands and Islands (UHI), plans for which are now very advanced, with the first UHI intake planned for 2017.
- The related opportunities for growth in health and care education arising from this, supported by UHI and the new "Developing Scotland's Workforce" European Strategic Investment Fund (ESIF) programme of funding.
- The attractor of the new Inverness Campus which is fast becoming a nationally significant hub for this growth sector.
- The rapidly growing research culture and commercial focus within NHS Highland (NHSH).
- The excellent UHI outcome in life sciences research in the UK-wide Research Excellence Framework, along with a new £4m investment programme in applied life science research funded by Highlands and Islands Enterprise.
- The new agreement between UHI and NHSH, and the new elective surgery hospital destined for Inverness with co-located primary care clinics, each with increasing research ambitions.
- Several new innovation budgets, providing a strong focus on life science commercialisation and entrepreneurship, including the selection by Scottish Government of Inverness as the lead centre to

pilot health and life science innovation - “Scotland Can Do”

- UHI’s allocated ESF budgets for research, new blood academics, and sector engagement, with a significant focus on health and life sciences.
- The new medical training developments such as a Scottish Graduate Medical School, with a hub in Highland for remote and rural medicine.

In response to this, UHI is establishing a new School of Health and Life Sciences which brings all of this together in a strategically planned implementation. The wider School will establish a regional and broad based academic team able to deliver a wide range of applied research.

However, the provision of dedicated commercialisation resource and a linked clinical and health care research resource, working in close partnership with UHI’s growing applied research base, and with access to world class innovation and commercialisation facilities, all collocated with existing research active clinicians in acute and primary care, is the key specific City Region Deal investment for delivering commercial and economic impact.

This project, set within the wider School of Health development, will make a significant contribution to addressing these linked challenges. They will together comprise the centre of excellence with the necessary critical mass to achieve the step changes in business and sector growth that is being sought.

1.3 The Proposal – Option 1

Inverness Enterprise An Comman or “InvEnt AC” will be a gathering together of health and life science RD&D, invention, making, testing and product commercialisation activities. It will house an agile business unit that manages all interactions between the health service, the academic sector and commercial partners.

Its principal purpose is to radically expand the range and scope of the commercial life sciences sector within the Highlands of Scotland. The core relationships are well established, with the UHI and NHS Highland partnership having been formalised in a memorandum of understanding to facilitate effective collaboration in innovative solutions to address key health care opportunities. In addition, NHS Highland and The Highland Council (THC) working together have made Highland one of the UK’s leading areas for health and social care integration.

InvEnt AC will support the key interactions with commercial partners, and support innovative commercialisation outcomes. The City Region Deal will provide the infrastructure to foster these collaborations to facilitate creation of new companies, to draw in new investment and to create new jobs. The key sectors for expansion include point-of-care diagnostics, technology-enabled care, clinical decision support using digital health, incentivising behavioural change, the creation of homes for enabled living, the impact of the environment on the wellbeing of the population, and the potential for embedded physical activity trainers in the primary care setting to improve chronic disease management.

The hub will provide the infrastructure and personnel to accelerate the process of product development and commercialisation for an identified clinical need. Clinical staff will be engaged on a sessional basis to identify and to drive early R&D for innovative solutions. Product development will be overseen by a commercialisation team who will advise on intellectual property, commercialisation opportunities, funding and investment.

InvEnt AC will also provide the space necessary for rapid prototype development and product testing, with incubation space available for spin-out companies and SMEs attracted to the health cluster on Inverness Campus. InvEnt AC provides the mechanism to turn innovative promise in the health sector into tangible

products and services driving wealth creation and high value employment.

1.4 Project Objectives and Scope

The main capital expenditure would create a ~800m^2 space for the whole life cycle of commercialisation, in a facility co-located with NHSH primary and acute care facilities. It will comprise research, development and commercialisation space, including a pre-incubator. There will be a product development and rapid prototyping facility also, with a small advanced manufacturing capability for medical technology developments. There will be a digital health test-bed for "apps", and a Patient-led Experience/Behavioural Science capability. There will also be space for clinical research directly linked to applied health, and life science research would also be created. The research facilities would be equipped to deliver an integrated programme of both clinically based commercially driven research in non-invasive diagnostic and measurement technologies and imaging, and in digital health products.

The facility will be as accessible and open as possible, and will support UHI, NHS, other universities and private sector activities which will lead to commercial outcomes and employment in health and life sciences.

An overview of the envisaged innovation system, which will integrate the two innovation City Region Deal investments, along with clinical innovation and university applied research capacity, is provided in Annex 1.
The InvEnt AC pipeline will take projects to the pre-revenue stage, with other sector support processes, largely provided using support from Highlands and Islands Enterprise and the various existing mechanisms for new start company support. This will include newly established businesses who will graduate to support from RSE Fellowships, SMART Scotland and RSA support. It is also anticipated that companies already in receipt of Innovate UK SBRI competition funding would be able to enter the InvEnt AC pipeline and make use of the facility at the appropriate points.

The main volume of activity will result from UHI academic and NHSH joint innovation activity. Crucially, though, the system is designed and will be managed to provide entry points for a range of other users who will access the same facility and support ecosystem to enhance the rate and scale of commercial outcomes.

The main revenue expenditure will be:

- to recruit professional commercialisation resource;
- product development facility technician support;
- research-active clinicians who, in combination with UHI's existing life sciences research base, will deliver the concepts and research outcomes which will enter the development pipeline for the new products and services, spin-outs and technology support for inward investments, and services to existing new starts in life sciences.

UHI is working closely with Highlands and Islands Enterprise and NHSH leadership to define what would deliver the strongest outcomes in terms of spin-outs and new products, etc. Based on the NHSH's long experience of working in their locally based Highland Clinical Research Facility, an innovative staffing plan has been developed. This will deliver a number of research active clinicians employed part time by UHI working as principal investigators (PIs). Their research, development and commercialisation work will be funded by the City Region Deal. Their clinical work is separately funded by NHSH.

Each part time PI would work with a team of UHI-funded researchers, project managers, PhD students, grant writers etc., to augment their activity and outputs. The PIs would bring their clinical knowledge and access to patients, along with their own research strengths, to the process of developing the

commercialisation projects. These groups would work jointly as teams in those areas of health and life sciences which are seen collectively to have commercial prospects.

This, along with professional life science commercialisation resource, and technical staff to operate the labs and development suites, is the engine which will deliver the outputs.

1.5 Project Outcomes

- 20 new digital health and applied life science products and services
- 10 new start companies from spin outs or inward investment
- 15 supported companies for product innovation in the region and across the UK
- 25 exportable healthcare improvements supporting remote and rural communities

There is a degree of overlap between theses outcomes.

The reasoning which shaped these targets has grown out of the different aspects of the market failure described above, of the opportunity presented by the region's remote and rural natural laboratory, and also of the collective view of the clinical, academic, commercial and intermediary organisations who make up the local sector.

The above targets both in their nature and scale are challenging but considered achievable. They reflect the low starting point of the region in terms of success to date, and a realistic view of the geographic challenges of rurality, but also the green shoots within the sector and the obligations for a return on investment for the tax payer.

The narrative above explains the low starting point from which these numerical targets will have to be delivered, demonstrating the challenging nature of the targets. The narrative also shows that simple benchmarking against better established and/or urban locations would produce what for Inverness would be overly ambitious targets. The balance proposed for the local context for UHI, and the open access nature of the facility for local innovators and inward investors, does however put such outcomes within reach.

Firstly the nature of the targets – new products and services, new companies, supported companies, healthcare improvements derived in the natural laboratory of the Highlands but with transfer/exportability – arises from the local sector profile, the current general innovation capacity, and the social challenges for the remoter communities of the region.

Secondly the numerical targets are positioned and framed between the low local starting point and the higher expectations of "best in class" life sciences locations.

Achievement of these targets will flow from the specific direct project deliverables:

- A dedicated centre of excellence in life science commercialisation, within Phase 2 of the Centre for Health Sciences, on the new Campus, co-located with NHSH covering acute and primary care.
- A significant period of funded collaborative effort targeting commercial outcomes from health, applied life science and clinical service.
- A continued growth of funding attracted by the new centre of excellence.
- Growth in commercialisable research, product development, and knowledge exchange.
- An established broad based centre of excellence in remote and rural health, digital health, applied life sciences and integrated multi-professional health care delivery.

As is shown in the context statement provided earlier, this project is set within a linked programme of

different investments and developments, many of which are part of or linked to the UHI School of Health. As is shown in Annex 6, co-investment is expected to amount to ~£30m. This is itself a key factor in the deliverability of these outcomes.

1.6 The Existing Research and Clinical Baseline

This plan is based on an existing stock of collaboration. Universities (in particular UHI), NHS, industry and HIE have all been closely involved in the Highlands and Islands regional health and life science strategy. This foundation of collaboration is the pre-requisite for the project success.

There are three main regional strategic themes of research and commercialisation which have been collectively identified as providing the framework for economic impact in health and life sciences. These composite and linked themes are Disease Management, Smarter Health, and Wellbeing/Disease Prevention.

UHI's current research strategy and competences are based on these three regional themes. It is this combination of an agreed regional health and life sciences development framework, the strong research base of UHI and other Higher Education institutions, and the rapidly developing ambition of NHSH in research and commercialisation which will exploit the investment from the City Region Deal.

The following summarises NHSH research themes and their target commercial output:

Disease Prevention:
Research: Environmental science and its effect on public health (pharmaceuticals in water, priority toxic substances). Effects on our population
Commercial Outcome: Environmental testing/clean-up technologies

Smarter Health:
Research: Clinical decision support and primary/secondary care interface
Commercial Outcome: Wearable devices, remote ultrasound (e.g. MIME – spin-out from University of Aberdeen)

Smarter Health/Wellbeing:
Research: Developing technology for ambient monitoring – links to Fit Home
Commercial Outcome: Development of technology devices for homes to reduce need for hospitalisation

Smarter Health:
Research: Remote outpatient delivery
Commercial Outcome: Embedding digital health into everyday processes

Disease Management:
Research: Point of Care testing
Commercial Outcome: Identification of validated biomarkers for disease diagnosis and monitoring. Development of point-of-care test devices to enable utilisation in primary care and for self-testing

Disease Management/ Wellbeing and Disease Prevention:
Research: Exercise interventions and behavioural change/disease prevention and management/resilience
Commercial Outcome: Physical activity centres, trainers and apps to facilitate and motivate healthy individuals (prevention) and patients

Disease Management:

Research: Supporting self-management/guided care (Realistic medicine)
Commercial Outcome: Consultancy and lifestyle managers

The following clinical specialisms have existing research active clinical staff:
Care of the Elderly Medicine, Cardiology, Diabetes , Improvement Science, Neuroscience, Rheumatology, Ophthalmology, Oncology/haematology, Public Health, Primary care, Surgery/Innovation/Digital health

The nature of the commercial outcomes are based on the above broad base of opportunities. These will include orthotics, medical devices, biomarker targets, active molecules, medical and health care apps, new monitoring technologies, etc. It is difficult to be more specific, although an audit of early target projects and candidate commercial projects is underway.

1.7 Examples of university-led early stage research with commercialisation potential

- Diagnostic kit development for chronic diseases (diabetes, cardiovascular, cancer, schizophrenia)
  Stage – prototype – patent application submitted
  Likely route to market – collaborative development with Chinese company, then out licensed
  Benefit – Development activity in Inverness, licencing revenue
- Lyme-App (an app for identifying areas at risk of Lyme disease)
  Stage – proof of concept
  Likely route to market – collaborative development with Belgian company
  Benefit – Development activity in Inverness, licencing revenue
- Orthotic shoe inserts for patients with diabetes
  Stage – prototype
  Likely route to market – collaborative development with specialist company
  Benefit – Development activity in Inverness, licencing revenue
- Nano-coatings for catheters and cannulae
  Stage – Proof of principle
  Likely route to market – collaborative development with cannula manufacturers
  Benefit – Development activity and out-licensing
- Water contamination and chronic disease
  Stage – proof of principle
  Benefit – fee-for-service activity – water quality testing, cell culture, epidemiology

1.8 Deliverability and Risks related to the Project Outcomes

The following are risks which could affect the deliverability of the project outcomes and benefits:

- NHS focus and re-structuring of boards results in a de-prioritisation of the project in the new structures.
- Failure to develop sufficient volume of candidate projects for the commercial pipeline or too slow a pace of production.
- Lack of aligned support for the project from intermediaries.
- University funding threats, Brexit threat to HEI research.
- Brexit threat to Structural Funding from the EU for the region.
- Failure to recruit research active clinicians to the region, or the release of research time for NSHH staff.
- Lack of engagement of non-UHI users in the commercialisation facility, again reducing throughput and outturn.
- Failure to recruit commercialisation experts to work in the new system.
- The risks to the continued presence of an anchor corporate in Inverness causing a diminished proposition for other inward investors.

