Southampton Solent University (SSU)

Full Business Case to Support Solent Skills & Productivity Investment Fund (SSPIF) Investment in The Warsash School of Maritime Science and Engineering (WSMSE) to Stimulate Growth

Submitted by Professor Mike Wilkinson, Deputy Vice-Chancellor (External Engagement), 28 September 2017

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1.0 EXECUTIVE SUMMARY

1.1 This report sets out the Full Business Case for Solent Skills and Productivity Investment Fund (SSPIF) funding in Southampton Solent University's Warsash School of Maritime Science and Engineering (WSMSE), to deliver the relocation of specialist maritime training and classroom facilities from the Warsash Maritime Academy at Warsash to new facilities at East Park Terrace in Southampton City Centre, and investment in new waterside safety training facilities at the Warsash Lower Site to enable the release of the Upper Site for new housing development. The Business Case has been prepared in line with the Treasury Green Book Guidance. Maritime training has been located at Warsash since the 1940s, and the site has been developed incrementally over the years to respond to evolving regulation and demands from the marine and maritime industry, as well as to accommodate specialist equipment and technology required for training. Following completion of a review initiated in early 2014, it was recognised that there was a need to bring maritime education and training onto a long term sustainable footing equipped to meet the challenges of the 21st century and exploit opportunities to increase capacity to train and educate more seafarers to address the growing skills gap in the UK and globally.

1.2 The University's 'Maritime Strategy 2020' has been developed to meet these challenges and includes a transformational investment and Estates Development Plan to enable opportunity for growth and deliver state of the art facilities for maritime research and teaching. Investment will allow the University to exploit its location at the centre of the UK's leading maritime cluster as home to 1,750 marine related businesses in the Solent area along with the marine and maritime sectors contributing 20.5% of Solent's Gross Value Added and accounting for 5% of all private sector jobs. Investment also supports the University's aim to be the global provider of choice for the maritime sector, delivering all aspects of skills, training, education and research to meet the requirements of the individual, employer and industry. The Maritime Strategy is reinforced by the proposed merger of Southampton Solent University (SSU) and City College Southampton (CCS), which will bring bodies together in a partnership which presents the opportunity for the development of the Southampton Education Quarter, offering high quality, inclusive education and training and addressing local educational underachievement and regional skill shortages. This is aligned to the Government's priorities regarding technical and professional skills and will provide a regional focus and leadership for the development of higher skills in Southampton, including a wide range of apprenticeships across all levels to support the local and regional economy.

1.3 There are three areas of focus for the Estates Development Plan:

Phase 1 – The University has already invested over £6.3m in relocating and enhancing First Certification Officer Cadet training including new engineering workshops to the St Mary's Campus within City College Southampton. Now open, this new Maritime Centre of Excellence provides a distinct modern

teaching environment exclusively for seafarers. The provision of new training and workshop spaces allows for greater flexibility in teaching programmes and expansion of the course portfolio to maximise future growth.

1.4 Around a further £35m investment is now needed to support the following two phases of development, enabling the release of the Upper Site at Warsash for new housing development by early 2020.

Phase 2 – Refurbishment of the RM Building and Andrews Learning Resource Centre (LRC) at the University's main campus at East Park Terrace (EPT) to deliver new classrooms and simulation facilities for the delivery of professional and higher level programmes.

Phase 3 – Investment on the Lower Site at Warsash to provide upgraded facilities for Maritime Safety Training including open water, rescue boat and survival craft, fire school, HUET (Helicopter Underwater Escape Training) and medical facility.

1.5 Once complete, this will be a transformational investment, which will deliver world class facilities for both maritime research and teaching, equipped to the highest quality, in the City Centre. Its aim is to exploit the location of the University at the centre of the UK's leading maritime cluster and establish it as a world leader in maritime innovation. It will deliver a number of significant benefits including:

- Addressing the capacity constraints at the Warsash site imposed by the current buildings and planning regime which limit the scale of training and educational activity that can take place and the extent to which specialist equipment and collaborative activity can be accommodated.
- Providing flagship facilities that link and integrate with other initiatives and assets in the Solent LEP area, to help strengthen the sub-region as the UK's leading maritime cluster with Southampton at the heart of this.
- An expanded and rebranded Warsash School of Maritime Science and Engineering with the capacity to accommodate higher numbers of trainees and students and a broadened scope and scale of courses and specialisms from existing courses in disciplines such as offshore oil and gas and maritime management and advanced composite manufacturing, through to new courses that closely align with skills demand in fields such as superyacht design, maritime transport and logistics, and sustainable and renewable energy.
- An increase in applied, industry relevant research, directly supporting businesses based in the region as well as the international maritime industry.
- A long term programme of innovation and business development support, with local and international companies able to easily access state of the art equipment and training facilities, including simulators.
- Facilitating an increase in the number of maritime apprenticeships, 'life-long learning' and professional CPD provision to meet industry needs.

- An increase in the number of maritime engineers each year, providing Solent employers with a source of much needed skills and expertise.
- GVA and employment generation as a result of the activities of the Warsash School of Maritime Science and Engineering, helping to improve sub-regional productivity levels.
- Assets that work collaboratively with partners, including FE institutions, to join up provision for learners and businesses and promote progression routes for trainees entering the maritime and related professions.
- The unlocking of land at Warsash capable of supporting up to 80 new housing units.

1.6 **Proposed Funding Package**

The Project has a total forecast capital cost of £35.8m with contributions anticipated from the University's Capital Programme, private sponsorship and SSPIF. Reflecting the phased delivery approach, costs and associated funding requirements have been apportioned as follows:

	Cost Estimate (incl.VAT)	**SSU Capital Programme, sponsorship, partner funding contributions**	**SSPIF Funding**
Phase 2 - New Warsash School of Maritime Science and Engineering to RM Building and Andrews LRC	£12.70m	£6.74m	£5.96m
Phase 3 - Enabling works and new developments on the Lower Site, Warsash	£23.1m	£21.6m	£1.50m
TOTAL	**£35.8m**	**£28.34m**	**£7.46m**

1.7 Whilst adequate facilities could potentially and inevitably be delivered without SSPIF funding, this crucial, additional investment is needed in order to deliver a world class facility for the Solent area. Without the SSPIF contribution it will be necessary for the University to delay and scale back its ambitions for the Project. This is likely to mean in effect a reduction in the training and education capacity that would be provided within the School, and

facilities which fall short in terms of presence and design quality required for the University to compete effectively against other UK and international maritime training facilities.

This would have a consequential negative impact on the pace and scale at which the identified benefits and outcomes would be delivered , with fewer direct jobs created at the University and a reduction in the contribution that the University is able to make to improving regional productivity through the development of maritime skills, research and innovation. This would exacerbate regional skills gaps already identified in the preparatory work towards the Solent LEP's Skills Strategy to 2030.

In addition, any delay in vacating the Upper Site at Warsash will impact the delivery of housing on the site by 2020.

1.8 Progress to Date

Significant work has been undertaken to progress the Project, commencing in 2016 with development of the WSMSE Business Plan identifying the benefits that could be realised from this investment. Following this, the University committed funding to Phase 1 earlier this year and this has now opened to students and cadets. Meanwhile plans, budgets and programmes have been progressed for Phases 2 and 3 with the full support of design, cost and project management expertise. A Master Programme has been prepared which identifies the following key milestones:

	Phase 2 – RM Building and Andrews Learning Resource Centre at EPT	**Phase 3 – Warsash Lower Site**
Design Team appointed	October/November 2017	January/February 2018
Surveys and feasibility completed	December 2017	June/July 2018
Design and Planning complete	August 2018	December 2018 - April 2019 (Phased)
Construction start	May 2018 (RM Building classrooms) August 2018 (Andrews LRC simulators)	January 2019 (Fire School) June 2019 (Thorneycroft)

		January 2020 (Watersports and Drummond)
Construction complete	October 2018 (RM Building classrooms) March 2019 (Andrews LRC simulators)	December 2020
Premises operational	March 2019	September-October 2019 (Fire School) February-March 2020 (Thorneycroft) November-December 2020 (Watersports and Drummond)

1.9 Reinforcing the Solent Maritime Cluster

The Solent LEP's Strategic Economic Plan 2014 - 20 highlights the importance of *" developing strategic sectors and clusters of marine, aerospace and defence, advanced manufacturing, engineering, transport and logistics, low carbon and visitor economy businesses – establishing the area as a business gateway, both at local and international levels".* Foremost among these is marine and as home to 1,750 marine related businesses the Solent area is positioned as the UK's leading marine cluster, at the heart of the UK's marine and maritime economy. Locally, the marine and maritime sectors contribute 20.5% of the Solent area's GVA and account for 5% of all private sector jobs.

The Warsash Maritime Academy and maritime science and engineering provision together constitute WSMSE, one of five academic schools of Southampton Solent University. The University's world class training, education, consultancy and research services are already acknowledged by the international shipping, maritime business and commercial yacht sectors. The core of maritime provision comes from officer cadet programmes and alumni and experienced officers who pursue professional development and academic courses, complemented by a series of graduate and undergraduate programmes offered in a range of maritime related areas. The student/delegate body at Warsash, East Park Terrace, St Mary's Campus and Timsbury Lake Ship Handling Centre (together, The Warsash Maritime Academy) comprises 97% employed professionals and officer cadets entering the maritime profession. Over 11,000 student registrations are already enrolled each year on over 150 courses, ranging from career courses to professional education to short courses for maritime and offshore training. In addition, maritime related provision in engineering, yacht and powerboat design and production, shipping and port management, maritime environment and maritime business also takes place at the University's East Park

Terrace Campus. This focus on maritime related education and training together with links to maritime industry has helped SSU rank 12th of all UK Universities in a recent assessment by The Economist on value added which compares graduates' wages with expected earnings.

The relocation of training and workshop facilities from Warsash to the City Centre is key to driving growth of the University's maritime business over the next 20 years, and to maintaining its own competitive position and that of the local maritime economy. The provision of new training and workshop spaces will allow for greater flexibility in teaching programmes and expansion of the course portfolio to maximise future growth. It will support the restructuring and reorganisation of the School to be flexible to support growing numbers and varieties of students and customers, and changing industry needs and it will establish training provision, research and innovation at the heart of the "Solent Maritime Cluster" enabling closer liaison with Maritime Coastguard Agency, Lloyds Register, Port of Southampton, National Oceanography Centre and University of Southampton.

The additional training and education capacity delivered through the Project will enable WSMSE to address the shortfall in UK trained engineering officers (estimated at 3,500 by 2021), reinforcing the long term competitiveness of the UK marine and maritime sector. It will also help drive growth in export income by enhancing the international standing of Warsash Maritime Academy and the overall reputation of the School and University. It will support the growth of international student recruitment through targeted and focussed collaboration with overseas organisations (businesses and other educational providers) through articulation and franchise arrangements.

It will enable the University to develop new strategic partnerships with HE institutions aimed at delivering our programmes in overseas locations and the China Centre (Maritime) will continue to be taken forward to promote research, and engage with industry and academia in maritime related affairs.

1.10 Raising Regional Skills and Productivity

The Solent LEP area makes an important contribution to the regional economy, accounting for one-fifth of employment and 18% of GVA (with £24.7bn generated in 2012 as part of a wider South East economy of £190bn GVA). Despite this, productivity in the Solent economy is lagging behind the south east average by 12% and the UK average by 5%. The LEP recognises that meeting the productivity challenge requires investment in economic infrastructure, skills, innovation, recognising comparative advantage and building on sectoral strengths.

Maritime is fundamental to the area's success and future growth and The Warsash Maritime Academy is acknowledged as one of a number of world-renowned assets which contribute to the Solent's position as the UK's leading marine and maritime cluster. The project will contribute to increased productivity in several key aspects:

- It will deliver the capacity required to address the recognised shortfall of qualified marine engineers that is acting as a constraint to the growth of businesses in the region and nationally
- It will facilitate the development of new skills pathways with partners and be more responsive to industry requirements
- It will tackle skills gaps in the marine and maritime sector already identified as a specialism for the Solent LEP in preparatory work for the Skills Strategy to 2030
- Through the proposed merger of SSU and City College Southampton it will enable the development of a structure to support Level 3 and foundation provision with FE partners. This will tap into urban areas of deprivation in Southampton and Portsmouth
- By co- locating education, training, research and design closer to the heart of the Solent Maritime Cluster it will create a stronger platform for internal and external collaboration
- It will bring the surplus land at Warsash back into almost immediate beneficial use through the delivery of new residential units, contributing towards local housing targets

1.11 Unlocking Sites for Housing

The Solent Strategic Economic Plan 2014-20 sets a delivery target of 24,000 new homes by 2020 to support a growing workforce , identified by reference to annual housing needs assessments conducted by Partnership for Urban South Hampshire (PUSH), which largely mirrors the Solent LEP area.

Under the proposals described, the University would release the upper campus at the Warsash site for new development. In 2014 the University commissioned Turley Associates to provide initial advice on the development potential of the site in the form of a Flexible Development Framework setting out the rationale for the establishment of a flexible and positive planning framework for the whole campus. Following meetings with Fareham Borough Council Planning and Policy Department, a number of redevelopment options for the Upper Site have been explored in more detail and will be used to facilitate a process of further consultation with the Borough Council to agree a favourable site allocation as part of the local plan process.