Despite these potential failure modes, many of which are not new, the sector has sufficient momentum to continue and accelerate its growth with the help of this investment.

2. THE ECONOMIC CASE

2.1 Options Analysis

The preferred option (Option 1) for delivery of the project is as described in the Strategic Case under the three sections "The Proposal", the Project Objectives and scope" and "Project Outcomes".

Alternative options can be devised to address the deficits and gaps targeted in the market failures identified in this proposal. They are grouped into two sections:

2.2 Options based on alternative innovation models

The essence of this investment is to bring together through public investment the key actors in a triple helix innovation system in life sciences, rather than either individual interventions or no intervention. Several alternative models of delivery can be conceived, either through a different City Region Deal investment target, or through zero investment:

- Option 2 Rely on industry supported by direct public sector investment
- Option 3 Rely on NHS commercialisation supported by public sector investment
- Option 4 Rely on public sector research, i.e. invest in increased university outputs
- Option 5 Rely on serendipity (i.e. do nothing).

Option 2

Industry alone can produce value, but in life sciences this value invariably relies on interaction with the NHS for patient involvement and trials. In addition, industry itself tends to procure university support, often on a global basis for life science corporates. In remote and rural settings, this does not create the local ecosystem for cluster growth and critical mass.

Under this option, comparison can be made with a project like Accunostics, formerly based in Forres – an IP development venture aimed at developing blood testing technologies which cost upwards of £5m over three years, but which closed in 2013 having failed to be acquired, and with no sales, and limited intellectual asset value.
http://www.bloomberg.com/research/stocks/private/snapshot.asp?privcapId=140463445

Alternative models of innovation support for industry, addressing entrepreneurial and business skills, market access and internationalisation support undoubtedly are needed. But a strong case can be made that even in the most advance innovation ecosystems, it is the triple or quadruple helix models which are effective. We believe this is even more the case for a region with such a small absorptive and generative capacity in the commercial sector for innovation, and with such low levels of Business Enterprise Research & Development (BERD). But it is equally true that existing mechanisms to either increase BERD, or those seeking to link the private and research sectors – Innovate UK, Knowledge Transfer Partnerships, and Innovation Centres amongst many – have not been effective in this sector and in this region.

Option 3

Although NHS commercial outputs do occur and are increasing, rural health boards based on smaller population centres and distributed community hospitals and with no locally based university medical school are less effective. Interactions with industry, often through clinical research facilities, do yield benefits, and new support measures to promote industry, NHS interactions are credible. Indeed the Scotland Can Do pilot addresses in a small way this process, supporting SME-NHS interactions on the methods for delivery of

novel treatment for one long term condition (Irritable Bowel Disease).

The potential for NHS to receive funding from Government directly for research with the aim of increasing at least health care outcomes for remote delivery and digital health is itself unlikely. This is due to funding constraints on all NHS budgets and the absolute focus on immediate patient outcomes and critical infrastructure expenditure. Even if this were delivered, the commercial outcomes are not within reach for this route, and only innovation budgets can deliver the necessary non-health care infrastructure and capacity.

Option 4

As shown in the market failure narrative in the Strategic case, UHI, in common with most universities, is not producing the outcomes to be hoped for, due to a wide range of well understood problems, such as the reluctance of academics to leave academia, the academic imperative and reward structure pushing publication, and the focus on world class teaching as the driver of research rather than commercial outcomes. Investing in a university alone, rather than the proposal which is designed to link to and bring in as many other contributors as possible, will not be anywhere near as effective.

The delivery of the commercial outcomes in life science from industrial-clinical-academic collaboration is however the goal of almost all international innovation system theory and practice. Different innovation system options are valid, with Linear (Tech pull or market pull), open/non-linear, and combination models all used. However they all rely on some form of orchestration of activity and outputs by actors, and in this sector success is always based on the combined efforts of universities, hospitals and industry, founded as it is on patient-based research.

The success of innovation models based on universities is however well established: *"UK Universities are playing a key role in encouraging life science start-ups, with university spin-outs representing 34% of all start-ups between 2010 and 2014". (BioCity – UK Life Sciences report 2015).* UHI has the necessary existing very strong working and strategic partnerships with HIE, NHSH and local industry, and other universities, making this triple helix system the most logical choice.

Under this option comparison can be made with another project in Forres which cost £3m over three years. This project known as Distance Lab was a spin out from staff from MIT based at Media Lab Dublin researching near market technology for the human-tech interface, largely for health care applications.
http://news.bbc.co.uk/1/hi/scotland/highlands_and_islands/7423700.stm

This again closed with no commercial outcomes. The research base itself was partly sustained by transfer to Glasgow School of Art and Design as a small outstation for digital design activities, with further injections of public funding.

Historically, UK universities have had a poor record of converting concepts into commercialisable intellectual property and either successfully out-licencing or creating spin-outs to capitalise on inventions. The reasons for this failure are complex, but include:

1. A lack of understanding and entrepreneurial culture amongst academics
2. Poor links between researchers, industry and end-users (e.g. NHS)
3. Adoption of a "closed" model of innovation, with substantial cost implications around protection of IPR

UHI experience in this field exemplifies some of the issues: IPR developed jointly with University of Edinburgh in the organ preservation arena was granted patent, but has recently been dropped on account of mounting patent protection costs in the face of a lack of ability to successfully engage with industry or to spin-out a viable company to take the product to market. In this case, the lack of infrastructure and financial clout, coupled with a weak academic/industry/end-user (triple helix) ecosystem combined to sink

the concept, at a combined estimated cost to the universities and other stakeholders of £75,000.

Option 5
The doing nothing option equates to reliance on the existence of a major life science company in Inverness, a hospital and a university as being sufficient to deliver growth. The truth of the matter is that the major company itself must be based within a system which can supply its innovation, workforce and strategic development needs, in order to anchor it in the UK, since these features are increasingly available in other global destinations.

Reliance on the growth of commercial activity around an existing corporate presence cannot realistically deliver the cluster growth for Inverness, and certainly not for the wider rural locations in the region. The crucial components of workforce planning, research capacity, and commercial funding, are being addressed by different local stakeholders, but the City Region Deal funding will provide the missing part of the process.

The risk here is in being unable even to continue the rate of growth achieved so far, to fail to deliver that critical mass tipping point which characterises success, or to achieve it so slowly that the regional economy benefits more slowly and to a lower level final due to faster competition with better support.

2.3 Options based on alternative capital models

Option 6 Establish a similar new facility but instead directly linked to the Raigmore site.
This option would share with the proposed solution the benefit of close co-location and interaction with NHS clinical activities and research. However the Raigmore site cannot accommodate this development physically, and would get caught up in the complex planned phased replacement of the main hospital estate. It is therefore impractical, risky, and unlikely to be cheaper.

Option 7 Establish a similar new facility but as a leased area in the existing CfHS.
This would require UHI to lease several hundred square metres of space in this local life science facility located on the current Raigmore Hospital campus. Again this is impractical due to the full occupancy, the very expensive rental costs, the need for long term leases, the lack of accessibility to other potential users of the facility, and given the likely reduction in size and functionality. This would require a big swing away from capital to revenue expenditure, thus changing the balance of physical and staff infrastructure which in our view would be sub-optimal. It would require complex capital modifications to a facility not owned by UHI, with unattractive and expensive long term commitments to lease payments, which will be un-fundable by UHI.

Option 8 Establish a similar new facility in the existing CfHS after acquisition of the CfHS by UHI
UHI is taking over the delivery of pre-registration nurse education which takes place from the existing Centre for Health Science building (CfHS) on the Raigmore campus. As UHI is already a tenant for other activities besides nursing, this has raised the possibility of UHI acquiring the whole facility. The covenanted tenant rental income however would still require UHI to raise several millions of capital. Under these circumstances, an option could be envisaged where a facility is built within a building which UHI owns. Space could be obtained by terminating the leases of some current tenants, assuming appropriate break points or end points in leases. However the budget to purchase the building does not exist in UHI. The fallout from terminating leases creating space would be unacceptable. The option loses the benefits from co-locating the three custom designed new facilities – primary care, acute care and commercialisation. It also loses the benefits of locating on the new campus. More importantly, it diminishes the momentum and impact of our growing partnership with NHSH. Co-locating on the new campus allows them to expand acute care beyond the constrained Raigmore site, whilst at the same time rebalancing their competing priorities for service delivery, career development with the university, and also the increasing national focus on

research and economic impact from commercial outcomes.

This is high risk option, is impractical in its complexity and has unsupportable wider cost issues.

Option 9 Establish a new UHI-only facility

UHI already owns a small research building on the Inverness Campus, shared with the Highlands and Islands Enterprise headquarters building, a unique co-location aimed at promoting ever deeper joint working. An extension to this current UHI building on the Inverness Campus could be created. The other collaborators would still be within striking distance in the Inverness area. However, this option loses the considerable anticipated benefits from co-locating three actors in a custom designed new facility, as exemplified in two other shared facilities in which UHI already operates. The main site which is open to use for this option is also considerably smaller and less flexible than the proposal. It would deliver a less deep and productive partnership with NHS clinicians and GPs. The facility would be less amenable to the multi-entry point innovation model we have conceived, with a likely perception as a UHI-only facility and thus being less attractive to other organisations. It is not clear that it could allow efficient interdisciplinary working between the current site on the new campus, the research facilities in the CfHS and the main clinical centre in Raigmore.

2.4 Summary of Options

In summary, other options can be devised. Each has some merit and would be able to address a component of the need. But the model proposed in Option 1 alone optimises deliverability, cost, functionality and also delivers major strategic gains from being at the heart of partner stakeholders own plans for delivering their part in the wider growth of the economy through their own particular contribution. It is this partnership between clinicians, access to patients, clinical academic research and new infrastructure which is best delivered through the proposed route.

2.5 The Benefits of the InvEnt AC Option

An advantage of being a young and developing university is that models can be developed at the outset to address recognised failings in the sector. From a Health Innovation perspective, this has already started, with recruitment of researchers on the understanding that innovation is at the heart of their academic activity. The next essential steps to a successful innovation model are enshrined in the City Region Deal proposal – namely to develop a vibrant academia-industry-NHS ecosystem with the common goal of co-developing IPR to meet the needs of the end-user, while at the same time growing the med-tech industry within the City-Region. Examples of successful health clusters worldwide have a number of key ingredients, including innovative universities at their heart and the necessary critical mass of activity to drive knowledge exchange and facilitate a healthy circulation of skilled individuals amongst established and new companies, without the necessity to relocate over long distances. Co-location of InvEnt AC with an acute care hospital and hopefully primary care clinics, and in close proximity to the District General Hospital, coupled with engagement with key academic clinicians, provides the necessary backdrop for innovation which makes the best use of all of the disparate assets in Inverness through this attempt to create our own local system.

In addition to providing the necessary ecosystem to cultivate rapid innovation, the other key ingredient that the Deal will deliver is an **open access model** of innovation. The core concept is that the Inverness offering is an innovation pipeline, with multiple access and exit points, that is not predicated on the university seeking to commercialise all the IPR generated. Instead, the model actively encourages a mixed economy, ranging from fee-for-service contract research to fast-track invention from an SME through to rapid out-licensing of research generated by academics or clinical academics to the commercial sector, organised by the commercialisation team in InvEnt AC. In some cases, spin-outs will be deemed to be the most effective

means of delivering a particular technology to market. In this way, each of the partners will be able to concentrate on their strengths (academic – early stage research and discovery; industry – commercialisation, marketing; NHS – need identification, clinical research, end-user insights).

2.6 Cost Benefit Analysis of the Various Options, and the Anticipated Net Benefits

Identifying the beneficiaries

Target beneficiaries are in three groups:

- Rural health care – through innovations based on digital health, healthcare improvements, new professional clinical models customised to make use of the technical innovations
- Local entrepreneurs, microbusinesses and SMEs able to exploit the new research and commercialisation infrastructure
- Inward investors (for this purpose defined as any currently trading company not present in the region who creates new jobs, i.e. not re-located jobs from elsewhere in the UK)
- Researchers in UHI or other institutions who create a spin-out
- Funding UHI due to the gains for UHI in the increasingly important impact aspects of the REF, again permitting an increased research capacity and the linked improvement in undergraduate and post graduate training revenues

Quantifying the Impacts

This Economic Impact Assessment below was conducted by UHI's Economic Intelligence Unit. The quantified analysis, which culminates in Benefit Cost ratio calculations, relates just to benefits in Highland region. Following this, we provide narrative on ways in which UK impacts might differ from regional impacts, with these differences, in practice, depending on the nature of the new products and services.

Economic impacts in Highland from the InvEnt AC initiative (i.e. which flow from its outputs) will include:

(i) New direct employment generated through the provision of new products and services developed by businesses fostered or otherwise assisted through the R&D and innovation services and facilities provided through the initiative. This additional employment will be provided by a combination of new and existing businesses, and, potentially, joint ventures between businesses or businesses and the NHS.

(ii) Indirect (through the supply chain) and induced (through additional employee spending) impacts associated with additional direct employment.

(iii) Employment generated in local areas through the local delivery of services to people with health and care needs enabled by business innovation – e.g. pharmacists, nurses and care workers who will become able to provide services previously delivered through GPs and other specialists visiting outlying areas or through admissions to hospitals in Inverness and other centres of population.

(iv) Direct employment of the people who will be paid through the City Region Deal revenue funding to implement the initiative, plus associated indirect and induced impacts.

(v) Employment generated through the capital project (£4.3 million total cost).

(vi) Financial savings to the NHS and individuals (some of whom are financially supported by public funding) through new products and services that will be less expensive than current provision, or through curing or ameliorating their conditions with less expenditure required on treatments, GP

consultation, hospital visits and stays, etc.

The health and possibly social care benefits from the new products and services introduced as a result of the initiative will be considerable – with Highland residents (including those living in remote areas), residents of other rural areas in the UK, and other people benefiting depending on the nature of the new product or service. The expected economic impacts given below, would, nevertheless, provide a good rate of return for the City Region Deal funding even before attributing health benefits to this investment.

Initiative spending (capital and revenue) spans nine financial years, with supporting activity focused on eight of these years.

For the purposes of impact analysis, a period of around 20 years is taken, however, as this gives time for the impacts from new products and services developed in the latter years to be achieved.

Conventionally, in analysis for HIE and other public agencies, a full time equivalent job (FTE) supported by grant aid or other incentives is assumed to last for ten years – on the basis that some ventures fail in their early years and some don't achieve their employment expectations, but that others will exceed their projections by Year 10 and have continued (perhaps increasing) success after this.

In this analysis, impacts are given in FTE years to enable all of the categories of employment impact above to be combined and compared against the £9 million investment in the initiative – and with the average new product or service that makes it to market assumed to generate impacts for ten years.

Earnings from additional employment and "Regional Value Added" are also estimated as initiative impacts. Regional Value Added (RVA) is broadly gross employee earnings, plus employers' pension contributions to these employees, plus annual profit accruing to businesses/investors in the region (prior to depreciation and tax), plus business rates accruing to Highland Council. This concept of value added is more meaningful than GVA (a national measure) for regional impact analysis. Previous economic analysis for comparable life science business developments suggests that Regional GVA will be approximately 1.5 x gross earnings on average.

There is inevitably uncertainty in levels of impact when projecting forward ten or more years, but demand in the healthcare sectors will definitely expand as people live longer with increasing health and care needs as they age – with this demand especially high in Highland with its relatively elderly age structure and attractiveness for retirement. This contrasts with the higher risk associated with investments in other sectors where markets can decline as well as grow.

In the life sciences sector, employees are relatively well paid on average, and an average across new additional direct employment of £35,000 per FTE is assumed below for new products and services. The new posts will include management, administration, R&D, prototyping, marketing, and support staff (who will include graduates).

2.7 Estimates of Impact in Highland

(i) New Direct Business Employment

This will be generated by business development following the project outcomes targeted above of 10 new start companies from spin-outs or inward investment, 15 companies supported for product innovation (where they provide employment in Highland) and 20 new digital health and applied life sciences products and services. These 20 products and services will be substantive in relation to supporting additional employment through sales to customers, with other new products and services that will be introduced of lesser scale, and some not progressing to market after initial R&D.

Based on a review of evidence from BioCity Nottingham (where some 100 businesses had been established after ten years) and diligence reports from a range of research and development projects delivered in the Highlands and Islands, HIE provided advice that underpins the projected impacts below.

On average (and with significant variation around this), it is expected that the 20 new products and services developed by new or existing companies will, in their tenth year of "production", have realised £400,000 in new sales (net of any displacement), and with the average over the ten years as this builds up being £200,000 per annum per product/service – giving cumulative sales (at 2016/17 prices) of £40 million across the 20. Allowing for production inputs imported into the region and profits leaving the region, it is estimated that £22.5 million of this £40 million of sales (55%) would be Regional Value Added. This, on the assumptions above, would equate to £15 million of gross earnings (rounded) and 429 FTE job years.

These assumptions have been adjusted for **optimism bias** through reducing the expectations that we incorporated in our original draft business case by 25% following feedback from Government economists.

In some cases, achievement of impacts will have required venture capital investment and grant aid from HIE in addition to the City Region Deal funding that will have supported the development of the company, and/or product or service.

A number of the products and services will be competitive internationally, and this wider market penetration underpins the employment creation assumptions.

(ii) Indirect and Induced Employment

Since the average earnings of the additional direct staff will be relatively high, assumed induced impacts from the spending of these employees will also be relatively high. Evidence from relevant empirical impact studies carried out for HIE suggests that indirect plus induced employment impacts will be around 0.4 x direct FTEs – giving 172 indirect plus induced FTE years, earning a total of c£3.8 million at an average of £22,000 per FTE, and with Regional Value Added totalling £4.9 million where Regional Value Added is estimated at 1.3 x Gross Earnings for the categories of work involved.

Adding these indirect plus induced impacts to the direct impacts at (i) above gives, over ten years per new product or service at 2016/17 prices, the following impacts: 601 FTE years; £18.8 million gross earnings; and £27.4 million Regional Value Added (RVA).

(iii) Other Local Employment Generated

Additional local jobs associated with delivering the new products and services will vary by project, and indicatively it is assumed that 5 of the new products or services on maturity will support an average of 2 FTEs (averaging 1.5 FTES per year over the ten years). Adding an employment multiplier for indirect plus induced impacts of 1.3, and assuming that the average direct, indirect and induced FTE pays £25,000, this would give impacts across the projects over ten years totalling c100 FTE years and £2.5 million in gross earnings. RVA might average 1.2 x earnings since many of the direct FTEs will be public sector employees (or contracted services), which would give £3 million in generated RVA.

(iv) Operational Impacts

The financial projections for the initiative show a total of 38 FTE years in delivery staff costs, with a salary cost of c£3.442 million (at 2016/17 prices). Deducting an assumed total of 30% from this for employers' NI and pension contributions would give a total of £2.4 million in gross earnings (£63,000 per FTE year). Adding 0.4 to this employment impact for indirect plus induced employment at an average of £25,000 per FTE would give a total operational impact of 53 FTE years and £2.8 million in earnings. Assuming that RVA = 1.3 x gross earnings (to take account of depreciation of the new building), this would give an RVA impact of

£3.6 million.

(v) Capital Expenditure Impacts

Construction work on the building plus a proportion of fees and equipment gives a total of c£2.7 million that might generate regional impact – depending principally on who would be the main contractor for the building project.

Using ratios derived from comparable projects in the region that are used indicatively prior to tendering for impact studies of projects for HIE would give an indicative employment impact of 1 FTE year per £90,000 of capital spend (inclusive of indirect and induced impacts). Assuming average pay of £30,000 per FTE and RVA = 1.5 x earnings, impacts would be: 30 FTE years; £0.9 million gross earnings and £1.35 million RVA.

Overall Regional Impacts

Summing the above categories of impact gives:

	FTE Years	Earnings (£m)	RVA (£m)
Business Employment Generated	601	18.8	27.4
Other Local Employment	100	2.5	3.0
Operation of the Initiative	53	2.8	3.6
Capital Expenditure	30	0.9	1.4
Total	**784**	**25.0**	**35.4**

From the region's perspective, the impact totals 784 FTE years (which is equivalent to 78 FTEs where 1 FTE = 10 FTE job years).

Totals of £25 million in gross earnings, and £35.4 million in Regional Value Added would be a good return on the initial £9 million City Region Deal investment (of which almost half relates to a building with a life well beyond the period for which impacts are assessed above).

2.8 Benefit Cost Ratio (BCR)

The top level BCR based on the above analysis is thus £35.4m RVA/£9.0m Deal funding = 3.9 using the budgeted inflated costs.

However, other factors should be taken into account. As noted earlier, other public sector funding (e.g. grant from HIE) would often be provided in order to deliver the job creation within the new start-up or expanding companies. Based on an average investment cost of £200,000 per FTE generated through business developments (70 FTEs), which is assumed to include £50,000 of public sector money, a more comprehensive BCR would therefore be £35.4m/£9m+£3.5m = 2.8. These assumed private and public sector investments relate to private sector investment in the region that would not otherwise have been committed within the region – i.e. it is 100% additional on the basis that market failure would have prevented the development of the innovative products and services without the InvEnt AC initiative and that their commercialisation would not have been viable on a rate of return basis without the later public sector funding (assumed, see above, to average 25% of investment costs).

It should also be appreciated that the project impacts will be based on a wide range of other sunk investments from the public sector, such as the employment costs of the cohort of clinicians who will be involved in the initiative, and the costs of the UHI research base. Both of these will be a key part of the knowledge creation needed for the new commercial products and services. We estimate that these sunk costs would total ~£10m, although they are not included in the above BCR analysis. If they were, the BCR would fall to 1.6.

2.9 National Economic Impacts

The scale of market displacement nationally will depend on the extent to which sales of the new products and services within the rest of the UK would substitute for other UK produced goods and services. For many innovative products this displacement will tend to be low as their producers will require export markets to support the levels of output and employment that have been assumed above. For example, new products developed to diagnose Lyme disease early, ameliorate the symptoms of its sufferers (with fewer days off work) or cure those infected would have relatively limited markets within the UK compared with the scope for international sales.

The net BCR for the UK would also be reduced from the Highland BCR to the extent that the private funding invested in product and service commercialisation would otherwise have been committed to other investment in the UK (not necessarily in the life sciences).

Both of these important components in national BCR tend to be very difficult to quantify even where a specific new product or service is being assessed (e.g. for grant aid). Across twenty future developments in Highland whose nature is currently unknowable, it is not considered meaningful to attempt to estimate either displacement or a potential average BCR.

Nevertheless, after taking account project by project of displacement and alternative investment opportunities, national employment, earnings and value added impacts should be higher than for Highland to the extent that:

- Service delivery nationally supports jobs in local areas in other parts of the UK.
- Businesses from outside Highland benefit from the innovation services and facilities.
- Businesses expand nationally following successful new initiatives in Highland (with export benefits).
- Indirect and induced impacts from direct impacts that are additional nationally as well as regionally will be higher through a more extensive supply chain and more spending opportunities.
- Construction-related impacts will be higher.

It is also important to acknowledge that innovations originating in Highland through the InvEnt AC initiative that are adopted elsewhere in the UK (e.g. cost savings and improved health care through digital diagnosis and condition management) will reduce costs (and hence unproductive GVA) – enabling other health services to increase services and efficiency further in the context of increasing needs as people age and national health budgets shrink relative to need.

2.10 Innovation Benefits

BEIS analysts have estimated that the full economic return on public investment in innovation averages **around £8 for every £1 spent.** This is based on the following key assumptions:

- A £1 increase in public investment in R&D stimulates an increase in private investment of £1.36, based on the mid-point estimate of a study by Economic Insight (2015) into the relationship between public and private R&D investment.[1] This is an estimate of additional private investment, as the methodology controlled for any investment that would have occurred anyway.
- An annual rate of return of 50% on R&D investment, comprising one-third financial return to investors and two-thirds spillover benefit of improved productivity in the wider economy, based on a meta-analysis by Frontier Economics (2014)[2]. 50% was also the assumption for an overall rate of return to

[1] Economic Insight (2015) "What is the relationship between public and private investment in science, research and innovation?"

[2] Frontier Economics (2014) "Rates of return to investment in science and innovation"

the economy from private R&D investment used in a HERG, OHE and RAND Europe (2008) study into the value of medical research.