At this stage a reasonable assumption is that the site could support 50 to 80 new housing units, subject to progressing through the statutory planning process and securing of a satisfactory planning consent.

2.0 PROJECT PROPOSALS

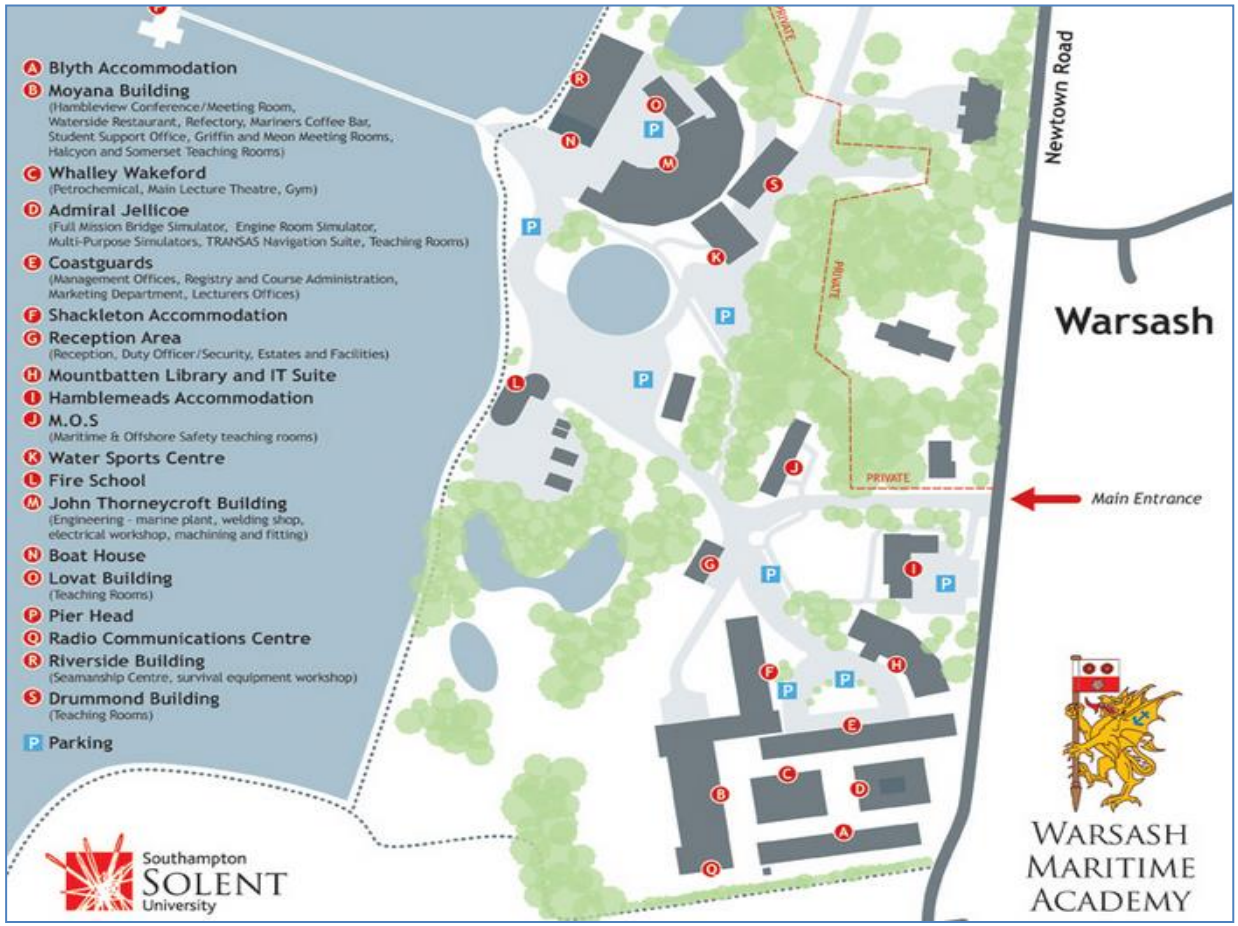
2.1 Warsash Maritime Academy – Current Site

Warsash Maritime Academy (under various names, WMA) has provided first class education, training, consultancy and research services to the international shipping, commercial yacht, and offshore oil and gas industries for nearly 70 years. The Academy is the world's premier maritime education and training provider; it is currently based on the former site of the Hook Estate which was given by the Government to William Hornby, the ex-Governor of Bombay, in 1803. In June 1946 the Southampton School of Navigation took a 99-year lease on the Warsash site. The first phase of modernisation began in July 1957, with the current Shackleton and Blyth residential accommodation buildings completed in 1960. In 1965 the University of Southampton purchased the freehold of the site. In 1971 the Southampton School of Navigation transferred from the University of Southampton to Local Authority control – first Southampton and then Hampshire Education Committee. In 1978 the Fire Fighting Centre was built and in 1980 scale model ship courses commenced at the Marchwood site. In 1984 the College of Nautical Studies merged with Southampton College of Higher Education to form the College of Maritime Studies within the Southampton Institute of Higher Education. In 1991 The Southampton Institute took over the freehold of the Warsash site from Hampshire County Council. In 2006 the Institute gained taught degree awarding powers and was renamed Southampton Solent University and the Maritime Centre was renamed Warsash Maritime Academy. In 2011 a new ship handling centre at Timsbury Lake, Romsey, was opened to replace the earlier facility at Marchwood. In 2017, Southampton Solent University gained Research Degree Awarding Powers.

The buildings that comprise the current site are shown on the Warsash campus map below. Buildings A to I are within the Upper Site and Buildings J to S are within the Lower Site. The site (a Site of Special Scientific Interest) is subject to various constraints on design and redevelopment including a blanket TPO across the site, two Grade 2 Listed Buildings (Shackleton and Moyana), level changes and local highways capacity.

A condition survey of the site was undertaken in July 2013 to inform a strategic review of WMA. It concluded that the combined backlog and 10 year future maintenance liability (costs to bring the site into a sound and operational condition) stood at £7.29m before fees, VAT and contingency, and excluding any new services or developments.

Fig. 1 Current distribution of uses at Warsash site




Moyana Suite

2.2 Development of Strategy for WMA

A Strategic Review was completed in 2014 which considered a number of investment options for the Warsash site including

Option 1 - Retention and development of the existing campus to maintain a dedicated maritime campus and full service provision to the merchant navy, commercial yacht, offshore and renewables sectors of the maritime industry.

Option 2 - Retention of the site dependent elements of the existing campus (i.e. Fire, MOS & Medical) while relocating the remainder of WMA's course provision to an alternative site.

Option 3 - Disposal of the existing campus and relocation of the entire Warsash operation to an alternative site to maintain a dedicated maritime identity and full service provision to the maritime industry sectors.

The University made a strategic decision in 2015 to pursue Option 2, moving part of the site to the City Centre, and to invest in waterside dependent activities at Warsash. Further feasibility work was undertaken through to October 2016 to appraise options for the relocation of course provision from the Warsash site. Various permutations were considered including a move to underutilised space at the St Marys Campus of City College Southampton, the development of a dedicated new Maritime Academy building at the East Park Terrace campus, and the reconfiguration of existing space at East Park Terrace.

The preferred solution was identified by the University to deliver the Warsash Project in four phases between 2017 and 2020:

Phase 1 – Refurbishment and reconfiguration of Austen Building at City College Southampton to accommodate engineering workshops and classroom provision for First Certification Officer Cadet training as a rebranded Warsash Maritime Academy – this is now complete and operational and is not included as part of this SSPIF bid.

Phase 2 – Refurbishment of RM Building and Andrews LRC at the University's main campus at East Park Terrace to deliver new classrooms and simulator suite for the delivery of professional and higher level programmes – completion by September 2019

Phase 3 – Investment on the Lower Site at Warsash to provide upgraded facilities for Maritime Safety Training including open water, rescue boat and survival craft, fire school, HUET (Helicopter Underwater Escape Training) and medical facility – completion by December 2020

Phase 4 – Disposal of the Upper Site at Warsash for new housing development – by end of 2019/early 2020

2.3 Phase 2 – RM Building and Andrews LRC, East Park Terrace

The relocation of the Warsash Maritime Academy Senior Officer and Professional Courses (including simulation facilities) to the Southampton Solent University East Park Terrace (EPT) campus has been subject to an extensive appraisal of 8 options, reviewed against a range of criteria including the suitability of the space, disruptive impact, programme and capital cost. Most were discarded because of low ceiling height / simulator screen radius restriction, level of disruption to other services and academic schools, or poor alignment with the University's Estate Strategy.

The preferred option is to accommodate WSMSE in the 9 storey Reginald Mitchell (RM) Building and Andrews Learning Resource Centre. The use of the RM Building aligns with the University's EPT Estate Development Plan, as this building forms a core part of the estate whereas other buildings have nominally been earmarked for eventual replacement as part of the Capital Programme.

There are 4 phases, including enabling projects, to complete this work:

1. Move the School of Art Design and Fashion from the Sir John Millais Building to the Herbert Collins Building (completed)
2. Move the School of Media Art and Technology to the space vacated in the Sir John Millais Building (completed)
3. Reconfiguration and refurbishment of spaces on 4th, 5th and 6th floors within RM Building to provide new classroom and office accommodation for WSMSE
4. Reconfiguration of the Andrews Learning Resource Centre facility on ground floor of the Michael Andrews Building to accommodate 6 new bridge simulators, Engine Room simulator and HV training room, offices, classrooms and other simulation facilities.

Fig 3 - RM Building, East Park Terrace

2.4 Simulator Provision

The simulators are critical to WSMSE and enable it to undertake support for accredited courses (i.e. compulsory assessment), commercial course provision and ground-breaking maritime research including currently MAXCMAS (autonomous ship control) and STM (Sea Traffic Management).

The School's strength is the infrastructure surrounding the simulators which includes: soundproof enclosures; realistic Ship Bridge layout; a combination of real and simulated equipment; dedicated control rooms and debrief rooms; the Milestone monitoring and recording system (currently being copied by at least four European simulation centres). Warsash Maritime Academy is the only UK based simulation centre that is connected to the EMSN (European Maritime Simulator Network). This enables combined, simultaneous exercises and research with other centres throughout Europe.

To ensure we are able to both meet the current and future demands of our officer cadets, delegates, researchers and clients for the simulators, we require an investment in six new Ship Bridge Simulators with the following configuration:

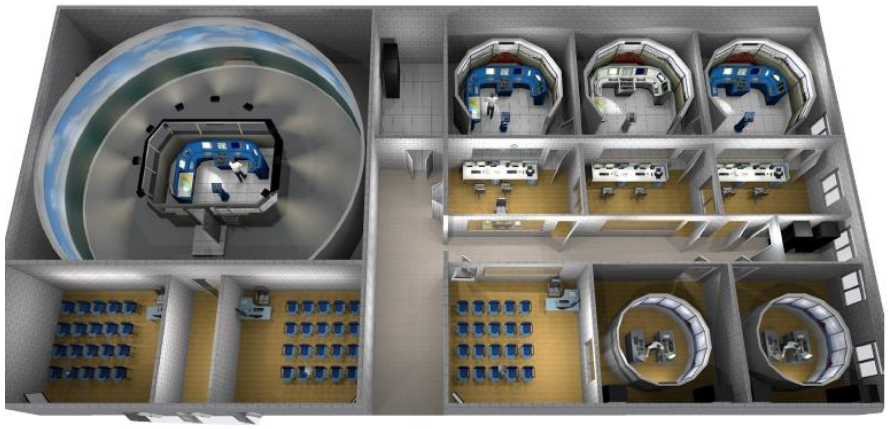
- 1 x 270° field of vision, 5m radius projection, Full Mission Bridge Simulator.
- 2 x 360° field of vision, LED screen, Full Mission Tug Bridge Simulators.
- 3 x 270° field of vision, LED screen, Full Mission Bridge Simulators.

The new simulators will also enable Warsash Maritime Academy to be the only UK based simulation centre that can deliver all elements of ship bridge training to the level and fidelity required for complex ship-handling. In addition to the new bridge simulators, the new suite will provide space for the following simulation facilities currently located at Warsash:

- LICOS (Liquid Cargo Operations)
- GMDSS (Global Maritime Distress and Safety System)
- ECDIS (Electronic Chart Display and Information System)

Floorplans showing proposed new layouts are attached in the Appendices. The preferred option ensures that academic activities are located in appropriate accommodation suitable to their needs. The relocation of The School of Art Design and Fashion puts this School into a building that is part of a zone within the campus that will eventually be redeveloped and relocated through re-development of other parts of the campus. The current programme aims for completion of all works by August 2019 in time for the start of 2019/2020 academic year.

Fig. 4 – Bridge simulator suite – example layout



2.5 Phase 3 – Lower Site, Warsash

The lower site business of Fire Fighting, Offshore Safety, Maritime Safety and Medical forms a significant element of the overall activity of WSMSE. An option appraisal completed in May 2016 considered the viability of relocating some elements of waterside training to alternative sites but concluded that investment should be made into this activity on the Warsash site to create a stand-alone University business that is key to WSMSE's Operational Plan and delivering the University's Maritime Strategy 2020.

The proposed investment elements have been captured in a Development Brief for the site which prioritises business flow from delegate arrival and registration to course completion and high performance and function over the aesthetics of the site and buildings. The principal new investments comprise:

- Site separation, new services, parking and road realignment.