- The direct return to investors from innovative applications begin to be recouped after four years and last for an average ten year period, whilst the wider benefits of the new knowledge to the economy are longer lasting but depreciate at a rate of 5% per annum. These are conservative assumptions based on studies such as Rouvinen (2002).[3]

To avoid any double counting with our estimated regional employment and business benefits, these wider benefits to the national economy from investment in innovation are excluded from our regional BCR calculation at 2.8 above.

2.11 Health Benefits

The health benefits from the new products and services that will be generated through the InvEnt AC initiative are an important part of its rationale, and these benefits, as well as the economic impacts assessed above, can be set against the public funding that will be provided to enable these new developments.

The nature and scale of health benefits will depend on the particular products and services that will be developed, but are expected to encompass:

- Improved daily health, length of life and ability to stay in their own home of people who will be able to access new digital health products and services without waiting or travelling for appointments or needing to move into a care home (in which places are increasingly difficult to access). This will be of particular benefit to people living on their own and in relatively remote locations.
- Cure, or relief from the symptoms, of conditions or diseases with particularly high incidence in Highland. Lyme disease is an example – although this tick-borne disease, which can be carried by dogs, is increasingly affecting urban areas and its general incidence is growing.

Other potential products and improvements to local environments (e.g. water contamination reduction) are given above under *Examples of university-led early stage research with commercialisation potential*.

- Disease prevention and lifestyle improvements that will protect people from conditions such as diabetes, high blood pressure, etc.

- Progress through the current Scotland CAN DO health & wellbeing pilot in developing technologies for dealing with Inflammatory Bowel Disease.

2.12 Increase in Land Value

The building for the UHI's School of Health project that would be developed to support the InvEnt AC initiative would be on the Inverness Campus, where HIE owns 215 acres of land which could eventually support 125,000 square metres of property development. HIE has invested substantial public money in developing infrastructure on the site, and the return to this, the land cost and its management costs will depend on how much of this land is eventually sold for development or used by the public sector (including erecting buildings for lets of space to the private sector).

Life Sciences is the main focus of future Campus developments, with planned investments by NHS (as outlined above), UHI, HIE itself and the private sector building on the c28,000 square metres that has

[3] Rouvinen, P. (2002) "R&D Productivity Dynamics: Causality, Lags and "Dry Holes"

already been developed on the Campus - including 18,500 square metres for Inverness College UHI, 4,950 square metres for An Lòchran in which UHI has a presence, 4,080 square metres for student residences, a 250 square metres Scottish Vet Referrals building, and 1,000 square metres for Aurora House, which is part-occupied by a life science company and with the other space expected to be occupied soon. This includes around 500 square metres that HIE is planning for labs and offices for new business incubation.

HIE are currently planning a new building next to Aurora House for its pipeline of promising life sciences enquiries; and the InvEnt AC project, as profiled above, should generate further future demand on the Campus site for new starts and customised buildings for those that become established and grow their employment. Current Campus land value is c£300,000 per acre (net), and additional new build stimulated by InvEnt AC will realise a return on the public investment that has been committed to the development of the Campus; and with the prospect of this land value increasing in the future as the demand from the life sciences sector grows through increasing synergy between Campus occupants and the facilities (including the Centre for Health Sciences) on the adjacent Raigmore campus.

Although mindful of possible new Green Book guidance, it is not considered meaningful here to attempt to quantify the increase in the value of Inverness Campus land earmarked for life sciences-related development that the InvEnt AC project might generate.

2.13 Strategic and Non-Monetised Benefits

The main focus of the investment will be to establish the School as a leading force in commercialisation, innovation and job creation in the sector, building on the foundation of UHI's role as the lead regional provider of health education and world class life science research.

The varied benefits for the different key delivery partners are as follows:

For NHSH and other regional boards
- A major boost to NHSH consultant and Allied Health Professional recruitment and retention
- A World leading digital health expertise in remote and rural health care delivery
- University health board status and the prestige that brings in recruitment
- Service quality improvement

For UHI
- Significantly enhanced research impact and research power for UHI's life sciences, health and well-being disciplines
- Strengthened links to industry and the NHS
- Strategically planned contributions to the wider development around the region of key nodes of specialist niche excellence in R&D, new product development with businesses, and commercial outcomes
- Financial diversification from commercial income

For industry
- Strong technical, scientific, commercial and facility support for on-going product development
- Placements to guide and support academic and clinical applied research

For the wider economy
- A hugely strengthened inward investment proposition in life sciences
- Strategic and wide ranging workforce development
- A new multidisciplinary campus acting as a magnet for new industry, inward investment and increased Higher Education activity across the region
- New companies and jobs
- A thriving local life science cluster with a regional distributed presence and impact
- Growth of the Higher Education sector through a sustainable collaborative model

2.14 Indicative Costs and Benefits for the Different Options

The above regional impact analysis for InvEnt AC is built on defensible methodology and assumptions. We believe the project outcomes are also based on a balanced approach to achievability and challenge, with a built-in allowance for optimism bias and good value for money.

The following cost benefit comparisons seek to continue this analysis, but should be understood as more indicative for the purposes of comparison than the more rigorous approach which the main option permits.

The following table attempts to summarise this analysis of options. At current prices, capital and revenue contributions through the City Region Deal would each be approximately £4 million.

Indicative Cost Benefit Analysis of Options

					Indicative analysis of other options					
			Inovation models					CAPEX models		
	Option 1 - Invent Ac		Option 2	Option 3	Option 4	Option 5	Option 6	Optino 7	Option 8	Option 9
			Industry	NHS	HEIs	Do nothing	Extend CfHS	Lease cfHS	Buy CfHS	New UHI
Costs	£, Current prices	fte years								
Capital	£4,000,000		£3,000,000	£1,000,000	£4,000,000			£1,500,000.0000		£3,000,000.0000
Revnue	£4,000,000		£5,000,000	£7,000,000	£4,000,000			£12,000,000.0000		£5,000,000.0000
Total	**£8,000,000**									
Benefits from the consolidtaed outcomes										
New cumulative average sales	£40,000,000									
Gross Earnings	£14,666,667									
New Direct jobs Reginoal Added value	£22,000,000									
new Direct jobs		429	225	20	50			300		300
Indirect and induced jobs		172	90	8	20			120		120
Indirect jobs RVA	£4,907,760									
Other local jobs from health delivery		100	0	100	20			50		50
Other jobs RVA	£3,000,000									
Operational jobs - grant funded		53	40	10	100			38		38
Operational RVA	£3,600,000									
Construction jobs etc		30	20	0	15			5		5
Constructiion RVA	£1,350,000									
	£34,857,760	**784**	**375**	**138**	**205**		**N/A**	**513**	**N/A**	**513**

HIE have strategic ambition for the growth of jobs, GVA and turnover in the regional life science sector. The growth projections shown above and articulated in this business case will be a significant contribution to this growth.

Therefore the "Do-nothing" **Option 5** would in effect be to rely on other existing and planned measures, i.e. to add nothing to these other plans and deliver zero added value. As argued above, without a positive option, there would be a gap in the chain between the other measures that would make achievement of ambitious aspirations highly unlikely.

Option 2 assumes continuing access to the current support available to industry, and the models of support under the EU structural funds programmes (the Business Competitiveness and Innovation Strategic Investments), Regional Selective Assistance (RSA), Business Gateway, University Innovation Fund, Innovation Centres, Innovate UK, H2020 etc. Presuming that a new direct industry intervention could be devised which fills a gap which addresses life science product development in a manner not already covered, we would argue that the outturn from this intervention is a less effective model innovation. RSA interventions, of course, also rely on very large match funding contributions.

Option 3 assumes that NHS budgets could be augmented to permit innovation related activities to be undertaken by clinical staff, with sufficient funding for back filling the lost patient contact time in order to maintain services. Such processes are underway in the NHS across the UK, and organisations such as Scottish Health Innovations Limited operate to support commercialisation of this process. These

mechanisms are either not as effective as anticipated, or even if they are effective in certain locations, they are almost irrelevant in our region. The outcomes would still rely on links into the existing innovation system and support processes, but evidence to date suggest that the successes would be small. However, outcomes would result, which would be more than "Do nothing", but would probably be less effective than a large RSA package to industry. Perhaps the most significant outcome would be in health care improvements and related local job creation, which would inevitably become the main focus.

Option 4 assumes a package of support for university research, focused entirely on academically driven and internal processes for obtaining commercialised outcomes. Additional support would probably be aimed at increased levels of operational jobs, with more spend directed at research equipment. This is not a failed model of intervention, but we would argue that the lack of planned and financially supported engagement with industry and clinicians would be less productive than the InvEnt AC model.

Option 6 is impractical under the current circumstances for the Raigmore site. If it were to become practical, with removal of all the considerable barriers to implementation, it could be argued that it would deliver as good value as InvEnt AC, but with a lesser strategic partnership gain in working with the NHS.

Option 7 is similar to Option E in practical terms, except that the lease costs would be very high, as is currently experienced for our current activities as tenants in that building.

Option 8 would be an acceptable model, but is infeasible at present due to the need for prohibitively large loan funding which would be needed even after current lease income is taken into account.

Option 9 would be a credible "Plan B" should InvEnt AC fail to materialise due to other issues. It would however not generate the same level of benefits, given the extra barriers to collaborative research and interdisciplinary working which comes from physically co-locating with the NHS, industry and intermediaries

2.15 Additionality

The project has strong additionality, given that in the form described here it would not take place without the public funding. Also, the jobs created through and as a result of the initiative will generally be additional both in local rural areas and in the region as a whole.

Some variations with reduced outcomes, delivered over a much long period, could be anticipated through the organic growth of UHI, making use of the other co-investments. However this InvEnt AC investment is targeted on the missing piece of the infrastructure which is particularly related to commercial success. It is this focus on the commercial in a manner designed to link commercial, clinical and academic which could not be replicated without this funding.

2.16 Environmental Impact

The direct impact of the building will be an important aspect of the design brief. A BREAM excellent facility is not likely to be fundable for NHSH.

The project outputs themselves will have an impact on the carbon footprint of rural health care through reduced patient journeys to GP surgeries and hospitals achieved by telehealth solutions.

3. COMMERCIAL CASE

3.1 Public Sector Support

The UHI School of Health has strong public sector stakeholder support. It is seen as key to the continued economic development of the region. This support has translated into funding support from HIE and Scottish Government (see Financial Case). It is key to the workforce development plans for NHSH with a significant Memorandum of Understanding between UHI and NHSH. The project is seen as critical to the long term and continuing plans to develop the Campus and to its contribution to the development of the region by THC. The commercialisation focus of the City Region Deal project is fully supported by NHSH and

HIE.

In addition, the UHI collaboration with NHSH is of great significance for the whole strategy of UHI, particularly in relation to surgery waiting lists, outpatients, service quality improvements, and workforce development, through its strategic impact on recruitment and retention of clinical staff, and the health care and associated commercial opportunities that will be fostered.

3.2 Private Sector Support

The nascent life sciences cluster is very supportive of the UHI School of Health and the commercial focus of the project. The logic for them is the recruitment benefit of being at the heart of a cluster, access to prototyping facilities, access to internationally leading researchers, and the strong links to research active clinicians already in strong university supported research teams.

These principles are true for new starts, investments and existing corporates. A letter of support from Lifescan Scotland is included in Annex 2 - to follow.

3.3 University Collaborator Support

UHI already has strong collaboration with key university partners, including the universities of Aberdeen, Stirling, SRUC, Dundee and St Andrews. These include formal collaboration in the key areas of research which will play a part in delivering this project.

3.4 Procurement Strategy

The existing EU compliant NHS contractor framework will be used to procure a single contractor who will supply the unified design and build service. The framework includes prequalified contractors with extensive highly relevant experience.

The procurement details are now under discussion through Scottish Government, and a model for procuring one contractor with nested subcontracts for each party is the preferred model for cost effectiveness and in order to produce a single coherent design for the three or four component elements.

3.5 Recruitment Strategy

UHI core staff recruitment will be through normal processes, with a policy of wide advertising to gain the best recruitment. Recruitment to the Highlands can be problematic, but life sciences activities are less affected by these issues given the relatively high rates of pay that it is generally possible to offer. Employment will be within the core university, rather than in our member college institutions.

The recruitment of sessional NHS onto the UHI headcount will be limited in the first instance to current NHSH consultants and clinical staff. An internal audit of candidates has already been undertaken, and the model is currently in use, and works well. It also allows any research outputs from the staff to be counted in the UK-wide research excellence assessment process (the REF). The intellectual property issues relating to the new products will be handled under UHI's and NHSH existing IP policies

3.6 Contractual Issues

UHI and HIE have recently completed a joint capital project, with a specially created and very successful "Development Partner Agreement". It is anticipated that this model will be used for this project.