- New Reception Facility – The current Water Sports Centre will be repurposed to act as the central welcoming point for delegates and as a 'triage' area to direct them to their relevant course discipline area (i.e. Fire, Offshore, Maritime and Medical).

- New Offshore Facility - the John Thorneycroft Building which currently houses engineering workshops (vacated by the move to the St Mary's Campus) will be replaced to provide staff and delegate changing facilities, kit distribution, drying and storage areas, showers, large meeting room with AV/VC facility, 2 classrooms, learning resource centre, 130 delegate dining facility, staff offices, plus medical facility.

- New Survival Pool and HUET Facility - A new survival pool and six exit HUET (Helicopter Underwater Escape Training) facility to replace current offsite leased facilities at Andark Diving and Watersports in Lower Swanwick. Due to the constraints on these sites we are unable to grow our maritime safety training to meet the demand of the industry. The requirement is for a pool with overhead hoist which lowers, rotates and inverts a helicopter cabin model into the water from which delegates then have to escape. In addition, a TEMPSC2 facility, jump platform accommodating both 1m and 3m jump heights and an escape chute are also to be provided in order to provide the full breadth of training required.

- Fire School – Replacement of the existing Fire School Building with a modern single storey building 597m2, a building which will be approximately 200m2 larger than the existing accommodation; adaptations to the Fire Ground; replacement of the hot unit; installation of a new particle filtration system (i.e. smoke 'scrubbing' system); relocation of the cold unit; and upgrades to the underground filtration systems. The University and Hampshire Fire and Rescue Service (HFRS) are in advanced discussions about locating certain of HFRS' hot fire training at the Fire School at Warsash which, if continued to a successful conclusion, will necessitate these additional works. This would represent an excellent example of

cross public sector working with an overarching collaboration agreement that promotes a long-term working relationship to share expertise, knowledge and resources and develop new provision. It is also proposed that HFRS will make a capital contribution to these works, with a final decision on the proposed collaboration and investment anticipated by early 2018.

- Waterside Building (incorporating the Boat House and Riverside Building) – to be upgraded to full repair and repurposed.
- MOS Building, Lovat Building, Maintenance Hut, Drummond Building – to be demolished

Fig. 5 – Example of a particle filtration system attached to hot fire units and a survival pool and HUET (noting in the UK, this would be covered)

Creating these facilities on the Lower Site at Warsash will ensure that WSMSE is the only maritime education provider in the UK that can offer a fire, maritime, offshore and medical safety training all from a single location.

A provisional programme has been developed showing the proposed phasing of each of the discrete developments, commencing with site separation works and completing with the phased delivery of the entire scheme by November/December 2020.

Site separation works have been costed at c £1.5m and is the key enabling investment required to contain the Upper Site for future disposal. The intention is to proceed with these works in early 2018, whilst further detailed feasibility is carried out on the new buildings and full business cases developed for investments in the individual projects on the Lower Site. The final design solution will be dependent on the successful conclusion of negotiations with the public sector partner and approval of their funding contribution by early 2018.

2.6 Phase 4 – Upper Site, Warsash

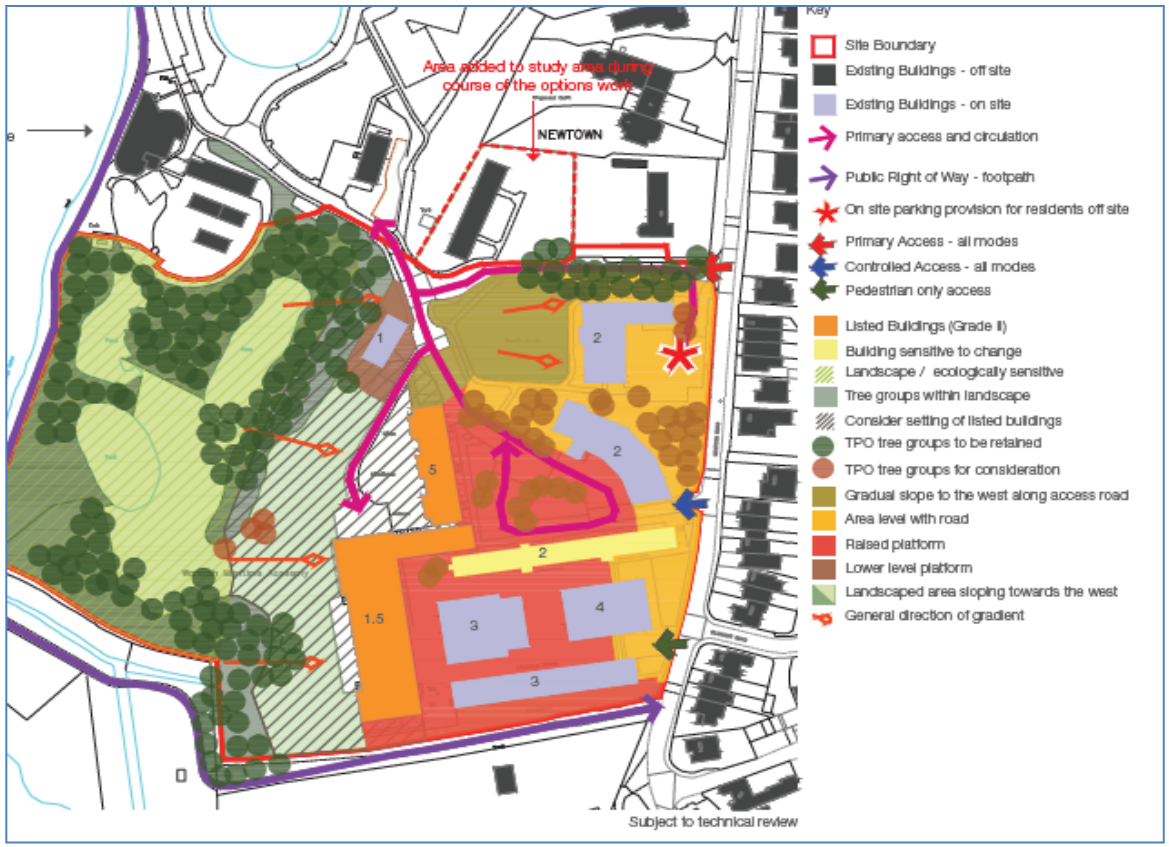
The final phase will be the disposal of the Upper Site for new housing development. The Upper Site comprises approx. 3.63ha (8.94 acres) including a landscaped area adjoining the foreshore, and various structures including two Listed Buildings.

In 2014 the University commissioned Turley Associates to provide initial advice on the development potential of the site in the form of a Flexible Development Framework setting out the rationale for the establishment of a flexible and positive planning framework for the whole campus. Following meetings with Fareham Borough Council Planning and Policy Department, a number of redevelopment options for the upper site have been explored in more detail and will be used to facilitate a process of further consultation with the Borough Council to agree a favourable site allocation as part of the local plan process.

At this stage, three principal options (each with a sub option) have been generated to provide different combinations of uses and access arrangements, taking on board the identified physical constraints and opportunities. These will inform soft market testing and high level economic assessments to identify a preferred option which could be a combination of the options presented.

Based on this initial assessment, a reasonable assumption is that the site could support 50 to 80 new housing units, subject to progressing through the statutory planning process and securing of a satisfactory planning consent.

Fig.6 – Warsash Site Development Constraints Plan



3.0 STRATEGIC CASE

3.1 What problem or opportunity is the project seeking to unlock?

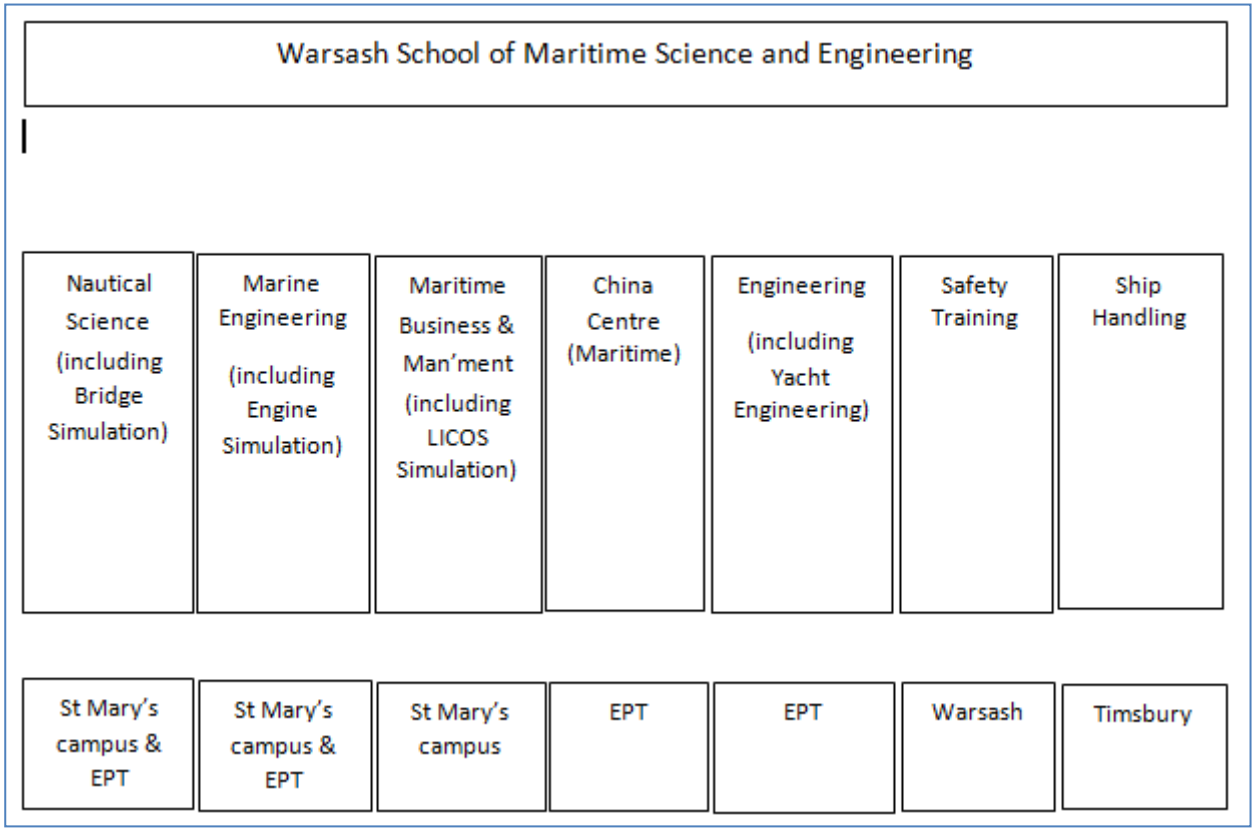
The Project supports the central mission of the University's Maritime Strategy 2020, to be the global provider of choice for the maritime sector, delivering all aspects of skills, training, education, and research to meet the requirements of the individual, employer and industry.

Maritime training has been located at the Maritime Academy in Warsash since the 1940s, and the site has been developed incrementally over the years to respond to evolving regulation and demands from the marine industry, as well as to accommodate specialist equipment and technology required for training. Following completion of a review which was initiated in early 2014 it was recognised that there was a need to bring maritime education and training onto a long term sustainable footing equipped to meet the challenges and demands ahead, including opportunities to grow the business

Increased competition, an uncertain future funding landscape and a need to respond to the growing demands of Officer Cadets, delegates and clients mean there is a need to ensure a learning experience that consistently meets and exceeds expectations for maritime education and training. The 2014 Options Review reinforced this but the required capital investment at Warsash is too high. The campus also makes a lower contribution to the University as a whole when compared to other operating areas and a full apportionment of overheads illustrates that the campus makes a deficit. If capital borrowing is added to the costs, then to make it viable considerable growth in income is needed through increased activity. The site restrictions are unlikely to support the level of growth required and present risks in terms of the site and the University's financial health. The capital requirements for the site are high due to the age of the campus, its Listed buildings as well as the need to maintain facilities to a high standard. The University also has to demonstrate on an annual basis that it is securing best value for money across all of its activities and this would be best evidenced by investing in campus activities that could be shared across a range of areas.

It was therefore resolved to move some activities, including First Certification Officer Cadet training, specialist marine simulation facilities and engineering workshops to new accommodation in Southampton City Centre at City College Southampton and East Park Terrace, and to invest in waterside dependent activities that will be retained on the Lower Site at Warsash. A move to the City Centre provides the opportunity for the University to develop a new state of the art Warsash School of Maritime Science and Engineering delivering unique synergies through the co-location of education and training with other marine related research and degree programmes already located at its East Park Terrace Campus and a location at the heart of Southampton Maritime Cluster. Relocating Officer Cadet training into the City Centre will also give Cadets better access to central University facilities including library, sports and social amenities.

New high quality facilities will deliver additional capacity, enable the University to be more flexible and responsive to the changing needs of the maritime industry, to maintain its competitive market position in core training and ensure it is positioned to grow its business into new areas.



3.2 Supporting Solent's key strategic sectors

3.2.1 National context

The *Maritime Growth Study 2015* highlighted that "*the UK maritime manufacturing sector exports maritime products to most of the world's major markets; from complex merchant and naval shipbuilding to ship's chandlery and nanotechnology, the sector produces high quality products used in the global maritime industry at every stage of the supply chain. In 2013, shipping alone directly contributed around £1.8 billion to the UK's trade balance which represented about 2% of the UK's overall surplus in services trade. "*Estimates suggest that the direct contribution to the UK economy from the maritime sector, including marine industries, was at least £11 billion in 2012 (GVA).

More recently, Frazer Nash and Oxford Economics Report for the Department for Transport on Support for Maritime Training (SMarT) Scheme (2017) has also highlighted the UK maritime industry is an important contributor to the UK economy and of strategic importance with 95 % of UK imports and exports including 40% of our food supply transported via sea. It concludes *"As an island nation the UK relies on the maritime sector for continued trade, and national security where the importance of the UK seafaring profession is recognised. Within the international maritime community, the UK is still recognised as a leader for its seafaring history and strong reputation for the high quality of its seafarers".*

However, a number of recent studies have highlighted an emerging skills gap. The DfT's Maritime Growth Study forecasts a potential shortfall of around 3,500 trained UK Deck and Engineering Officers at sea by 2021. A report from Oxera Consulting *(International Competitiveness of the UK Maritime Sector, 2015)* suggests that global demand for seafarers will continue to grow and if the future supply of seafarers does not increase from the level in 2010, it is expected there will be a global shortfall of around 80,000 seafarers by 2020.

A Seafarer Projections Review (SPR) by Oxford Economics in 2016 found the projected global labour requirements will increase at 3.2% per annum for officers and 1.3% for ratings. It highlighted current and growing demand for Deck and Engineering Officers of any nationality in the UK shipping industry and the challenge to the UK shipping fleet presented by the increasing employment of non-UK seafarers and an ageing UK national workforce. The SPR predicted that to close the future gap between demand and supply, the number of newly qualified Deck and Engineering officers joining the industry each year would need to increase to between 1,500 and 1,600.This is currently more than double the number of officers that qualify through UK funded training schemes, highlighting an opportunity for UK employment.

In setting out recommendations for an increase in SMarT funding, Frazer Nash and Oxford Economics 2016 report highlights cost analysis carried out to show for every £1 the government spend on SMarT1 (which is channelled to employers) there is a £4.80 return to UK GDP and that there remains a desire by the shipping industry to employ a proportion of UK officers and ratings, despite that in their early career UK seafarers are considered to be

expensive compared with other nationalities. It concludes that whilst there is currently capacity in the academic system and opportunity for some growth, *"if there is a demand to train a significantly larger number of UK seafarers, the supply of applicants, college places and berths would be put under severe pressure".*

3.2.2 Regional context

The marine and maritime sector is a unique facet of the Solent LEP area and makes an important economic contribution to the Solent economy. Its assets are of national significance.

In terms of output, the sector contributes 20.5% to the Solent's GVA. It accounts for 40,000 direct jobs or 5% of total private sector jobs in the sub-region. Supply chains serving the marine and maritime sector include component-manufacturing, logistics, financial services and catering. Taking account of these indirect jobs, this figure rises to 48,300 jobs. Over the period to 2025, the marine and maritime sector is projected to grow by 5% in the Solent region.[i]

The report *Transforming Solent*[ii] highlights that while the Solent area has an excellent skills infrastructure and the building blocks for a world class workforce, it must address the recruitment difficulties experienced by 20% of employers in the marine sector. Forecasts indicating a need to replace 50% of associate professionals and technicians and 30% of skilled trades people in the sector in the next ten years, suggest that this situation will be further exacerbated unless addressed. The Solent LEP endorsed the report's recommendations as part of its strategic plan

3.2.3 Maritime Provision at Southampton Solent University

As a world-leading provider of maritime education and training, Warsash Maritime Academy has delivered first-class education, training, consultancy and research services to the international shipping, commercial yacht and offshore oil and gas industries for 70 years. Every year, 120 highly qualified and experienced maritime lecturers and technical instructors support over 11,000 students through our dedicated one-stop maritime training centre approach.

- Navigators, marine engineers and marine electro-technical officers benefit from our internationally recognised certification programmes, from initial entry as an officer cadet up to Master Mariner (Captain) and Chief Engineer level. Foundation degree provision includes Marine Operations, Marine Electrical and Electronic Engineering and Marine Engineering while HNC/HND provision includes Nautical Science and Marine Engineering.

- In addition, we also offer degree level courses which make highly sought after graduates serving in the wider maritime sector such as chartering, broking, legal, arbitration, insurance and management jobs. The different types of degrees include BSc (Hons) Maritime Business, BSc (Hons) Maritime Transport and International Logistics and BSc (Hons) Shipping and Port Management. For the middle managers in industry who are aiming to advance their careers, the School also runs three highly successful post-graduate courses. These are MSc International Maritime Business, MSc International Shipping and Logistics and MBA International Maritime Management. In addition, the University also offers MSc Shipping Operations using a blended learning model.

- In the engineering area we produce world-leading naval architects for the growing yacht sector. The degrees in the School are BEng (Hons) Yacht and Powercraft Design and BEng (Hons) Yacht Design and Production which have produced graduates who have dominated the yacht industry for over four decades.

- WSMSE also provides a vast range of short safety training courses to all maritime personnel for development of skills such as firefighting and sea survival, as well as continuous professional development modules for more experienced officers. In support of CPD, marine engineering and management enhances career prospects in the maritime industry, both at sea and ashore, by topping up an existing marine engineering foundation degree or HND to a full honours degree leading to either BSc (Hons) Marine Operations Management or BEng (Hons) Marine Engineering Management depending on the student's prior discipline. The course is delivered via blended learning - students begin with spending 15 weeks at the University before completing the course via distance learning over a period of up to 18 months

- Warsash Maritime Academy pioneered the use of Bridge, Engine Room and Liquid Cargo Operations simulators for higher level training. Our specialist ship-handling training facility is unique in the UK and one of just four of comparable specification around the world.

- In response to growing demand, SSU has established the Warsash Superyacht Academy as a unique collaboration with prestigious business partners to provide high quality education and training courses to the global superyacht industry, as well as a range of commercial services. Established to meet the growing international demand for crew, officers and captains who are trained to the highest professional standards, the Academy also provides a range of opportunities for professional and personal development up to Master's degree level.

- Active participation in the work of professional and industry bodies such as the UK Maritime and Coastguard Agency, the International Maritime Organisation (IMO) and the Merchant Navy Training Board (MNTB) ensures that our staff members are involved in the decision-making processes that shape maritime education and training policy.

- The University's Maritime Research Centre provides specialist research and consultancy services to the maritime industry, particularly in the field of maritime human factors and autonomous ships. It has successfully completed high-impact, prestigious and pioneering projects on topics such as seafarers' fatigue; seafarers' welfare; seafarers' gender; equality and the impact on multinational crew; effective crew strategy; mentoring in the maritime industry; dock workers' health and safety; use of virtual reality in shipboard training; port energy conservation and savings; maritime collision regulation; and sea traffic management.

- From an international perspective, the School launched its China Centre (Maritime) which uses its academic excellence, expertise in Chinese Maritime affairs and links with Chinese and British maritime communities to provide excellent opportunities for cadets, students and staff.

WSMSE has a proven ability to respond to the significant changes within the industry but now faces increasing competition from international institutions, e.g. in Singapore, which have invested heavily in leading edge training facilities to meet growing global demand. The proposed relocation of First Certification Officer Cadet training and workshop facilities from Warsash to the City Centre is key to driving growth of the University's maritime business over the next 20 years, to maintaining its own competitive position and that of the local maritime economy. The provision of new training and workshop spaces will allow for greater flexibility in teaching programmes and expansion of the course portfolio to maximise future growth. It will support the restructuring and reorganisation of the School to be flexible to support growing numbers and varieties of students and customers, and changing industry needs and it will establish training provision, research and innovation at the heart of the "Southampton Maritime Cluster" enabling closer liaison with Maritime Coastguard Agency, Lloyds Register, Port of Southampton, National Oceanography Centre and University of Southampton.

The siting of an integrated Warsash School of Maritime Science and Engineering on the main campus alongside Southampton Solent University's Business School also creates the opportunity to build upon the University's contribution to the region's visitor economy, through strengthening its relationships with the cruise industry and other marine related tourism and leisure. It opens up potential for the creation of career pathways for graduates in areas such as interior design, marketing and communications directly into these businesses. A pathway of the MBA degree in Maritime Business has also been recently developed. Further plans to develop courses overlapping maritime and business areas would be facilitated by the move.

The Warsash Lower Site development does not include the provision for delegate accommodation and thus is expected to have a positive financial impact on local B&Bs, hoteliers and other amenities around Warsash when the Upper Site is vacated as currently, some of those attending courses on the Lower Site, use the Upper Site accommodation.

3.3 Improving the skills and talent of Solent's current and future workforce

The maritime sector is a major employer within the UK with an estimated 113,000 directly employed in the sector by ports, shipping and business services, contributing between £7.6-£13.8bn GVA per annum to the UK economy. The UK is also a world leader in the provision of maritime education and training services and Southampton Solent University, along with 23 other UK institutions, attract students not only from the UK but also from abroad, with many overseas students seeing the benefits of the UK offer.

The LEP's sector report Making *Waves - Solent's Marine and Maritime Sector 2015* describes the technological advances and changes to the occupational structure that are driving up skills requirements across much of the Marine and Maritime sectors. It highlights research by the British Marine Federation suggesting that 20% of employers in the marine sector already have difficulties filling vacancies with 'Marine Engineers' the most difficult to fill and the specific skills gap within the Solent region, with marine companies citing this as a particular barrier to growth. It raises concern that these gaps will get worse in future, due to an estimated net requirement for around 3,500 new recruits into Solent's Engineering sector from 2010 to 2020. Whilst recent contraction in the offshore oil and gas industry has eased immediate concerns about a deficit in qualified personnel, the longer term risk is that engineers who are made redundant through market contraction will be permanently lost to the industry when it begins to recover. Dependent on the outcome of negotiations, exit of Britain from the EU also has the potential to adversely affect supply of qualified people.

A 2014 report by Machtech and IMarEST *Mitigating the Skills Gap in the Maritime and Offshore Oil and Gas Market* concludes that a central element of solving the skills gap is positively affecting the gender imbalance in engineering. Current statistics put the female UK engineering population as 8%, the lowest in Europe, and contrasts with China, where now more than a third of engineers are female. It notes that despite lots of positive rhetoric in increasing diversity, the UK is still failing to generate enough change, to have any notable effect on its widening skills gap. According to Engineering UK, increasing women's participation in the UK labour market could be worth £15-23 billion or 1.3% to 2% of UK GDP.

The completed Phase 1 relocation of First Certification Officer Cadet training to Southampton provides facilities more conducive to attracting a higher proportion of female engineers to a city centre location with high-quality single study-bedroom accommodation.

The proposed investment in new facilities in an accessible, prestigious, city centre location will enable integration of maritime education and training with other maritime related provision and is vital to maintaining the competitive position of Southampton Solent University as the world leader in these areas, fostering engagement with industry stakeholders, adding to the student experience and ultimately delivering increased student employability. It will support a number of strategic developments that will help to drive growth in workforce skills at international, national and regional level:

- Supporting the City Apprenticeship strategy by developing progression pathways for marine engineers from apprenticeship to higher/degree apprenticeships and higher education.

- Supporting the University's strategy for widening participation in Higher Education and linking to regional and government targets for hard to reach groups including white working class males.

- Provision and support for education and training across Levels 3 to 8 with Higher Education and Higher Level Skills at its core; aligned to relevant education and qualification frameworks.

- Delivery of the Maritime vocational programme incorporating Maritime Business elements in order to prepare students for maritime shore-based and related professions, e.g. ship broking, finance, law. This is vital to maintaining London's pre-eminence as a global centre for maritime business.

- Delivering lifelong learning and maintaining the University's position as the 4th largest provider of CPD hours in the UK, to which the Warsash Maritime Academy makes the greatest contribution. It has been calculated that students/delegates could attend up to 40 courses at Warsash over the course of a career in merchant shipping, and the Academy holds a unique position in this regard.

- Re-skilling and training of ex-navy personnel for the merchant fleet, including the application of small craft skills to larger vessels.

- Supporting complementary skills programmes focused on raising STEM attainment, aspiration and skill retention in Southampton and the surrounding areas. STEM is a priority area of focus for the University and this will include maritime in all its forms as well as engineering, advanced manufacturing and technology. These initiatives support the Solent LEP Strategy and will build on and expand the expertise gained within maritime education and will also explore offshore and renewable operations and consider oil and gas.

- Existing and future maritime, marine and engineering courses in WSMSE will help to satisfy regional demand for STEM skills. Courses outside the immediate maritime industry include yacht and power craft design and production, electronic engineering, vehicle engineering, engineering design and manufacture, mechanical engineering and renewable energy engineering. These are all available to Honours level and apprenticeship variants may be developed subject to demand.