3.7 Risk Register

See Annex 3

4. THE FINANCIAL CASE

4.1 Context

This School of Health project will be part of a much larger shared capital development between HIE, NHSH and UHI on the new Inverness Campus. A first draft concept document outlining this larger project is provided in Annex 4. The City Region Deal project clearly gains enormously from being part of this larger project, but the delivery model will be based on discrete reasonably self-contained phases. The InvEnt AC project will thus be operational up to one year before the hospital.

The expenditure breakdown and profile is provided in Annex 5. This assumes a concept development, design and planning phase linked to the NHS project, but with a discrete construction phase for the UHI block.

The capital expenditure profile is based on very recent experience of similar capital projects in Inverness and prices at this stage are estimates.

In order to contribute to the shared design and planning phase of the rapidly moving shared capital project with NHSH and HIE, funding is requested for professional support in financial year 2016/17, the costs of which are presented as part of the capital expenditure in Annex 5. UHI will be able to carry the cash flow of this early start, provided we are able to claim these start-up costs retrospectively.

The capital expenditure profile is based on the draft programme as developed by the technical advisors to the collaborative project board for the joint capital project

The capital expenditure budget also contains estimated equipment costs, again based on several recent new laboratory facility developments.

The revenue expenditure is also provided, profiled over the whole ten year programme duration. All of the staff will operate within the new facility. The funded staff time will be entirely utilised on applied research, development and commercialisation activity. The funding provides all of the necessary resource – clinical, academic, technical and commercial – to deliver the outcomes of the project. It necessarily assumes that the resource is operated within and collaborates with the wider clinical and academic activities of the hospital and the university.

The revenue cost model for UHI's acquisition of consultant clinician research time has been developed with the close involvement of NHSH. It replicates an existing successful arrangement with current UHI-NHS split posts, which has proved effective for both organisations.

The revenue expenditure includes a rapid start to the research and commercialisation activity, in advance of the main capital build. This requires the early recruitment of research active clinicians to lead the UHI's collaborative applied life sciences near market research. The activity will take place in current facilities shared by UHI and NHSH, with a focus on developing existing projects to a state of readiness to enter rapidly into the commercial facility pipeline.

Revenue expenditure also includes normal UHI institutional rates for the contributions to the running costs

of the facility.

The overall City Region Deal funding of £9m, shown over the whole ten year programme, is sufficient for the proposed project, with no other direct funding streams involved. Other key investments are however very much part of the wider School of Health development, and should be considered as co-investment rather than match funding. This matrix of co-funding is also provided in Annex 6. This matrix contains ESIF funding from the European Union, which at this point has considerable uncertainty. The matrix therefore should be treated as indicative.

4.2 State Aid

There are various aspects to the state aid position, which will need further analysis, and which will soon be affected by Brexit. The facility will have various modes of operation.

Firstly the majority of the facility will be operated primarily for UHI and NHSH pre-commercial research and development. This will include the product suite and the research areas. Products developed through this pathway will use the pre-incubator prior to product launch.

These facilities will be used by other external groups, but will not generate commercial income or equity for UHI from the involvement of commercial companies. The pre-incubator will host only pre-trading groups. At the point of product launch or the creation of a company they will be expected to graduate to commercial incubator or serviced accommodation. Any residual benefit to these companies could be considered as a state aid to the company.

4.3 Financial Structures

The capital project will be delivered through the lead agency acting as the developer. At present the lead agency is still to be decided, but will be either HIE or NHSH. UHI and HIE have successful track records in developing shared facilities on the Campus. An SPV is not anticipated.

The developer would have partnership agreements with each future owner of the respective areas, and would be responsible for all financial management. UHI would be invoiced at a rate verified by certified progress by an external cost consultant. This model has been used successfully by UHI and HIE.

UHI is able to recover only 3% of VAT for most of its expenditures. The effect of this on the final grant would be the subject of auditable verification, and has not be taken into account at present.

5. THE MANAGEMENT CASE

5.1 Governance

UHI Project Management

Project Owner	Vice Principal, Strategic Projects
Project manager	TBA

Management of delivery and reporting

A monitoring and evaluation framework, based on milestones, KPIs (aimed at delivery of the Critical key Performance Indicators in the main text) and a clear system of reporting will be established.

Project Sponsor

The Project sponsor is the University of the Highlands and Islands.

Project Boards

- UHI Prince 2 project board – to be established.
- Faculty Science Steering group – already exists.

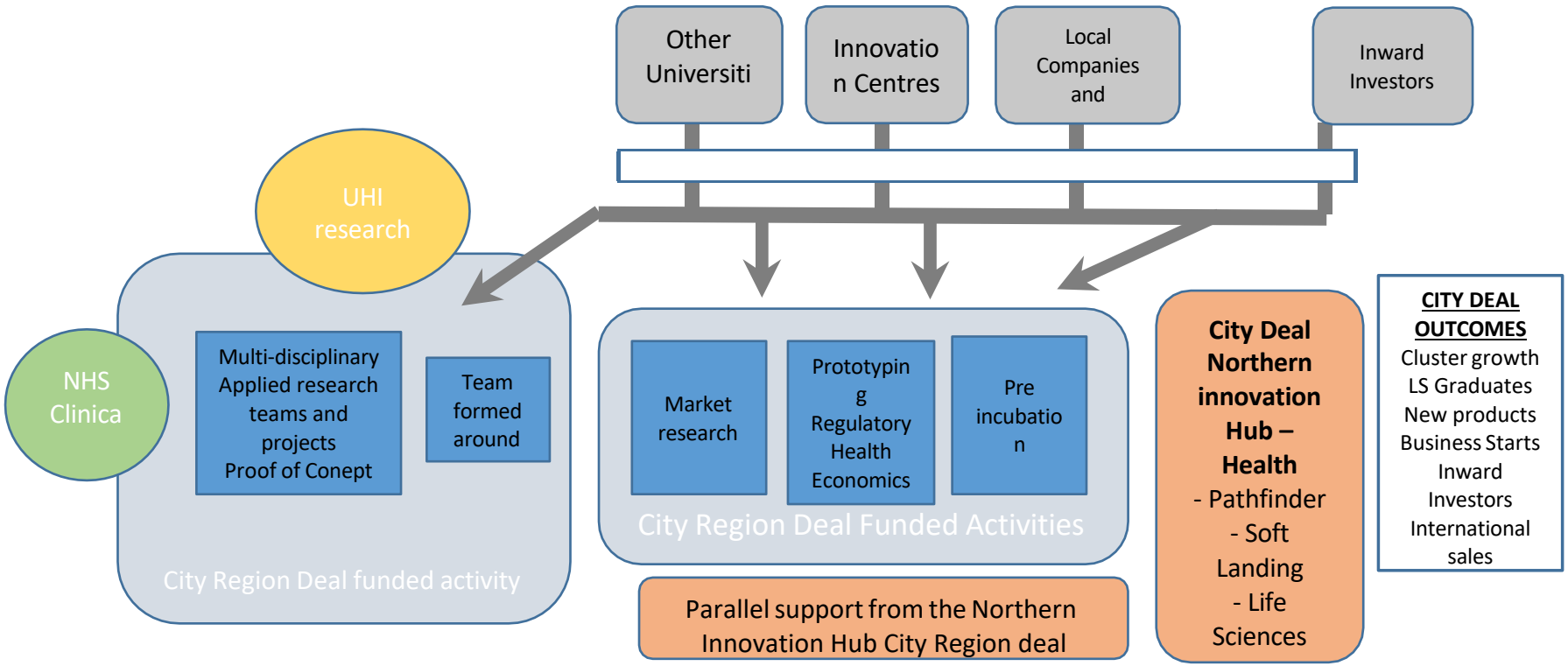
- Sector Commercialisation Steering Group – will be led by HIE (already agreed), with a remit to ensure that commercial focus is directed appropriately. It will be supported by an external panel of specialist commercial advisors who will provide the critical challenges at each stage of development.
- Regional Stakeholder Life Science Strategy Group – already exists at CEO level.
- NHS-UHI-HIE project implementation group – already exists.

Programme Board

A Programme Board has been established for all of the City Region Deal projects which will report to the Council's Planning, Development and Infrastructure Committee and to the Highland Community Planning Partnership.

Annex 1 Inverness City region Deal - Innovation system overview

Inverness City Region Deal - School of Health Innovation



Annex 2 Letter of Support Lifescan Scotland, already agreed with the CEO.

Annex 3 Risk analysis

Risk description	Causes	Consequences	Probability	Impact	Mitigation
Capital project risks	Construction delays, overspends, Supplier risks Planning issues	Financial losses Partnership risks Delays in revenue spend and project outcomes	3	2	Good project management Very clear legal framework
Inability to co-locate with NHSH and HIE	Lack of alignment of the city deal capex and the partner capital projects	Lost opportunity to gain the maximum synergy of co-locating with NHSH and HIE on the campus.	2	3	Plan for delivery of outcomes through alternate arrangements.
Inability to obtain clinical research time	Pressure on the NHS to prioritise short term patient outcomes	Lack of project ideas with commercial potential	2	5	Working closely with NHSH and HIE
Lack of projects with commercial potential	Poor choice of projects to support	Failure to deliver outcomes	3	5	Seek further intermediary support
Insufficient capacity in the local sector to achieve critical mass in the medium term	New developments do not happen in a sector which has not achieved full potential to date	GVA growth not achieved	4	3	Work with HIE in support of the Inverness proposition
UHI health research fails to deliver quality academic research	Various – loss of critical resource, lack of capital equipment investment	Lack of collaboration potential, funding and viability	2	5	Continued investment to maintain growth and career development
Acute care centre does not gain funding	Cut-backs	Reduced ability to collaborate	2	4	Develop links to primary care via alternative means
Failure to recruit key research and commercial staff	Competition from other locations, lack of career opportunities	Failure to deliver spend and outputs	3	4	
Other co-investments do not come on stream, such as ESIF funding	On-going delays in defining procedures and eligibility	Lack of co-investment synergy gains	1	3	

Annex 4 Concept Briefing – in process of updating by HIE and NHSH - to follow.

Annex 5 Financial Annex Expenditure Summary Capex and Revenue

CAPEX		Financial Years	£k																	
Build	**Apr**	**Jun**	**Oct**	**Jan**	**Total**	**Apr**	**Jun**	**Oct**	**Jan**	**Total**	**Apr**	**Jun**	**Oct**	**Jan**	**Total**	**Apr**	**Jun**	**Oct**	**Jan**	**Total**	**Total**
					2016/17					**2017/18**					**2018/19**					**2019/20**	
	q1	**q2**	**q3**	**q4**		**q1**	**q2**	**q3**	**q4**		**q1**	**q2**	**q3**	**q4**		**q1**	**q2**	**q3**	**q4**		
Professional Support																					
OBC/FBC			2	2	4					0					0					0	4
Joint PM					0	5	5	5	5	20					0					0	**20**
Legal					0	5	5	5	5	20					0					0	**20**
Strategic Brief & Visioning			15	5	20										0					0	**20**
Project Brief inc specialists			15	15	30	6	6	6	6	24	4.5	4.5	4.5	4.5	18.0	4.5	4.5			9	**81**
ITT for Contractor led Design team					0					0					0					0	**0**
Design development					0					0					0					0	**0**
2nd Stage tender					0					0					0					0	**0**
Construction					0					0	200	200	500	700	1600	800				800	**2400**
Commissioning					0					0					0	45				45	**45**
Land					0					0	200				200					0	**200**
					0					0					0					0	**0**
Subtotal	0	0	32	22	54	16	16	16	16	64	405	205	505	705	1818	850	5	0	0	854	**2790**
VAT (unrecoverable)					11					13					364					171	**558**
Total					**65**					**77**					**2182**					**1025**	**3348**
Equipment etc					0					0					0	634				633	**633**
Subtotal					0					0					0					633	**633**
VAT					0					0					0					127	**127**
Total					**0**					**0**					**0**					**760**	**760**
Total Capex					**65**					**77**					**2182**					**1784**	**4108**