- Enabling expansion of the Warsash Superyacht Academy. The superyacht industry has grown dramatically over 20 years with 45% of the fleet delivered in the past decade, growing to a global turnover of >€25bn, with a fleet comprising c. 5,500 yachts, expected to reach over 6000 yachts by 2020 and the forecast is that 20-30,000 new crew will be required up to 2020. Many of these yachts are large enough to be encompassed by regulations pertaining to merchant shipping. Working in partnership with some of the most dynamic and innovative organisations in the superyacht industry, the Academy delivers a full range of premium quality courses and business services required by the sector, and has succeeded in growing this market to the extent that it has a 30% global market share in the training of officers and engineers for the sector and in March 2016 the Warsash Superyacht Academy was voted the Number 1 place to study by students in the biggest global survey amongst yacht crew and officers. The additional capacity that the investment delivers will enable the Academy to keep pace with market competitors and to respond to increasing demand for offshore training and from ship refitting business as a consequence of the forecast growth in the fleet over time.

- Growing the University's research capabilities in human factors and gender diversity at sea which will support the industry in changing outdated perceptions of the engineer in the UK and contribute to wider initiatives to promote marine engineering as a desirable career option for women, helping to close the recognised skills gap.

- Growing the University's research capabilities in remote operation/autonomous vessels will assist to ensure the Solent Region is at the leading edge of this new technological revolution ('Industry 4.0').

- Developing the University's Marine Industry Leadership and Management Programmes.

3.4 Raising productivity in the Solent

The national context is a slowing of UK growth in terms of productivity and a long-standing gap in productivity compared to other countries remains. The Government's focus to drive economic growth has shifted to raising productivity levels with drivers set out in the HM Treasury publication, *Fixing the Foundations*, as a dynamic, open enterprising economy supported by long-term public and private investment in infrastructure, skills and science.

At a regional level, the Solent LEP makes an important contribution to the regional economy, accounting for one-fifth of employment and 18% of GVA (with £24.7bn generated in 2012 as part of a wider South East economy of £190bn GVA). Despite this, productivity in the Solent economy is lagging behind the south east average by 12% and the UK average by 5%. The LEP recognises that meeting the productivity challenge requires investment in economic infrastructure, skills, innovation and building on sectoral strengths and recognising comparative advantage.

Maritime is fundamental to the area's success and future growth and Warsash Maritime Academy is acknowledged as one of a number of world-renowned assets which contribute to the Solent's position as the UK's leading marine and maritime cluster. The investment will contribute to increased productivity in several key aspects:

- It will deliver the capacity required to address the recognised shortfall of qualified marine engineers that is acting as a constraint to the growth of businesses in the region and nationally
- It will facilitate the development of new skills pathways with partners and be more responsive to industry requirements
- By co-locating education, training, research and design closer to the heart of the Solent Maritime Cluster it will create a stronger platform for internal and external collaboration
- It will bring the surplus land at Warsash back into almost immediate beneficial use through the delivery of new residential units, contributing towards local housing targets.

3.5 Stimulating and Supporting Innovation

Deloitte and Oxford Economics report on behalf of the DfT (*Maritime Growth Study – keeping the UK competitive in a global market, Sept 2015)* states that "innovation is critical to maintaining and strengthening the UK's position as an internationally competitive maritime centre. Marine technology and engineering is a growing area where the UK already has world-leading companies and by supporting these existing strengths in innovation and technology the UK can establish itself as a prominent player in this globally expanding market".

The evidence suggests that the maritime sector is likely to see rapid change across a number of different areas over the coming years. Shipping is seeing a continuing drive towards greater efficiency and further automation of vessels, with increased opportunities for the UK in the manufacture of marine equipment, ship design and classification.

The LEP's Strategic Economic Plan 2014-20 identifies innovation as driving 70% of long term economic growth and the key role of the universities in supporting innovation and generating comparative economic advantage. The broader Solent area is globally recognised as a centre of excellence for marine and maritime and recent work undertaken through the LEP's Innovation and Business Support Delivery Panel to identify the Solent's innovation strengths has identified marine data (including marine autonomy), advanced materials and photonics as areas with particularly high growth potential.

The Economic Plan recognises the direct contribution of £6.7m per annum that Southampton Solent University is already generating from IP, research and consultancy and the role its facilities, expertise and technical support plays alongside those of Southampton and Portsmouth universities within the Solent's Maritime Cluster.

The University has recently been awarded Research Degree Awarding Powers and research and innovation underpins the University's reputation as being a world leader in maritime education and training and is an integral part of teaching delivery within the Warsash School of Maritime Science and Engineering. Through its Maritime, Technology and Environmental Research Hub the University is responding to Solent's strengths in acoustics, maritime, built environment and computing research - conducting studies that make a real impact of industry thought leadership. In 2016/17 alone, fifteen research awards were won by the WSMSE totalling £699,428 covering areas as diverse as crew safety and welfare and 'IMAGINE', a feasibility study and demonstration of technologies to enable a remote engine room crew.

The University is responding to rapid changes in boat manufacturing technology through its teaching in advanced composite engineering and additive manufacturing. Whilst this technology currently has limited application within the smaller vessels market, it is expected to expand significantly and this requires investment in new skills and technology to meet industry demand.

Researchers involved in the hub are currently undertaking a joint two year project with partners from Rolls Royce, Atlas UK, Lloyd's Register and Queens University, Belfast. The MAXCMAS Project will develop collision avoidance algorithms for autonomous seagoing vessels, and will involve Southampton Solent University researchers in the design of innovative simulation tests. WMA aims to use this research as a platform for expanding training provision to operators of automated vessels, and the wider shipping community in the form of awareness and simulator based courses for seafarers, regulators, accident investigators and those in financial and insurance sectors. It will also use its simulator facilities as a test bed and research for investigating issues including advanced collision avoidance, remote sensing, communications and control. As an academic institution the publishing of papers into the public domain will raise the impact of autonomous vessels, supporting the development of one the key areas of maritime innovation in the Solent area.

The University's research on human factors at sea is undertaken collaboratively with marine institutions in the UK and overseas with engagement and key contributions from UK and regionally based marine businesses. It aims to strengthen the long term resilience and sustainability of the industry through greater workforce diversity and risk reduction. This focus on soft factors within the industry is complementary to technological and environmental centres of research expertise at the University of Southampton and National Oceanography Centre, with whom Southampton Solent University has worked collaboratively on a number of research projects and bids.

Co-location of the University's maritime research and yacht design capabilities in Southampton alongside marine training and education will strengthen the opportunity to build on these areas of expertise and knowledge alongside the development of maritime relevant curricula within the portfolio.

3.6 Supporting business growth through access to resources and advice

Warsash's waterside campus currently provides a number of specialist facilities that are used for regular certification programmes and training including full mission bridge simulator, engine room simulator, Fire School, and Radio Communication Centre. Most of these facilities are now at the limit of their capacity to the extent that the Academy is often unable to accommodate requests for training from client organisations. Better quality and larger spaces are required to accommodate the latest technology which cannot work at the Warsash campus.

Included in the Project scope is provision for a new 270º projection full mission bridge simulator, 5 smaller bridges, and engine room, HV, ECDIS, LICOS and ECDIS simulators. These, together in one simulation suite, will significantly increase training capacity, stimulate higher demand and greater accessibility from industry and looking forward, will enable the Academy to develop new areas of training capability to keep pace with international competitors, for example the provision of training in Dynamic Positioning and crane handling .

As a further example, whilst the engineering workshops at Warsash are considered satisfactory for current "steady state" Cadet to Officer training demand, they have insufficient capacity to satisfy new regulatory requirements for Electrotechnical Officers' (ETO) certification from the cruise ship sector and growing demand from the small ships subsector.

More fundamentally, investment in new facilities will position the Academy to respond to changes on the near horizon as the maritime industry seeks to reduce health and safety risk by moving focus from mandatory training and certification to competence based assessments, generating a consistently higher level of demand for retraining and CPD courses.

3.7 Unlocking sites for housing and employment

The Solent Strategic Economic Plan 2014-20 sets a delivery target of 24,000 new homes by 2020 to support a growing workforce , identified by reference to annual housing needs assessments conducted by Partnership for Urban South Hampshire (PUSH), which largely mirrors the Solent LEP area.

In October 2012, PUSH put in place a Spatial Strategy, South Hampshire Strategy - A framework to guide sustainable development and change to 2026 which was aligned with the then current economic strategy. The South Hampshire Strategy states that there will be a net addition of 55,600 dwellings by 2026, an annual delivery of 3,700 new homes. Subsequently, in response to the National Planning Policy Framework, PUSH commissioned a Strategic Housing Market Assessment (SHMA) to review the extent of the relevant housing market areas (HMAs) and covering the LEP area and potential demands. This was completed in January 2014 and identified an upward adjustment of need to over 4100 homes per annum across the Portsmouth and Southampton areas (including Fareham Borough) to 2036. The SMA identifies a number of specific characteristics and trends in regard to Fareham Borough including a shortage of 2 and 3 bedroom family homes for purchase and rent.

Under the proposals described, the University would release the upper site at the Warsash campus for new development. The upper site comprises approx. 3.63ha (8.94 acres) including a landscaped area adjoining the foreshore, and various structures including two listed buildings.

In 2014 the University commissioned Turley Associates to provide initial advice on the development potential of the site in the form of a Flexible Development Framework setting out the rationale for the establishment of a flexible and positive planning framework for the whole campus. Following meetings with Fareham Borough Council Planning and Policy Department, a number of redevelopment options for the Upper Site have been explored in more detail and will be used to facilitate a process of further consultation with the Borough Council to agree a favourable site allocation as part of the local plan process.

At this stage, three principal options (each with a sub option) have been generated to provide different combinations of uses and access arrangements, taking on board the identified physical constraints and opportunities. These will inform soft market testing and high level economic assessments to identify a preferred option which could be a combination of the options presented. Based on this initial assessment, a reasonable assumption is that the site could support 50 to 80 new housing units, subject to progressing through the statutory planning process and securing of a satisfactory planning consent.

3.8 Improving connectivity within the Solent and beyond

The Solent Strategic Economic Plan 2014-20 describes the challenges imposed on the transport networks by the unique geography of the Solent area, high level of urbanisation, the presence of two large cities, and the role of the three International Gateways in connecting the UK with global markets. It highlights in particular the strategic role of the M27 and the impact of peak time congestion on the competitiveness and productivity of the Solent economy.

The current separation of the Warsash Campus from the University's City Centre campus in East Park Terrace generates traffic between the two locations with students and trainees bussed between sites twice a day at significant cost to the University. The location of WMA some distance from any public transport connections and the availability of car parking on site means that the vast majority of journeys to the site are by car rather than other transport modes.

The relocation of classroom and engineering teaching and accommodation to a more accessible location in the City Centre can be expected to reduce the number of journeys between the two sites and drive a higher use of public transport by staff, students and course delegates, releasing capacity on the main routes between the two sites and immediately around Warsash. This would be enhanced if the envisaged tram/light railway link to the airport enables international delegates to arrive in the City Centre by linked public transport.

Some of this benefit will ultimately be offset by traffic generated from new housing development on the site, but this impact will be more widely distributed across the local and regional road network.

3.9 Wider social and economic impacts

The additional training and education capacity delivered through the Project will enable WMA to address the shortfall in UK trained engineering officers (estimated at 3,500 by 2021), reinforcing the long term competitiveness of the UK marine and maritime sector.

It will also help drive growth in export income by enhancing the international standing of Warsash Maritime Academy and the overall reputation of the School and University. It will support the growth of international student recruitment through targeted and focussed collaboration with overseas organisations (businesses and other educational providers) through articulation and franchise arrangements.

It will enable the University to develop new strategic partnerships with HE institutions aimed at delivering our programmes in overseas locations and the China Centre (Maritime) will continue to promote research and engage with industry and academia in maritime related affairs.

The Project will help to drive growth in the University's leading maritime research programmes which focus on improving diversity, welfare and safety within the maritime industry, new technology in marine/maritime education and advances in the field of maritime energy management.

Our current research on seafarers' welfare focuses on gender issues arising from multi-cultural crews and isolation. It will highlight related issues that could cause them to end their studies or careers at sea and identify the training that Officer Cadets will need to improve their welfare and deal with these potential issues whilst on-board. The impact will potentially be global, affecting seafarers, women and men in the international fleets and reflecting the growing importance of Corporate Social Responsibility within the wider maritime industry, which has historically lagged behind most other sectors.

The University is a leading partner in the MariEMS project, supporting IMO and the EU achieving their stated emission targets through better management of energy on board vessels. As the regulations and technologies governing Energy Efficiency on board ships become more complex it has been recognised that seafarers need to be trained to a much higher level in these fields and the Project will develop an energy management job and training specification, and the development and implementation of an online learning and assessment system for the new training programme so that current Officer Cadets, as well as existing seafarers, can up-skill themselves to the new regulatory requirements.

It will also support the University's strategic aim to remain engaged at an international level in the formulation and maintenance of professional and academic standards for the maritime industries, and the dissemination of areas of best practice to produce global citizens.

4.0 ECONOMIC CASE

4.1 Option Development

The Strategic Review of the Warsash Maritime Academy carried out by the University in 2014 considered three principal options:

Option 1 – Retain and develop the existing Warsash campus to maintain a dedicated maritime campus and full service provision to the merchant navy, commercial yacht, offshore and renewable sectors of the maritime industry.

Option 2 – Retain the site dependent elements of the existing campus (i.e. Fire, Marine Offshore Training and Medical) while relocating the remainder of the Warsash course provision to an alternative site in the City Centre of Southampton.

Option 3 - Disposal of the existing campus and relocation of the entire Warsash operation to an alternative site to maintain a dedicated maritime identity and full service provision to the maritime industry sectors.

Option 3 was discounted at an early stage due to the lack of a viable alternative site from which waterside dependent and carbonaceous fire training could be delivered. A full value for money assessment was carried out on Options 1 and 2 and based on this appraisal a strategic decision was made by the University in 2015 to progress Option 2 as the preferred solution due to the significant site and planning constraints associated with the Warsash campus. This decision was re-confirmed by the Board of Governors at its meeting of 18 November 2015 and noted in a confidential minute.

Subsequently, a Feasibility Study was progressed on a number of options for new teaching and workshop facilities in the City Centre, with staff and student accommodation. Options included:

Option 2a - The refurbishment and adaptation of underutilised space within City College Southampton as classrooms, simulation facilities and workshops, and some sharing of common areas, e.g. offices, reception etc. with City College Southampton.

Option 2b - The construction of a 6750 sq m new flagship School of Maritime Science and Engineering Building on the University's main campus at East Park Terrace bringing together under one roof all classroom training , simulation facilities and engineering workshops currently at Warsash together with other maritime centres of excellence (research, yacht design) already located at East Park Terrace.

Option 2c - A hybrid solution involving a smaller scale (6000 sq m) new build development at East Park Terrace to accommodate the new School including " clean" training, simulators, research, design and general office and support space with Officer Cadet training and engineering workshops provided within premises at City College Southampton.

Option 2d - A hybrid solution involving the reconfiguration of existing space in the University's RM Building at East Park Terrace to accommodate the School including " clean" training, simulators, research, design and general office and support space with Officer Cadet training and engineering workshops provided within premises at City College Southampton.

4.2 Project Costs and Benefits

Option 2a was discounted once it was established through a detailed feasibility and space planning exercise that there would be insufficient space available in the right configuration to house simulation facilities at City College Southampton. Budget cost estimates were developed for all other options as shown in the table below.

	Cost Estimate (incl.VAT)		
	Option 2b – 6750 sq m new build at EPT	**Option 2c – 6000 sq m new build at EPT**	**Option 2d – refurbishment of the University's RM Building**
Adaptation of City College Southampton premises to provide classrooms and engineering workshops for Officer Cadet training	n/a	£6.3m	£6.3m
New School of Maritime Science and Engineering to East Park Terrace	£37.79m	£34.833m	£12.7m
Upgrades and expansion of retained uses on Lower Site, Warsash	£17.736m	£17.736m	£23.1m
TOTAL	**£55.526m**	**£58.869m**	**£42.1m**

Even with assumed external funding contributions, Options 2b and 2c were considered to be an unaffordable level of investment in the context of the University's approved Capital Programme and other competing priorities. The conclusion therefore was that **Option 2d**, incorporating the redesign and reconfiguration of existing accommodation at EPT is likely to deliver the greatest benefits and value for money within an affordable cost envelope. It will deliver a world class, high profile maritime training facility school with its own sub-brand and identity on the campus, and synergies from the co-location of Research and Innovation activities alongside core training. It will also deliver a major upgrade to one of the University's oldest buildings.

The Project is expected to generate the following benefits:

Number of new permanent jobs created directly	25 Derived from estimate of additional staff required to support revenue growth projections and new research posts.
Number of new permanent jobs created indirectly	272 gross (133 net) Gross number of jobs derived from estimates of additional student spend and new jobs generated through growth in training volumes and expansion of maritime curriculum. Net figure adjusts for leakage outside Solent area and displacement (activity that would be delivered elsewhere).
Number of safeguarded jobs	131 Without this investment, the Maritime Academy is likely to experience a progressive loss of revenue to UK and international competitors, who have already invested substantially in modern facilities, and will be unable to sustain its position as a global market leader in maritime training and education.
New houses enabled	50-80 housing units at Warsash. This estimate is based upon a Site Masterplan Options Report on the upper site at Warsash Maritime Academy prepared by Turley Associates in December 2015.

New Skills Estate Delivered	3200 sq m – waterside training facilities on the Lower Site at Warsash.
Skills Estates improved *(type and m^2)*	2725 sq m - classrooms, training rooms, offices and simulator suite at the University's EPT Campus.
Skills outputs *(apprentices / learners)*	230 new learners per annum by 2021/22. Based on 12% increase in FTE student/delegates over a 3 year period and additions to the maritime curriculum, e.g. introduction of degree in Maritime Law and Management, Sustainability Science, Renewable Energy Engineering and Superyacht Design. At this stage, exact apprenticeship numbers are difficult to predict as we work through new course provision proposals, establishing standards, etc, however, a range of 40-80 by the end of year five would be a realistic target.
Total wider leveraged investment resulting from the Project	There will be private sector investment in new housing and potentially additional investment generated through research activities and Knowledge Transfer carried out in partnership with Marine and Maritime enterprise.

Other outputs.	The Project will deliver the colocation of training and education facilities with maritime research and yacht and powerboat design in the City Centre closer to the marine industry, research and regulatory bodies in the Solent Maritime Cluster and more accessible to UK and international maritime organisations. These factors will enable the University to grow the Maritime and Technology Research Hub and increase its world leading research for Research Excellence Framework 2021. It will expand the scope to partners within industry and beyond to commission research which responds to immediate industry concerns and needs. The closer connections between the hub and industry mean that partners who undertake consultancy, co-sponsored research projects, studentships or knowledge transfer partnerships with Solent will benefit from up-to-the-minute research in a number of fast moving fields. Our broad estimates are that it could deliver an increase in knowledge transfer partnerships by two p.a. It is anticipated that the University's export income will increase by c.10% p.a. as a consequence of overall growth in capacity and international demand for maritime training.

4.3 Economic Impacts

This section sets out projected economic benefits calculated in accordance with HM Treasury Green Book guidance. The assumption is that whilst the required levels of capital investment under each of the options described above may vary, the wider economic benefits arising from relocation to the City Centre will be the same for all of these options. For the purposes of the Business Case therefore, an economic appraisal has only been carried out on the preferred Option 2d above.

The project will demonstrate additionality in a number of areas:

- Through the creation of direct new jobs at the University in training, research and administration to deliver the projected revenue growth generated by the creation of extra training and education capacity in truly world class facilities that enhance the global standing of the Academy and the School.

- Indirect employment generated within the regional economy from higher levels of student/delegate spending generated from the relocation of training and accommodation into the city centre, and the expansion of course capacity and range.

- Employment generated within local and regional businesses from a higher output of qualified Officer Cadets, apprentice engineers and STEM graduates, and new roles arising from stronger partnerships with local maritime enterprise, closer collaboration with maritime research, education and regulatory bodies in the Solent Maritime Cluster, and advances in the University's leading edge research especially in the field of human factors at sea.

The implied baseline scenario is that if no investment was made, training would continue at current levels (i.e. zero growth) and there would be no additional direct and indirect employment benefits. In fact, the more likely consequence of failing to invest would be negative growth and a net loss of employment as WMA experiences a progressive erosion of business to its UK and international competitors.

The assessment of economic impact is supported by a spreadsheet which shows how economic impact forecasts have been calculated, including the assumptions, adjustments and calculations completed in each case.

The key assumptions underpinning the estimates and appraisal of economic impact are:

- The design and construction of the facilities will occur over three financial years. Demand stimulation activities are already underway on the basis of the prospect of new facilities and will continue over the construction period to secure strong levels of demand ahead of the facilities opening. It is assumed that if the Project did not go ahead, any growth achieved during the construction phase in terms of student and staff numbers would not be sustainable.
- The FTE student/delegate numbers are forecast to increase by 12% over a three year period from 2017/18, through increases in capacity and demand stimulated by new facilities and the introduction of new courses.
- The benefits associated with the School only capture those associated with its expansion (i.e. additional trainees/delegates and staff), the relocated activity is excluded given that this is not additional.
- All jobs are expressed as full time equivalent (FTE) and are created as a result of:
    - The expansion of the School and delivery of revenue programmes requiring additional academic and administrative staff, and expanded research capability. These are based on the University's provisional estimates of new staff required to support projected revenue growth.
    - Additional student expenditure in the local economy. The estimates are based on the average annual student spend from a 2013 report on the economic impact of the University.

- Additional jobs generated in marine and maritime businesses, institutions and regulatory bodies. These are derived from projected annual growth in long course students and the introduction of new courses (e.g. degrees in renewable energy and superyacht design). It has been assumed that the local GVA impact of these new indirect jobs would reduce at a rate of 20% per annum.

The GVA benefits are calculated by application of the benchmark of £43,350 per employee (ONS 2013 published data for Southampton) to FTEs created.

Both the gross and net economic impact has been estimated. The latter takes account of deadweight, displacement and leakage as well as the benefits of multipliers. The adjustment for deadweight removes the economic benefits that would have occurred in the absence of public sector investment. The displacement adjustment reduces benefits to take account of benefits being redistributed from other parts of the sub-regional economy, while leakage removes the benefits that occur outside of the Solent LEP area.

The multipliers are applied to capture the indirect and induced effects resulting from increased expenditure on suppliers by the companies creating additional jobs and the recirculation of wages generated by the new posts in the local economy. The level of adjustment is based on the latest HCA Additionality Guidance.

The principal assumptions adopted are:

- The analysis period is 2017 to 2032 i.e. 15 years from the start date of the public expenditure and
- A 3.5% social discount rate is applied in line with HM Treasury Green Book guidance.

Two core value for money measures are considered: public sector cost per net job created; and net additional GVA generated per £1 of public sector investment.

Based on this appraisal, the summary outputs are as follows:

	Total
Gross Impact	
University Staff (FTEs)	**25**
Indirect FTEs through student spend	**100**
Indirect FTEs through job creation	**473**
TOTAL	**598**
Net Impact	
Total Net FTEs	**276**
Net annual GVA (Yr 15)	**£9,283,870**
Cost/Benefit	
Total Costs (discounted)	**£34,151,805**
Total Costs (undiscounted)	**£35,800,000**
GVA Benefit over 15 yrs (discounted)	**£94,471,416**
GVA Benefit over 15 yrs (undiscounted)	**£122,533,736**
Benefit/cost ratio	**2.766**
Value for Money	
Growth Fund Capital Cost per FTE	**£12,484**
Net Additional GVA	**£122,533,736**
Net Additional GVA/£1 LGF Funding	**£16.43**

4.4 Conclusion

- Based on this analysis, the project delivers a positive cost/benefit ratio in terms of GVA vs. capital cost.

- Whilst the cost per job unlocked by the funding is higher than would be the case for other types of project the leverage is higher because of the annually recurring impact of new jobs into the local economy.
- This analysis focuses on employment related benefits and should be considered alongside a wider range of benefits described in the sections above including the release of land with potential for up to 80 units and the contribution that the Project will make to strengthening UK competitiveness and productivity at both a local and national level, through addressing skills shortages within maritime engineering, and supporting innovation within the Solent Marine and Maritime Cluster.

5.0 FINANCIAL CASE

5.1 Capital Costs and Funding

For the preferred Option 2d, capital funding would be sought from the SSPIF to complement the funding secured from the University' Capital Programme and private sponsorship. The SSPIF was identified as the most appropriate funding source to complete the funding package when reviewing financing options and taking account of the scale of funding required, the Project objectives and nature of the activities and the timescales. The stage of development which the Project is at means the University is well placed for capital works to commence promptly and for Project expenditure to align with the timescales of the Fund.

The table below sets out the capital costs for the two remaining construction phases in the preferred Option 2d.

Cost budgets have been developed by Mace and AECOM using current pricing information and recent tendered rates and inflation has been applied to the mid-point of the construction programme. Although final capital costs will not be known until works are procured, appropriate steps have been taken to benchmark estimates and secure an independent perspective to reduce the potential risk. It is noted that the project budget will require monitoring to ensure that it continues to reflect both scheme requirements and market conditions.

Phase		**Cost Estimate (excl. VAT)**	**Cost Estimate (incl.VAT)**	**Source**
2	New Warsash School of Maritime Science and Engineering to RM Building and Andrews LRC at EPT	£10.889m	£12.70m	Mace Cost Plan - Excludes cladding. Includes new simulators at £1.5m
3	Upgrades and expansion of retained uses on Lower Site at Warsash	£19.25m	£23.10m	AECOM Cost Plan
	TOTAL	**£30.13m**	**£35.80m**	

The cost and expenditure profile set out below is based on the construction timescales and funding being available to cover total costs each year.

The table below sets out the expected drawdown of University and SSPIF funding streams for the Project. It is proposed to draw down all SSPIF funding in 2018/19 for the initial works to the RM Building and Andrews Learning Resource Centre (Phase 2) and site separation works (Lower Site from Upper Site) at Warsash. In drawing down the initial allocation, the University is committing to delivering the full Project and realising all benefits.

	2017/18	2018/19	2019/20	Total
SSU Contributions	£1,416,964	£14,854,374	£12,067,942	**£28,339,280**
SSPIF Funding Request		£7,464,200		**£7,464,200**
Total Project Costs	£1,416,964	£22,318,574	£12,067,942	**£35,803,480**

Overall, the preferred Option 2d is considered affordable. Although final capital costs will not be known until works are procured, appropriate steps have been taken to benchmark estimates and secure an independent perspective to reduce the potential risk and the scale of forecast benefits also outweighs the requested investment.