REVENUE												
City Region Deal - revenue profile				**FY**		**£**						**Total**
Staff costs	**Notes**	**2016/17**	**2017/18**	**2018/19**	**2019/20**	**2020/21**	**2021/22**	**2022/23**	**2023/24**	**2024/25**	**2025/26**	
sessional	heads		2	3	5	5	5	5	5	5		
			£69,216	£103,824	£173,040	£173,040	£173,040	£173,040	£173,040	£173,040		£1,211,280
Lead clincical academic	fte		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		
			£92,288	£95,057	£97,908	£100,846	£103,871	£106,987	£110,197	£113,503		£820,656
Commercial staff	ftes		2.0	2.0	2.0	2.0	2.0	2.0	2.0			
			£145,024	£149,375	£153,856	£158,472	£163,226	£168,123	£173,166			£1,111,241
Technical/support	ftes			1	2	2	2	2	2			
				£34,278	£68,557	£68,557	£70,614	£72,732	£74,914			£389,651
Salary costs			**£306,528**	**£382,534**	**£493,361**	**£500,914**	**£510,750**	**£520,882**	**£531,317**	**£286,543**		**£3,532,828**
	ftes		2.90	4.10	5.50	5.50	5.50	5.50	5.50	1.50		
O/H recovery per capita average	14,285.71		£41,429	£58,571	£78,571	£78,571	£78,571	£78,571	£78,571	£21,429		£514,286
Consumables, other direct			£10,000	£20,000	£30,000	£35,000	£36,000	£38,000	£38,000	£38,286		£245,286
Direct overheads - flat rate	£180/m2				£100,000	£100,000	£100,000	£100,000	£100,000	£100,000		£600,000
Total revenuecosts			**£357,957**	**£461,105**	**£701,933**	**£714,485**	**£725,322**	**£737,453**	**£747,888**	**£446,257**		**£4,892,400**

City deal - budget profile			**Fiscal yr**		**£k**						**Total**
	2016/17	**2017/18**	**2018/19**	**2019/20**	**2020/21**	**2021/22**	**2022/23**	**2023/24**	**2024/25**	**2025/26**	
Capital	£64,800.0	£76,800.0	£2,181,600.0	£1,784,400.0							**£4,107,600.0**
Revenue	£0.0	£357,956.6	£461,105.2	£701,932.5	£714,485.5	£725,321.7	£737,453.0	£747,888.2	£446,257.4	£0.0	**£4,892,400.0**
Total	**£64,800.0**	**£434,756.6**	**£2,642,705.2**	**£2,486,332.5**	**£714,485.5**	**£725,321.7**	**£737,453.0**	**£747,888.2**	**£446,257.4**	**£0.0**	**£9,000,000.0**

Annex 6

The Co-investment Matrix for the whole UHI School of Health Development

Overall Investment matrix			Academic years							
Investment			**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**Total**
ESIF	PGRs	UHI		£120,000	£240,000	£240,000	£150,000	£30,000		£780,000
		Other HEIs			£120,000	£120,000	£120,000	£60,000		£420,000
	New Curriculum			£610,000	£310,000	£210,000				£1,130,000
	Funded Places	UG				£374,175	£673,515	£673,515		£1,721,204
		PG		£30,000	£30,000	£30,000	£30,000			£120,000
	Sector engagement			£100,000	£100,000	£100,000	£100,000	£100,000		£500,000
										£4,671,204
UHI - nursing project	Integration work			£120,000	£120,000	£60,000				£300,000
SFC teaching grant- nursing	Funded places				£600,000	£1,200,000	£1,800,000	£1,800,000		£5,400,000
										£5,700,000
Additional Earned income										
by new researchers	Grants					£18,212	£237,322	£459,902	£665,771	£1,381,207
by new researchers	Teaching					£4,553	£42,207	£135,249	£218,910	£400,918
by existing team	Grants			£50,000	£100,000	£150,000	£150,000	£150,000	£150,000	£750,000
										£2,532,125
REG	REF 2014 allocation		£224,000	£265,000	£300,000	£300,000	£300,000	£300,000		£1,689,000
	REF 2020 target								£640,000	£640,000
										£2,329,000
HIE research and commrcialisation grant			**£81,780**	**£649,721**	**£875,302**	**£989,654**	**£849,672**	**£553,870**		**£4,000,000**
City deal funding										**£9,000,000**
Total funding package			**£305,780**	**£1,944,721**	**£2,795,302**	**£3,796,594**	**£4,452,716**	**£4,262,535**	**£1,674,681**	**£29,432,329**

Appendix 2 Explanatory note requesting 2016/17 Budget

Supporting case for 2016-2017 Budget

Rationale

Placed within The UHI School of Health and Life Sciences the Invent AC project is very closely linked to an NHS Scotland capital project. It is this linkage which is driving the rapid start to expenditure which Invent AC will need, rather than delivery of the main purpose of the project which is commercialisation, which could move at a slower pace if considered in isolation.

This current NHSH project is to establish a 30 bed elective care centre (HECC) in Highland. A budget pf £200m has been allocated by the Scottish Government to create 5 new centres across, and also to extend the existing Golden Jubilee ECC at Clydebank. Inverness is proposed as the first of the new centres, with a nominal £20m already allocated.

NHSH have made the case for locating the new ECC on the Inverness campus. This case is based on positive benefits of the new campus and on certain dis-benefits of the existing Raigmore campus, just across the A9 to the west of the Inverness campus. However it is also based on the added value which can be delivered by co-locating the ECC with both UHI and with general practitioners, either to deliver research into digital health, informatics and telehealth, but also hopefully to co-locate also with GP clinics which will increase the volume and pace of interdisciplinary working.

UHI and NHSH have an active and growing partnership, reflected in our MoU and embedded collaborative strategies, based on UHI's increasingly significant role in education and research in health and social care, both as the main provider in the Highlands and Islands, and as a key centre of excellence in remote and rural health case which is of such significance to delivery of NHS services in the whole North of Scotland and beyond. This partnership is being positioned to make a major impact on service quality improvement and also workforce planning and development at every level. The key contributions of UHI are rapidly becoming a coherent and broad based competence, which is demonstrated by the following.

- Existing health and social care curriculum
- Current research capabilities, which having achieved world leading and internationally excellent standing and are again growing rapidly in volume as we make very significant investment with our stakeholders.
- The new Scottish Graduate Entry Medical School SCOTGEM, which will set up its Northern Hub in Inverness as partnership between Universities of St Andrews and Dundee and UHI.
- The transfer of pre-registration nurse education to UHI form University of Stirling, which is predicated on the added value UHI can bring to nurse education in the north, enhanced by a new approach to multi and inter professional education supporting new and innovative models of multidisciplinary health care designed for remote and rural contexts.

So much of this potential for UHI is dependent on this UHI-NHS partnership. Equally, much of NHSH strategic planning is increasingly linked to UHI. This new plan for a second phase of our co-location is thus of great significance to the region. It is also true to say that there is a sense of urgency in the Inverness stakeholders to make the HECC part of the very first phase of the wider Scottish ECC programme, given this rare opportunity to be at the head of the queue for investment.

All of this this has been highlighted in this because the link between the Invent AC and HECC projects does place time constraints within which it would very beneficial to operate, but which do impose some challenges on the City Deal timescales. However it is clear that allowing UHI to make an early start will greatly benefit the implementation and the added value we can deliver together.

Another key dimension to the project is the role of HIE as the owner of the campus and the lead agency overseeing the campus masterplan and the development of suitable projects to establish the campus as driver of regional economic development. They are strongly supportive of the HECC/Invent Ac col-location on the campus, and are already supporting the initial phases of the project by providing the specialist expertise and project leadership of the different project boards already set up which will initiate the strategic discussion and project briefing. An initial draft briefing paper is appended to the main OBC, and is in the process of being refreshed. The partners have agreed to fund a programme advisor/co-ordinator, to direct the joint working to deliver all of the input to the NHS IA, to be recruited by HIE.

Proposal

NHSH require approval of their "Initial Agreement" (IA) by March 2017. This target date for submission of the IA is the end of December 2016. This will require a more detailed articulation of the added value which will result both from the partnership with UHI, and in particular the added value activities which will be made possible by this co-location on the new campus. This statement of collaborative added value will then be a key part of the case for their new building. It will also support the primary care component of this three way co-colocation, which is now entering a public consultation phase. Initial drafting will take place at a workshop on 8th September 2016.

The IA will require that the capital project is taken to Royal institute of British Architecture (RIBA) Programme of Work Stage 2, which will establish a concept design and the initial estimated budget which can be used in the first stage procurement of the design team and the contractor, probably as a unitary procurement for the full design and build single contract. The early budget which UHI is requesting is to allow us to take part in the work to deliver the stage three documentation. Despite the links to the NHS projects, these costs would be required even if Invent AC either detached from the HEEC project and became a stand-alone activity (see options in the main economic case), or if it were delayed and a different option selected, such as a connected wing of the HECC.

Work is planned to start ASAP to deliver this strategic briefing and visioning statements, leading int0 the concept design and procurement processes.

The following key tasks now need to begin in earnest:

A. Develop strategic briefing and visioning
B. Develop project brief and concept design
C. Contribute to the joint HECC and Invent AC planning application process.

The draft programme for the project is given in Annex 1.

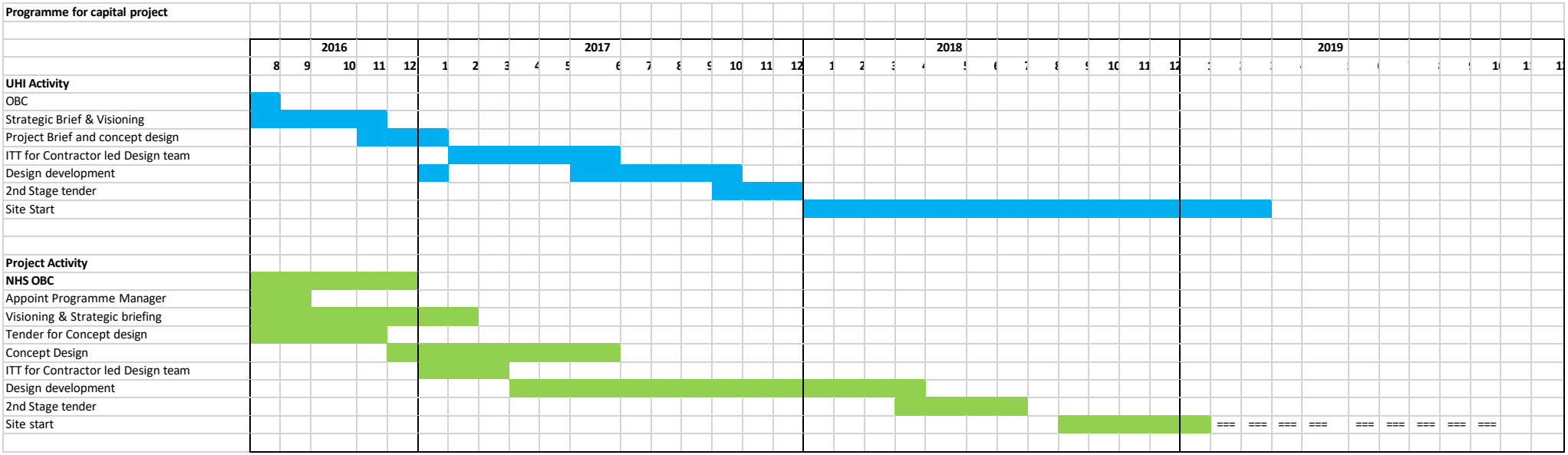
For each of these work packages, UHI will incur costs which will be consolidated as part of the overall capital budget. The expenditure items UHI will need to make to deliver the UHI input to each of these work-packages will be as follows:

1. HIE to appoint the shared project advisor/co-ordinator, with a funding contribution from UHI.
2. Appoint a specialist consultant as the UHI Project Director – see attached draft ITT in readiness for commencing the procurement.
3. Appoint professional support team, such as consultants for specialist facility design and cost consultants.

4. Appoint an internal UHI project manager
5. Appoint UHI legal advisors team as work begins on a four way MoU, Heads of Terms and finally Partner Agreements for delivery of the project.

The estimated costs for these tasks is £65k in this financial year, as is shown in the financial annex of the main OBC.

Annex 1 Invent AC draft programme of activity



Invitation to Tender

Project Director Services

University of the Highlands & Islands
Life Sciences Commercialisation Facility

at

The Inverness Campus
Inverness.

Issued:
Reference:
University of the Highlands & Islands
12b Ness Walk
Inverness
IV3 5SQ

Contents

Glossary

UHI	University of the Highlands & Islands
ITT	Invitation to tender document
AP	Academic Partner
FTE	Full time equivalent

1. Background

The University of the Highlands and Islands is the United Kingdom's leading integrated university encompassing both further and higher education. We are not a traditional university, being one of a new breed of tertiary institutions, the only one in Scotland and one of only a few in Europe.