6.0 COMMERCIAL CASE

This section focuses on considerations for delivery of the preferred Option 2d to demonstrate that robust processes and procedures are in place to guide delivery, both in accordance with good practice in the delivery of capital works and compliance with public funding requirements. The content of this section will remain under review throughout the Project's delivery period and will be amended as necessary (e.g. to update Project risk) to take account of advancing plans for WSMSE and to reflect experience of delivering the Project itself and any changes in wider conditions. All proposals build on SSU's experience of successfully delivering comparable contracts.

6.1 Procurement and Contracting Arrangements

Separate procurement exercises will be required for each phase of the Project. As set out in the following sections a series of procurement exercises will be required to procure and contract technical and design expertise, the construction of the facility and the purchase of specialist equipment.

Technical and Design Team - A range of technical and design expertise has been required to progress the Project proposal to this stage. The appointments followed accepted procedures under the terms of this competitively let framework. The table below sets out the consultant teams that the University has put in place to date for each phase of the project.

	Phase 2 – RM Building and Andrews Learning Resource Centre at EPT	**Phase 3 - Warsash Lower Site**	**Phase 4 - Sale of Warsash Upper Site**
Project Manager	Mace	Internal	
Cost Consultant	Mace	AECOM	
Architect	Mace	Pope Priestly Architects LLP	
M&E	Mace	TNG Consulting Engineers	
Planning Advisors	n/a	Turley Associates	Turley Associates

Civil and Structural Engineer	Mace	WFBA Limited	
Main Contractors	TBC	TBC	
Commercial Property Advisors	n/a	n/a	Real Estate Strategies Limited.

Construction

As part of the development of the preferred solution, the University evaluated the procurement and contracting options for the construction works. The options have been considered within the probity guidelines prescribed by the Public Contracts Regulations 2006. Within these regulations, the University is defined as a Contracting Authority.

Reflecting the value of works proposed, the procurement of the construction works follows an OJEU compliant process and ensures that procurement meets the requirements of funding agreements. Two compliant approaches have been considered: (i) procuring the construction works via an advert within the OJEU; or (ii) using an OJEU compliant framework.

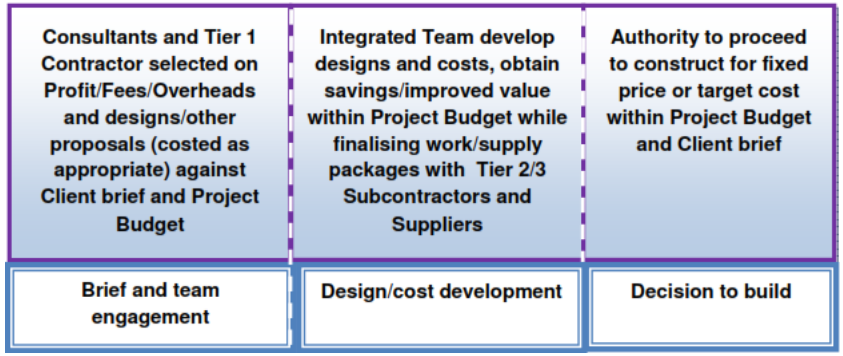
When considering the option of using an advert within the OJEU, it was noted that it is imperative that suppliers are selected that meet the requisite standard of performance to ensure that the design proposals are developed and delivered in accordance with the University's objectives. Given the foregoing, the Restricted Procedure, is applicable. This permits the Contracting Authority to set minimum criteria relating to technical, economic and financial capabilities that the suppliers have to satisfy. Following evaluation and shortlisting, a minimum of five suppliers (unless fewer qualify) would be invited to proceed to tender in the second stage.

The alternative is to appoint a contractor via an OJEU compliant framework. This involves holding a mini competition between suppliers who have been appointed to a framework through an OJEU compliant process for works of a comparable nature to those proposed through this project and which has taken account of suppliers' ability to meet pre-qualification criteria, including financial security and experience of delivering contracts of a similar value and nature.

Construction works for Phase One were procured through an OJEU compliant framework – The Southern Construction Hub – which has been used to procure a wide variety of construction contracts across the region, including those funded through public sector sources. A similar approach is likely to be adopted for Phases Two and Three. This offers the benefits of:

- Reduced timescales and resources for procurement given that suppliers have already satisfied pre-qualification criteria – the programme would be extended by circa three to five months if the alternative approach was pursued, incurring additional costs and fees.
- Assurance that suppliers have been vetted for financial security and ability to undertake projects of a similar value and nature.
- Assurance that suppliers have been selected by compliant OJEU procedures and by set best practice procurement guidelines.

The tender will be conducted in accordance with the Southern Construction Hub's procurement guidelines and an OJEU compliant two stage open book approach will be applied to develop cost savings and other improved value, through early main contractor/subcontractor/supplier contributions whereby consultants and contractors are invited to bid based on a client brief and budget. The key stages are illustrated below:



Purchase of Specialist Equipment

All equipment required in the resulting facilities will also be procured through a competitive process that is appropriate to the value of equipment required. Each procurement exercise will follow the University's procurement policy which complies with public procurement regulations. Depending on the scale of opportunity, approaches can include inviting quotes from three bidders (for low value opportunities), open advertising for suppliers (non-OJEU) and following an OJEU process. In all instances, checks will be made to ensure that proposed procedures comply with funder requirements.

6.2 Programme

Implementation timescales have been established to reflect a series of considerations including:

- Lead in times required to ensure compliant procurement
- Site availability to allow works to proceed
- Expert advice regarding timescales for the delivery of works of the nature and scale proposed
- SSU's target timescales for the development and operation of proposed facilities
- The anticipated timing of funding availability

The key stages and milestones for each construction phase are as follows.

Milestones	**Phase Two – RM Building and Andrews Learning Resource Centre at EPT**	**Phase Three – Lower Site, Warsash**
Client Brief and Project Budget	November 2017	December 2017
Procurement documentation issued to Framework	October/November 2017	March-April 2018
Selection of Framework Contractor	March 2018	April-June 2018
Full design and cost budget approved	May/July 2018	December 2018-April 2019 (three phases)
Planning applications submitted	TBC	November-December 2018
Planning consents in place	TBC	TBC
Construction commences	May/August 2018	January-February 2019

Handover	**October 2018 – RM Building** **March 2019 – Simulators (Andrews LRC)**	**September-October 2019 (Fire School)** **January-February 2020 (Thorneycroft)** **November-December 2020 (Watersports and Drummond)**

A Master Programme has been developed in conjunction with the design team and the University's Projects and Estate Development Team. This sets out the processes and tasks to be undertaken to deliver the scheme showing key reporting and approval dates, design and construction periods, client vacation/handover/occupation dates and the planning approvals process.

This programme will provide the basis for monitoring of project activities throughout the delivery period, a Project Executive Group already operational for both the EPT and Warsash Lower Site works. It will be reviewed on a regular basis to check if activity remains on track and allow action to be taken to return the Project to profile when necessary.

6.3 Project Risk

As with every project, there are a series of risks that could potentially impact on the Project's successful delivery. Care has however been taken to identify risks up front, assess the likelihood of each arising and the impacts if they do. This assessment process has allowed a series of mitigating actions to be identified that are already being implemented to minimise the potential for risks to arise and the potential severity of impacts if they do.

A wide range of risks have been considered in relation to the Project, building on the team's experience of planning, procuring and delivering a variety of capital projects and the following primary risks have been identified. A detailed log will be prepared as the plans progress to allow for regular monitoring of risk during both the Project's development and operational phases.

Risk	Mitigating Actions
Changes to the design throughout delivery	Change control to be implemented for all future potential changes from RIBA Stage 2 onwards A design reserve will be included in the budget (in addition to a project contingency)

Procurement exercise affects project start date	OJEU compliant framework to be used to procure construction works, reducing the timescales for the procurement exercise
Delays to start on site	Early site surveys are already being conducted and the University will liaise with local planning authority to support the scheme through the process. A detailed Master Programme will be prepared setting out realistic and achievable timescales for the Project. Master Programme will be used to manage and monitor progress of pre-on site activities Master Programme will be updated to reflect any changes to dates
Construction period longer than anticipated (e.g. unforeseen challenges identified on site)	Early site surveys will be conducted Detailed Master Programme will be prepared setting out realistic and achievable timescales for the Project. Master Programme will be used to manage and monitor progress of pre-on site activities Master Programme will be updated to reflect any changes to dates
Failure to secure required consents (planning and highways)	Early discussions and engagement with Planning and Highways Team
Cost estimates prove to be inaccurate	Professional cost consultants appointed to determine costs and risks. Costs will include a contingency and design reserve Risks to cost increases will be included in main Risk Register and subject to risk management procedures
Expenditure of funding does not occur within required timescales	Detailed Master Programme will be prepared setting out realistic and achievable timescales for the Project. This will include the timings of activities required to ensure that expenditure occurs within the required timescales Master Programme will be used to manage and monitor progress
Project does not meet funder requirements	OJEU compliant procurement processes will be followed Detailed reviews of funding requirements will be undertaken as part of Project development activity and will be formally documented following funding grants. This will include a schedule of activities that will need to be carried out to meet the evidence and auditing requirements of funders. These activities will be monitored on a regular basis. University has extensive experience of delivering projects in line with funding requirements, including significant capital investments

Demand for increased student places is lower than expected	Evidence of demand Early marketing activity to students to take place Interest to be monitored and any issues to take up to be addressed where possible
Demand for business engagement/research activity is lower than expected	Evidence of demand Early dialogue with business to stimulate further demand and engagement Interest to be monitored and any issues to take up to be addressed where possible

As part of internal project management procedures, all risks will also be assigned an owner to ensure transparency in risk management responsibilities. Clear reporting routes will ensure the Project Leader is alerted to any changes in risk profile, for example if the likelihood of a risk arising is considered to have increased or wider implications of potential risks are identified. This approach will ensure the prompt escalation of risks and allow for necessary actions to be taken to ensure the project continues to be delivered on budget, to time and to high quality standards. Consideration of risks will also be a standing agenda item for project meetings.

6.4 Payment Mechanisms

Payments will be drawn down for delivered works at key milestones and in line with the requirements of each funding stream stipulated in funding agreements/contracts for each phase. This will include ensuring compliance with supporting evidence requirements to underpin project claims. Payments will at no point exceed the extent of costs incurred and stage of works completed at that stage.

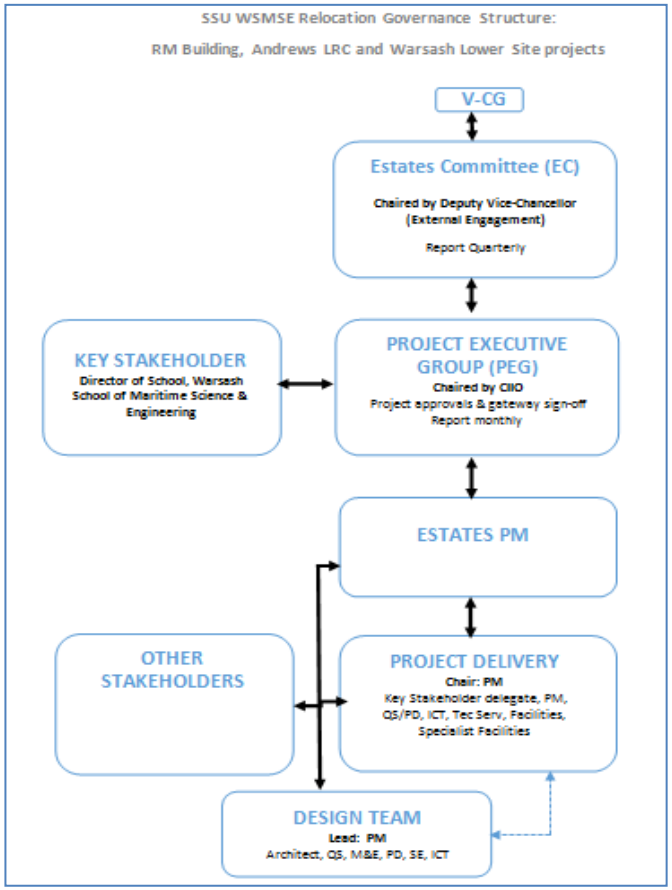
All payment terms will be clearly outlined as part of the tender and contracting process. Documentation will clearly articulate that payments will be linked to the delivery of services. Payment milestones will be agreed at the start of the contract period along with evidence requirements associated with each payment. Funds will only be released at the point milestones are reached and the agreed requirements for that stage have been evidenced as achieved.

All works will be procured on a fixed cost basis, passing risks associated with potential cost over-runs once contracts are live on to the contractor. Contract terms will highlight the potential use of penalty clauses in the event of failure to deliver works to the agreed specification (including to agreed timescales and quality standards) with the option to terminate the contract noted in the event of failure to perform.

7.0 MANAGEMENT CASE

7.1 Governance Framework

The Project is being delivered in accordance with the University's standard project management approach. Various different groups have been formed to oversee the development of project proposals and the delivery of activity. All are chaired by senior University personnel and are ensuring that the Project is being considered and monitored from a range of perspectives.



The University Board of Governors is the governing body of SSU and conducts its business in accordance with the Articles of Government. The Board of Governors has a central role in planning SSU's future and ensuring overarching ambitions are met. They have a strong interest in the development and delivery of the University's Estate Strategy with development of WMA and the School recognised as a central component of delivery of the University's vision for the future. It is responsible for approving the overall capital envelope submitted by a bids panel following the annual call for bids and for ensuring that the Project aligns with the wider activity taking place across the University.

The Estates Committee is responsible for oversight of the entire capital programme, including both IT and real estate investments. The Major Builds Project Group is responsible for monitoring risk, budget and approving change requests in respect of the three major projects that form the Masterplan for the East Park Terrace Campus and for directing liaison and engagement with a range of internal and external stakeholder groups, including those who are tasked with the non-construction elements of the Project and will manage the facility once fully operational.

7.2 Reporting and Approvals

All team members have clear areas of responsibility and understand how they fit into the wider team structure. Reporting lines will be as shown above in the governance structure diagram from the Project Team, up through the Major Projects Group and Estates Committee to the University Board

Given the proposed funding package, the Project's progress will also be reported to the LEP Board and the equivalent structures responsible for the management and governance of funding. The reporting arrangements will be confirmed with the LEP at the point of contracting but it is understood that quarterly monitoring returns will be submitted to the LEP.

Following final LEP approval, the Project Sponsor will sign a funding agreement with the LEP's accountable body. This will commit the Project Sponsor to providing management information on outputs, delivery and financial spend at required intervals.

7.3 Change Management

The Project Team recognises the need to remain alert to the need to change elements of the Project during both the design and implementation stages, in response to unforeseen circumstances. A series of mechanisms are in place (including the Master Programme, project review meetings and risk management arrangements) to allow the need for change to be identified at an early stage and options to be considered and assessed in response. The

team's experience of delivering other large scale investments has also provided direct experience of the need to identify and act on requirements for changes.

A change management process will be implemented for all potential design and implementation changes from SSU's approved layout freeze / RIBA Stage 2 onwards and will be established and administered by the Project Manager. The system will capture all material changes to the project, using the Project Brief as the baseline.

All Project Team Members and contractors will be briefed on the rules and procedures of the change management system in order for it to be used successfully and will be regularly prompted to ensure compliance.

Change Request Forms (CRF) must be raised for all changes which will have a material effect on cost, the critical path/programme, quality or end user requirements. The CRFs are to be recognised as the only mechanism of introducing potential changes to the Project. A CRF can be raised by any party to the Project and should be channelled in the first instance through the Project Manager, who will circulate the CRF among relevant members of the Project Team to gather further information in order to assess the implications of the change before presenting it to the Client for consideration. The process stipulates that potential changes must not be actioned until they have been approved by the Client.

The instigator of the change will submit the completed CRF to the Project Manager who will allocate a unique number and enter details into the CRF Register. The Register summarises the status of all CRFs issues to date and will be prepared and administered by the Project Manager. Unavoidable changes are those which must be instructed to maintain progress to the project in accordance with the approved project brief/design and will therefore follow the fast-track route.

In terms of authority for implementing change, the Project Manager has authority to:

- Reallocate monies within the Master Cost Plan
- Vary the Project Brief in conjunction with the Client
- Vary the Master Programme in conjunction with the Client

In all of the instances above, any changes that impact on the terms of funding awards will be discussed with the funder(s) and necessary permissions secured ahead of changes being agreed and implemented.

7.4 Benefits Realisation

As noted elsewhere in this business case, a wide range of benefits are forecast to be generated through delivery of the Project. The Project Team recognise the importance of having robust arrangements in place to allow benefits to be captured and to be alert to instances where there may be challenges to achieving anticipated benefits.

The approach to benefits capture includes:

- Agreeing target benefits at the point of finalising project details/funding agreements, prior to delivery commencing, including indicators to be used, how they are anticipated to arise from supported activities, responsible owners and timescales for achievement.
- Alerting all members of the Delivery Team to the anticipated range of benefits at the outset of activity so everyone is aware of the target indicators (including the definitions being used).
- Giving the Project Manager overall responsibility for benefits capture with responsible owners to be identified against each indicator below this.
- Alerting works teams/contractors to the benefits they are responsible for realising and how evidence will need to be captured (e.g. frequency, definitions, form to be completed, timing and submission arrangements).
- Having clear overall monitoring and evaluation approaches.
- Reviewing progress against benefits indicators as part of project meetings and agreeing remedial actions in the event of performance below target.
- Completing a Benefits Register, updated as necessary on a rolling basis.

A Benefits Register will be compiled for all the benefits identified through the Economic Case. The content will remain under review through the course of implementation to ensure identified indicators continue to provide a true reflection of the activities being delivered and benefits arising.

7.5 Risk Management

SSU recognises that risk management is an essential tool on all projects regardless of size and value and sets out that the risk management process is to be implemented for the following reasons:

- Avoid project overruns
- Provide greater confidence in investment decisions
- Increase certainty in project outturn
- Identify where most risk can be driven out

- Improve likelihood that the Project will successfully achieve its objectives

A systematic approach to the identification, assessment and control of the significant identified risks will be implemented on the Project. The risk management procedures will be applied at every stage of the Project, however the capacity for maximum impact is at the earliest stages, where the costs of any major changes to a project are at their minimum.

The key elements of the risk register are to

- Make risk explicit to allow rational commercial decisions to be taken
- To advise regarding risk allocation
- Achieve clear and unambiguous risk allocation through choice of contract
- Reduce risk through a structured process of identify-analyse-respond
- Implement a process of transfer, accept, avoid, insure

Areas of high risk will be reviewed to ensure that all reasonably practicable measures are taken to mitigate them. Cost effective risk mitigation measures are to be implemented, reviewed and managed to their close out.

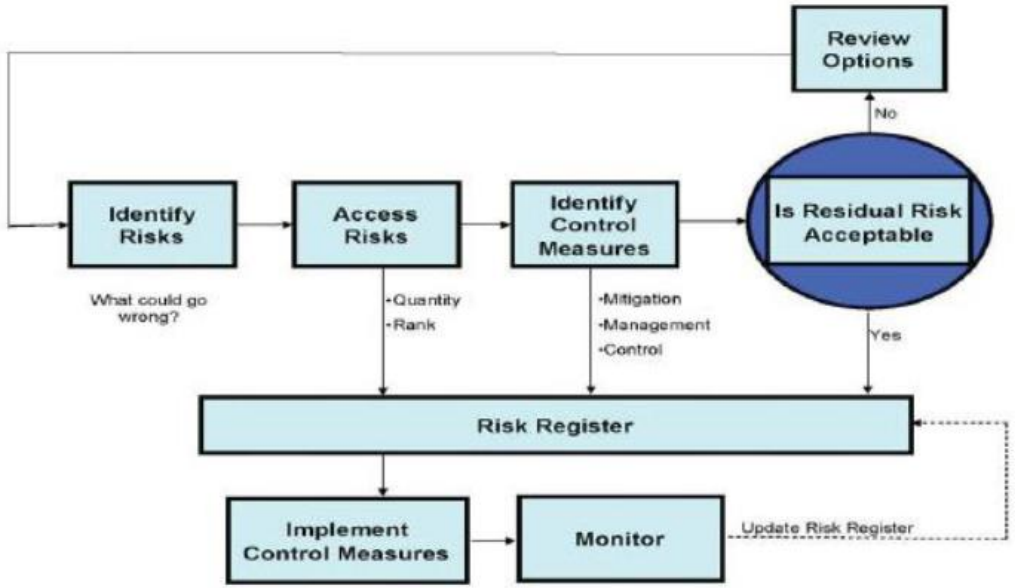
The risk management process involves a workshop during the Concept Design Stage (RIBA Stage 2) to identify all potential project risks. An Action Plan that addresses each risk by reducing, minimising or managing the risk will then be produced. Regular reviews of the identified risks will be completed on an ongoing basis to ensure pro-active risk management rather than a reactive risk response.

The Project Team will complete regular reviews of all aspects of risk throughout the Project, including monthly re-appraisal of risks by team members where they have been identified as being the manager in their respective project reports. Typical elements considered will include design status, information flow, market forces upon tenders, site progress and programme against planned, rates of contingency draw down etc. Such controls and disciplines enable early corrective action to be taken if required.

Effective monitoring and reporting is an essential tool in the management process. Each member of the Project Team will provide regular detailed reports highlighting any shortfalls and actions required to mitigate remaining risks.

The Project Manager will review these reports, and progress will be assessed against the Master Programme. The resulting analysis, including forecasts of future progress, will be included in the regular project reports to the University. In addition, project reports will highlight key issues and progress. This will enable the Cost Consultants and the University to review and where necessary, agree corrective actions.

The Risk Management process is summarised in the following diagram:



The process is underpinned by the risk management procedures which follow a number of formal steps:

Stage 1 - Risk Assessment

The assessment stage of the risk management process starts with the decision to hold a risk assessment workshop for the Project. This will be carried out in a brainstorming / workshop format, and involves as many members of the Project Team and University representatives as required to contribute the appropriate specialist knowledge necessary.

Stage 2 - Risk Identification

- The process of risk identification, risk control measure identification and allocation, and the scoring of the residual risk is all done during the risk assessment meeting
- Each item of the standard agenda is addressed and a brainstorming of potential risks is carried out. Risk control measures are identified and allocated to individuals
- Risks are not scored until all of the risk control measures have been identified. The scoring is then based on the assumption that all of the risk control measures are enacted and are to be effective. This is known as residual risk scoring
- Risk Manager ensures that all items are considered and appropriate action agreed
- Risk Register is prepared to provide a record. This is known as the Live Risk Register

Stage 3 - Analysis

- Once the Live Risk Register is available an exercise to define the basis of low and high probability and impact for each Risk Assessment will be completed
- A simple grading system is used, grading both probability and impact, on a scale of 1 (low) to 5 (high)
- This is a subjective assessment to help highlight those items (i.e. those with the highest score) which may need immediate action

Stage 4 - Risk Ranking

The Risk Ranking is obtained by multiplying the probability score to the impact scores. The total values that are obtained will be subject to interpretation.

Total Score	**Interpretation**	**Guidance**
10-25	Unacceptable – Red	Intolerable, must be mitigated or transferred
5-9	Unacceptable – Amber	To be avoided if reasonably practicable. Investigation required, monitoring essential
1-4	Unacceptable – Green	Can be accepted provided risk is managed

Stage 5 - Team action

Implementation is the responsibility of the whole Project Team, with specific risk control measures being the responsibility of line managers, and these should be treated as any other management task with time, cost, and quality targets.

Stage 6 - Live Risk Register

The result of the Risk Assessment process is that a Live Risk Register is available for issue and action. The Live Risk Register should be reviewed at regular intervals of probably one to two months, dependant on the project stage.

Such a review would assess the effectiveness of the completed Risk Control Measures (RCM's) as well as any further additional measures considered necessary as a result of changes or the release of additional project information. Such a review would also reflect the stage of the Project. For example, at the first Risk Assessment, commissioning would probably not be covered in great detail. However, towards the middle of a project, this subject would start to become a major issue and would therefore be covered in more detail, with more RCM's identified.

The Register is to be the permanent auditable record of the risk items that have been identified, considered and dealt with. Review notes are to be added to the Live Risk Register that will explain what actions have been taken, with a view of their effectiveness. This provides the additional benefit of an interim project de-brief.

7.6 Project Evaluation

The University recognises the importance of both monitoring and evaluating activities to assess how investments respond to stated objectives and allow lessons to be learned to inform future delivery. The University also recognises that public sector funding bodies will require monitoring and evaluation activities to be undertaken and this will be included in contracting and funding agreements. The Project Manager will be responsible for ensuring an evaluation is completed and that the required inputs for any external evaluations commissioned by funding bodies are provided.

Evaluation will comprise two elements, in accordance with guidance:

- Project evaluation review – conducted during the project design and implementation stages; and
- Post implementation review – conducted after delivery has concluded.

The scope of each exercise is outlined below

Proposed Evaluation Considerations	
Project Evaluation Review	**Post Implementation Review**
• The need for intervention • Strategic fit/contribution to partner objectives • Ability of proposed works to address identified challenges • Robustness of procurement processes • Appropriateness of proposed delivery arrangements • Risk and change management procedures	• Effectiveness of delivery arrangements • Ability of the project to respond to any challenges encountered • Achievement of target outputs • Achievement of wider objectives • Nature and scale of benefits realised • Value for money/return on investment • Lessons for future activity

The Project Evaluation Review (PER) will be undertaken in house and supported by the outcomes of the Green Book appraisal of this business case. The content of the business case has also been shaped in response to stakeholder feedback secured throughout the project development phase. This reflects the iterative process taken to finalise scheme details and associated delivery arrangements. In contrast, the Post Implementation Review (PIR) will be undertaken by an independent party.

APPENDICES*

***Please note certain Appendices are commercially sensitive and marked 'Confidential' accordingly – as per the Guidance Document, these are included for assessment purposes, but not publication please.**

A – Phase Two Project Plans, Budget Estimates and Programme

B – Phase Three Project Budget Estimates and Programme

C – Economic Benefits Model

[i] Solent Local Enterprise Partnership. 2014 (March). Solent LEP: Skills Strategy 2014 – 2016. Portsmouth: Solent LEP, Version 1, p. 9
https://solentlep.org.uk/media/1210/solent_skills_plan_2014.pdf

[ii] Rear Admiral Rob Stevens, CB. 2014 (March). Transforming Solent: Marine & Maritime Supplement.
www.push.gov.uk/marine___maritime_supplement_march_2014.pdf