Based in the Highlands and Islands of Scotland, our distinctive partnership of 13 independent colleges and research institutions is locally based and rooted in communities, but with national and international reach, as part of a regional university structure.

As part of our ongoing growth and development, UHI is creating new academic and operational structures, the first of which will the UHI School of Health, Social Care and Life sciences. Covering, education research and knowledge exchange, this outward facing structure will be strongly focused on student experience and success, and linked to employer demand and serving the regional economy and society. The project within this tender will form a critical part of the infrastructure to achieve these purposes.

2. Introduction

UHI is part of newly formed collaboration whose purpose is to develop a life science research and commercialisation facility (Invent AC) on the new Inverness Campus, co-located with a new NHS Elective Surgery hospital, and possibly with two new Primary Care Clinics, and also an innovation Hub facility operated by Highlands and Island Enterprise. The whole is currently titled Centre for Health Science Phase 2 (CfHS2)

Funding agreements for the Invent AC component of this joint project are in the final stages of development with the UK and Scottish Governments, under the Inverness City Region Deal. A Heads of Terms between the Highland Council and the funders has been signed, and the UHI Invent AC project is part of this in-principle agreement.

The deliverable for UHI will be a new facility, owned by UHI, either as part of one large single building, or as a physically joined wing, or simply co-located on the same min-campus. The legal agreements and the decisions on procurement, design and delivery of the building are not yet in place. At this point, the "Developer" role within the CfHS2 collaboration is still to be decided, although it will not be UHI. However, UHI has recent experience of similar collaborative projects with these partners, making the bigger project more easily planned and delivered.

The Outline and Full Business Cases for the whole programme are currently being developed, under the Green Book Treasury process. The funding for the NHS Elective Surgery unit has been allocated by Scottish Government, as part of a national programme of elective surgery investments, with Inverness being the most advanced project with an expectation that a framework procurement for a design and build contractor will commence in 2017.

UHI now wishes to procure consultancy services of an estates professional with the correct skills and experience to support UHI in the wide range of activities needed to take part on this complex collaborative project. The Project Director will support UHI user groups to co-ordinate the user

requirements, and support UHI's Project Owner and Project Manager in the delivery, management and governance of this project, supporting the budgeting, risk management and full delivery of the project. The Project Director will act as the main point of contact with the developer, the contractor, and the cost consultants and project managers.

3. Purpose and scope of this Document

The purpose and scope of this ITT is to:

- explain to those invited to tender the timetable and process for this procurement;
- set out the requirements and provide detail of the commercial, technical and legal provisions required by UHI;
- Provide those invited to tender with sufficient information to enable them to respond fully to this ITT with an offer capable of acceptance;
- explain the information required in responses to this ITT and, through the detail included with the supporting documents, provide guidance for tendering responses;
- explain the administrative arrangements for the receipt of responses; and
- set out the evaluation criteria that will be used to evaluate the responses, and to identify the organisation(s) to perform the services in the next stage of the procurement process.

3. Statement of Requirements

The Project

The UHI project deliverable will be a new facility (nominally entitled "Invent AC"), fully owned by UHI, either as part of one large single building, or as a physically joined wing, or simply co-located on the same min-campus, (the whole being currently termed the Centre for Health sciences Phase 2 = CfHS2). The size of whole joint project whatever the configuration is projected to be between 6,000 and 10,000 m2, with the Invent AC space (the subject of this tender) covering c. 800-1000m2.

The likely programme of activities expected of UHI will be strongly linked to the wider project, but specifically for UHI will be as follows:

1. Develop "Green Book" Outline and Full Business Cases and gain approval for HM Treasury, BEIS, and Scottish Government for Invent AC. ASAP
2. Gain full approval through University Court. ASAP
3. Appoint and manage key professional services, and develop the necessary legal agreements with the collaborators, the Developer and the land owner.
4. Support the development of the wider Strategic Brief & Visioning statements for the CfHS2, focusing on UHI's requirements within InvEnt AC.
5. Contribute to the Project Brief and input to concept design and procurement of the concept design team for CfHS2.
6. Represent UHI in the ITT process for the Contractor led Design team.
7. Detailed Design development
8. 2nd Stage tender and procurement. Current target October 2017
9. Site Start and project delivery. Current target Jan 2018.

The Project Director will provide expert support to UHI to the end of item 9.

In order to manage the link to the NHSH capital project, which has yet to secure a full and final approval and definite start date, there will be a break in the contract at March 2017, at which point the project may terminate, or change significantly in to a stand-alone project for UHI.

The Role

The Project Director role will provide the focal point for all client contact with CfHS2 consultants and contractors. They will use their technical knowledge to support the client in their decision making but will also fulfill the role of providing a mechanism to ensure regular dialogue with the design team and contractor to promote problem solving, team working and risk sharing. Key to this role will be good negotiating and facilitation skills to encourage teamwork and a successful outcome for all. They will work closely with the Project lead consultant(s) to manage areas of risk, budget control and will work with others in the team to foster and embed a culture of teamwork and problem solving.

The key duties will therefore be:

- Act as the sole point of contact for the delivery team
- Define and manage the lead consultant(s) performance
- Ensure the delivery team receives client decisions on time
- Receive and review detailed reports on the project from the delivery team and establish formal reporting arrangements on project progress
- Co-ordinate and direct user input to the project.
- Monitor implications of changes in scope and qualify of project in relation to capital costs, life cycle costs and whole life costs
- Report to UHI's Project Owner.

You are invited to prepare a tender that shows the cost and resource profile to deliver the project director role. Please provide concise statements of methodology, overall anticipated programme of effort, recent relevant experience, price, ability to comply with the project timescales, ability to work in the Inverness, and any other issues which you consider to be relevant.

For guidance, experience suggests that an average of 7 days per month will be required, but the profile of work may vary considerably over the duration of the project.

4. Procurement Process

4.1 The procurement process is a restricted tender to a number of practices who offer project management services.

4.2 The procurement process will follow the following timeline:

Tender documents issued	9th September 2016
Questions related to tender to be submitted by	23rd September 2016
Tender return date	30th September 2016

Evaluation and appointment	tba – October 2016
Project Completion date	March 2019

5. Tender Evaluation

UHI will score the submitted tenders on the basis of a quality/cost matrix. The Quality/Cost weighting will be 70/30. Within the Quality evaluation the following criteria will be used:

- Relevant Experience 50%
- Demonstration of understanding of the role 20%
- Level of time commitment offered 30%

5.1 UHI does not bind itself to accept the most economically advantageous tender, or part, or all of any tender, and the acknowledgement of receipt of any submitted tender shall not constitute any actual or implied agreement with the tenderer. The UHI also reserves the right to accept any part, or all, of any tender or tenders at our sole discretion. To this end, we reserve the right to award different parts of the tender separately to different contractors.

5.2 No part of any tender submitted will be returned to any tenderer.

5.3 When the final decision on the results of the tender analysis has been made, all tenderers (whether or not they have been successful) will be informed, in writing, of the decision in relation to the contract award. No other information will be given on the progress of the tendering. However, after contract award notices have been received, unsuccessful tenderers are entitled to request and receive details of the characteristics and relevant advantages of the successful tender(s), when compared with their own; this might take the form of a debriefing meeting. Any such debriefing meetings will be at the discretion of, and co-ordinated by, UHI.

5.4 UHI reserves the right to accept or reject any tender and does not bind itself to accept the lowest or any tender.

6. Tender Conditions

6.1 In submitting a response to this ITT it will be implied that you accept all the provisions of this ITT including these conditions.

6.2 The UHI reserves the right to issue the response to any clarification request made by you to all organisations invited to tender unless you expressly require it to be kept confidential at the time the request is made. If UHI considers the contents of the request not to be confidential, it will inform you and you will have the opportunity to withdraw the request.

6.3 The information contained in this ITT and the supporting documents and in any related written or oral communication is believed to be correct at the time of issue but UHI will not accept any liability for its accuracy, adequacy or completeness and no warranty is given as such. This exclusion does not extend to any fraudulent misrepresentation made by or on behalf of UHI.

6.4 By issuing this ITT, UHI is not bound in any way to enter into any contractual or other arrangement with you or any other party.

6.5 It is intended that the remainder of this procurement will take place in accordance with the provisions of this ITT but UHI reserves the right to terminate, amend or vary the procurement process by notice to all tendering organisations in writing. UHI will accept no liability for any losses caused to you as a result of this.

6.6 You will not be entitled to claim from UHI any cost or expenses that you may incur in preparing your response irrespective of whether or not your tender is successful.

6.7 All information supplied to you by UHI, either in writing or orally, must be treated in confidence and not disclosed to any third party (save to your professional advisers) unless the information is already in the public domain.

6.8 There must be no publicity by you regarding the project or the future award of any Contract unless UHI has given express written consent to the relevant communication.

6.9 UHI undertakes to use reasonable endeavours to hold confidential any information provided in the proposal submitted, subject to the UHI''s obligations under law, including the Freedom of Information (Scotland) Act 2002 and the Public Contracts Regulations 2006 (S.I. 206 No 5).

If the tenderer considers that any of the information submitted in the proposal should not be disclosed because of its sensitivity, then this should be clearly stated in your response with your reason for considering it sensitive. UHI will then consider the sensitivity statement before replying to any request received under the Freedom of Information (Scotland) Act 2002. **It is not acceptable for you to state that the entire document is sensitive**.

6.10 Any attempt by you or your appointed advisers to inappropriately influence the contract award process in any way will result in your response being disqualified. Any direct or indirect canvassing by you or your appointed advisers in relation to this procurement or any attempt to obtain information from any of the employees or agents of UHI concerning another tendering organisation may result in disqualification at the discretion of UHI.

6.11 UHI reserves the right to disqualify you if you do not submit your response in a manner consistent with the provisions set out in instructions to tenderers and statement of requirements.

6.12 It is your responsibility to ensure that any consortium member, sub-contractor and adviser abides by these conditions of tender.

6.13 Your response should remain valid for acceptance for a minimum of 90 days from the date it is submitted.

7. Equal Opportunities Policy

UHI has an Equality Opportunities Policy and is committed to equality of opportunity and non-discrimination in all aspects of its work.

UHI will promote opportunity for all, particularly for study, employment and involvement in its community, without discrimination on grounds of gender, sex, age, disability, religion and socio-economic background, sexual orientation, ethnic origin or race. This requires the promotion of practices both to overcome existing educational barriers and geographical isolation, and to provide opportunities which reflect the linguistic and cultural diversity of UHI. UHI requires its students, staff, clients and visitors to behave and communicate in nondiscriminatory ways and to

support, implement and develop institutional practices and procedures that promote and reinforce equality of opportunities and treatment for all.

To ensure that this is implemented, we require all outside organisations with whom we enter contracts or make other arrangements for goods, works or services, and any sub-contractors that they might use, to incorporate Race, Equality and Equal Opportunity principles in their employment practices, so that all our staff, students and visitors are treated with dignity and mutual respect.

Furthermore, it is a legal requirement, under the provisions of the Equality Act 2010, for Public Sector bodies to ensure that all companies with which it trades are fully compliant with UK and EU Equal Opportunities Legislation. Please therefore enclose with this tender a copy of your company's published Equal Opportunities Policy Statement and also a copy of such a statement for any sub-contractor that you intend to use. We will not be able to place any business with you until you have done this. Your company will be expected to comply with any Acts of Parliament or Statutory Instruments concerning discrimination in employment, with regard to gender, marital status, sexual orientation, family circumstances, colour, race, ethnic or national origin, disability (physical or mental), religious or political beliefs, trades union membership or age.

Suppliers/contractors/sub-contractors working UHI premises will also be required to comply with the relevant sections of the UHI's Equal Opportunities and Health & Safety Policies.

The UHI Equal Opportunities Policy and Health and Safety Policy can be viewed at: http://www.uhi.ac.uk/uhi/governance/policies

8. Insurances

The contractor shall indemnify UHI and insure against any expense, liability, loss, claim or proceedings whatsoever arising under any statute or at common law in respect of personal injury to or death of any person whomsoever arising out of or in the course of or caused by the carrying out of the contract, unless due to any proved act or neglect of the UHI or of any person for whom UHI is responsible.

The contractor shall indemnify UHI against and insure and cause any sub-contractor to insure against any expense, liability, loss, claim or proceedings in respect of any damage whatsoever to any real or personal property to an amount not exceeding £5,000,000 for any one occurrence in so far as such damage arises out of or in course of or by reason of the carrying out of the contract and is due to the negligence, omission or default of the contractor, or any person for whom the Contractor is responsible or any sub-contractor or person for whom the sub-contractor is responsible.

The contractor shall produce such evidence as UHI may reasonably require that the aforementioned insurances have been taken out and are in force at all times during the contract.

Therefore, contractors will be required to hold, and provide evidence of holding, up-to-date insurance policies to cover themselves, throughout the period of the contract, as follows:

Public Liability Insurance	£5million
Employers Liability Insurance	£5million
Professional Indemnity Insurance	£2million for any one claim

Sub-contractors may be appointed by the successful tenderer, with the prior approval of UHI, but the sub-contractor must then fully meet all of our specified requirements, including Health & Safety requirements and all aspects covered in clause 7 above, and must be suitably qualified for the work being undertaken. Sub-contractors will also be directly managed by the contractor to whom the award was made and UHI will have no direct managerial or financial dealings with them.

Your company must ensure that any sub-contractor you appoint has their own separate insurance cover in place to cover them for the eventualities in the insurance paragraph above and that they fully understand their responsibilities and commitments with regard to our Health and Safety and Equal Opportunities requirements detailed. Failure to do so will make your Company liable for any loss, damage or infringement that may occur.

9. Instructions to Tenderers

9.1 Offers must be delivered before the Tender Deadline which is 12 noon on 5 November 2012. Late Tenders cannot be considered under any circumstances.

9.2 You may submit, by no later than xxxxx, any queries that you have relating to this ITT. Please submit such queries by email to Jacqueline.barclay@uhi.ac.uk. Any queries should clearly reference any appropriate paragraph in the documentation and, to the extent possible, should be aggregated rather than sent individually. As far as is reasonably possible, UHI will respond to all reasonable requests for clarification of any aspect of this ITT and supporting documents, if made before the above deadline. UHI will aim to provide responses by xxxxxx, after which time no further queries will be answered.

9.3 You must inform UHI in writing if there is any change in control, composition or membership of your organisation or your consortium members subsequent to your expression of interest in this procurement process. UHI reserves the right to disqualify you from the procurement process as a result of any such change.

9.4 You are reminded of the eligibility requirements that apply to this procurement process at all times. Any change in your eligibility must be notified immediately to UHI in writing and may result in your disqualification from the procurement process.

9.5 You must state if you will be using any third party contractors to deliver the services and ensure that all relevant terms and conditions are applied within any relevant sub-contract. You will be fully responsible as the prime contractor for all third party sub-contractors.

10. Preparation and format of Responses

10.1 Responses, all documents and all correspondence relating to the tender must be written in English.

10.2 You should consider only the information contained within this ITT and supporting documents, or otherwise formally communicated to you in writing when making your offer.

11. Acceptance of Tenders and Pre-Contract Negotiation

11.1 Until the conditions set out in Section 11.2 below are satisfied, any discussion and/or correspondence between UHI and the tenderer shall be entirely subject to contract and conducted without any obligation whatsoever by UHI to enter into or become bound by any contract with the tenderer.

11.2 A contract shall not be concluded between UHI until the tenderer has confirmed final acceptance of an offer of contract from UHI and has received a UHI purchase order, duly signed by, or on behalf of, the UHI Purchasing Officer, or Director of Finance, or other Authorised Officer, which has been specifically raised for this purpose. Your final acceptance of the offer of Contract shall be deemed to incorporate any modification or amendments thereto agreed in writing by UHI in consequence of any discussions or correspondence referred to in Section 11.1 above.

11.3 Save as notified to the tenderer in writing by UHI Purchasing Officer, or Director of Finance, no Officer of UHI is authorised to change, amend or modify any of the Terms or Conditions herein relating to pre-contractual negotiations and/or acceptance of tender.

12. References

12.1 Please detail below contact details for two referees to whom you have supplied this or similar services and who may be approached in confidence by ourselves to ascertain their opinions regarding any aspects of the services supplied by yourselves:

Referee 1

Company Name: _____
Address: _____
_____
_____
Contact Name: _____
Position: _____
Phone No: _____
Email Address: _____

Referee 2

Company Name: _____
Address: _____
_____
_____
Contact Name: _____
Position: _____

Phone No: _____
Email Address: _____

13. Form of Tender

Tenders must be returned no later than 12 noon on xxxx in a sealed envelope marked "TENDER FOR Life Science Facility PROJECT DIRECTOR" and marked for the attention of:

Ms Fiona Larg
Secretary and Chief Operating Officer
University of the Highlands and Islands
Ness Walk
Inverness
IV3 5SQ

13.1 Completed tenders should be submitted in: **two (2) hard copies, and one electronic copy in e-format by the time and due date.**

13.2 Supporting information should be presented in the same order as stated in this tender.

13.3 Responses will be evaluated in accordance with the procedures set out in Section 5. In the event that none of the responses are deemed satisfactory, UHI reserves the right to consider alternative procurement options.

13.4 Failure to furnish the required information, make a satisfactory response to any question, or supply documentation referred to in responses within the specified timescale, may mean that tenderers will not be invited to participate further.

13.5 Tendered net prices are to exclude VAT and exclude expenses.

Annex A

Form of Tender for the supply of Project Director services for a proposed life science facility

I/We the undersigned, hereby offer and undertake to supply and deliver and/or carry out work upon the order of UHI, or associate organisations, in accordance with the description in the ITT reference xxxxx the tender documents and now to be taken as part of the tender, the services described and specified in the tender documents in such quantities in such manner and at such time as may be required, at the prices or discounts related to the work or item or items therein, during the period as stated.

I/We agree that this form of tender, together with the acceptance thereof under the hand of our designated officer, shall be deemed to constitute the contract.

The prices quoted by me/us in the tender documents are valid for 90 days from the closure date and I/We confirm that all the terms of the tender will remain binding upon me/us and may be accepted by you at any time during the validity period. I/We agree to bear all costs incurred by me/us in connection with the preparation and submission of this tender and to bear any further costs incurred by me/us prior to the award of any contract. I/We agree that any other terms or conditions of contract or any general reservation which may be printed on any correspondence emanating from me/us in connection with this tender, or with any contract resulting from this tender, shall not be applicable to this tender or to the contract.

The essence of competitive tendering is that the client shall receive bona fide competitive tenders from all firms tendering. In recognition of this principle, I/we certify that this is a bona fide tender, intended to be competitive, and that I/we have not fixed or adjusted the amount of any part of the tender by or under or in accordance with any agreement or arrangement with any other person. I/we also certify that I/we have not done and I/we undertake that I/we will not do at any time before the returnable date for this tender any of the following acts: -

(a) Communicating to a person other than the person calling for the tenders the amounts or approximate amounts of any part of the proposed tender;

(b) Entering into any agreement or arrangement with any other person that he shall refrain from tendering or as to the amount of any part of any tender to be submitted;

(c) Offering or paying or giving or agreeing to pay or give any sum of money or valuable consideration directly or indirectly to any person for doing or having done or causing or having caused to be done in relation to any other tender or proposed tender for the said goods or work or services any act or thing of the sort described in (a) or (b) above.

Dated this _____ day of _____ 2016

Signature: _____
Name and Position in firm of person signing: _____

For and on behalf of (full name and address of tenderer):

_____

_____

Tel. No: _____

Email: _____

Appendix 3 Draft MoU between UHI, NHSH and HIE.

Memorandum of Understanding

Between

Highlands and Islands Enterprise (HIE)

And

NHS Highland (NHS)

And

University of Highlands and Islands and its Academic Partners (UHI)

2nd November 2016 (DRAFT Version 2.1)

Background

a. The three parties wish to collaborate on the development of a new combined healthcare, academic, research and commercial building.
b. The working title for the project is the Centre for Health Centre Phase 2.
c. The proposed site for the new building is on plots 4 and 5 on Inverness Campus.
d. NHS funding will need to be secured following a bidding process to Scottish Government, which has a broader funding initiative in place of £211 million, to deliver several Elective Care Centres (ECC) across Scotland. The expectation is that the ECC for Inverness will specialise in Orthopaedics and Ophthalmology. The initial concept drawn up by NHS Highland is for a 32 bedded unit, with 3 surgical operating theatres, day case and out-patient facilities.
e. UHI funding for the project is to be from the Inverness City Deal, and is intended to support the growth of the School of Health and Life Sciences.
f. HIE's expectation is, subject to approval of a business case and finance, to contract or otherwise procure premises for commercial letting in the region of 1,000 sq.m.
g. The precise quantum of floor space and proposed layout of the building(s) is still to be determined and this will emerge following an initial design and feasibility phase that will run until February 2017.

The parties agree to work in partnership on the following basis in seeking to confirm or otherwise the terms on which a sale and purchase can take place:

1. **Responsible Officers** – These will be as follows from each party:

   a. **HIE** - Ruaraidh MacNeil (include titles, etc.)
   b. **NHS** - Eric Green
   c. **UHI** - Jeff Howarth

2. **Programme Board** - a joint Programme Board comprising representatives from each of the three parties along with a representative from Scottish government,

will be established and will meet on a 8-10 week basis to oversee progress and focus on joint outcomes.

3. **Project Working Group** – a Project Working Group of representatives from each of the three parties will be set up and will meet on a 6-8 week basis to coordinate progress with the project. In addition to that, a monthly meeting of the Responsible Officers listed above plus advisors is to take place on at least a 4 week basis.

4. **Common Objectives** – the parties have agreed that there is shared benefit in collaborating on the development of the building project, as the realisable benefits from a collective approach will be more significant that what could be achieved by each party acting in isolation.

   The project is still at an early stage, and so a number of key elements need to be defined, including:

   - Layout of the proposed scheme – it should be noted that this could be a single and multi-building solution
   - Capital cost of the project
   - Procurement route for detailed design and delivery
   - Land and building ownership
   - Building operation and management

   The intention of the MoU is put in place a basis of agreement between the parties to allow the group to work collectively in seeking to address the points set out above.

5. **Basis of Agreement between Parties** – The basis of agreement between the parties is as follows:

   a) To collaborate on the development of an agreed Design and Project Brief for the building.
   b) To seek agreement on an initial Cost Plan.
   c) To agree a funding plan for delivery of the project.
   d) To agree a procurement plan for delivery of the building.
   e) To agree a programme for delivery of the building.
   f) To agree a land purchase and a land/building ownership plan for the project.
   g) To agree what the work plan for the project is to be following completion of the Initial Agreement/Outline Business Case Stage.

6. **Shared Strategic Advisor Appointment –** the intention of the parties is that they will jointly fund the appointment of an overarching Strategic Advisor, who will take responsibility for coordinating the early stage design and feasibility advice for the project. The Brief for this consultant will be to deliver a response to all of the points set out in a) to g) above. This appointment will be made by HIE on behalf of the 3 parties. It should be made as soon as practically possible and should last initially until the completion of the initial design phase, which for the NHS Highland will be the completion of the Initial Agreement (IA) due by the end of February 2017, and for UHI following approval of its Full Business Case (OBU).

7. **Town Planning –** Permission in Principle is already in place for development of this nature on the designated plots. Matters Specified by Condition applications will need to be made in due course once the design is at an advanced stage.

8. **Due Diligence** – Each party will be responsible for its own due diligence in entering into this MoU and thereafter in providing any funding required to advice the feasibility work noted under this agreement.

9. **Programme** – The parties have agreed to work together and to use all reasonable endeavours to deliver the project. The MoU is expected to be in place for a period of 12 months or until such time as the parties reach a formal agreement on the delivery of the project, or else where one or more of the parties provides clear notification to the other parties that they no longer wish to participate in the collaboration.

10. **Funding** – All parties agree to be responsible for all their own consultant and other third party costs incurred in undertaking the necessary due diligence pursuant to seeking agreement to a sale and purchase.

11. **Other Stakeholder Briefings and Public Relations/Communications** – All parties will agree a joint approach and strategy for external public relations and communication in respect of the project, and will also agree a list of key stakeholders where a joint approach to briefing is to be taken at all times.

12. **Legal Status – it is accepted that this is not a legally binding agreement between the parties, and is not intended to create any form of legally binding contract.**

Signed on behalf of Highlands and Islands Enterprise

……

NAME:
POSITION:
DATE:

Signed on behalf of University of Highlands and Islands

……

NAME:
POSITION:
DATE:

Signed on behalf of NHS Highlands

……

NAME:
POSITION:

DATE: