

**INDUSTRY DEVELOPMENTS AND WORKFORCE CHALLENGES: Identify any specific or general industry developments and links between skills obtained through VET and/or university to ensure optimum employment for Western Australians.**

Western Australia's defence presence, which includes HMAS Stirling, RAAF Base Pearce and Campbell Barracks, is well established. Over 7800 Defence personnel operate in Western Australia including Navy, Army, Air Force, civilian and Reservists<sup>i</sup>. This number is forecast to grow over the coming years. The largest number of personnel are based at HMAS Stirling – Garden Island, with the activities there also involving the greatest Defence Industries support. HMAS Stirling has emerged as the Royal Australian Navy's (RAN) major fleet base on the Indian Ocean with up to half of the RAN's fleet based permanently in Western Australia, including all six of the Collins-class submarines.

Following the initial strategy identified in the WA Plan for Jobs, Defence West was established to champion the interests of the Western Australia defence industry and create job opportunities for Western Australians. Defence West, through extensive consultation, both nationally and locally, has developed the *Western Australian Defence and Defence Industries Strategic Plan*, which identifies six key strategic actions including:

- Supporting a strong and enduring defence presence;
- Growing the State's defence industry capability and contribution;
- Developing strategic infrastructure;
- Building research and innovation partnerships;
- Advancing education training and skills; and
- Supporting veterans and their families.

The West Australian defence industry provides essential capability, services and support to the Australian Defence Force (ADF) with more than 3000 workers employed by both small and medium enterprises operating in this sector.<sup>ii</sup>

One of the major actions already undertaken has been the establishment of the WA Defence Industry Workforce Office based at the South Metropolitan (SM) TAFE Naval Base Campus. Their main activity over the past 18 months has been extensive consultation with the key stakeholders engaged in shipbuilding and repairs for the Navy in Western Australia. Two major documents have been produced but are both still awaiting endorsement by the State Government.

- *Blue Collar Workforce Maritime and Anti-Submarine Warfare Defence Capability Stream 2020-2025;*
- *White and Grey Collar Workforce Maritime and Anti-Submarine Warfare Defence Capability Stream 2020-2025.*

However, some actions have already been acted on by the State Government. These include:

- The new \$2.4 million South Metropolitan TAFE Naval Base Campus, which houses both the WA Defence Industries Workforce Office and the Naval Shipbuilding College, strategically located adjacent to the Australian Marine Complex (AMC).
- There are several engineering apprenticeships relating to shipbuilding that have been funded for half price through the Skills Ready State Government initiative.
- There have also been skill sets offered in relevant defence industry areas such as Introduction to Cybersecurity (fee free).

Due to the existing shipbuilding industry that operates out of Henderson, Western Australia is already heavily involved in supporting the Defence Force through many current and future contracts. These include:

- Build of ten new Offshore Patrol Vessels (OPV);
- Build of 21 Guardian Class Patrol Boats (six already completed);
- Build of 6 Cape Class Patrol Boats;
- Collins-class Submarine sustainment and upgrades (six mid-cycle docking);
- Anzac-class frigate sustain and upgrades under the Warship Asset Management Agreement (WAMA) (approximately 205 jobs);
- Up to 8 Mine Hunters and Hydrographic Survey Vessels; and
- 'Ship Zero' is to be established by Defence in the AMC to form a Navy capability centre in Western Australia, consolidating system program offices for naval vessel construction, sustainment and support programs. Ship Zero will also provide a base for naval personnel while vessels are undergoing maintenance in the AMC and construction is expected to commence in 2020. This will further allow the Navy to provide training while personnel are shore-based.

Other projects supporting defence include:

- Operation and ongoing maintenance of the C-band radar and space telescope in Exmouth;<sup>iii</sup>
- The delivery of fast jet flight training at RAAF Base Pearce;<sup>iv</sup>
- The technical and operational support for all RAAF training aircraft; and
- Locally owned SME will be supporting and managing the operation, repair and maintenance of the AUV62-AT for Defence which is an underwater submarine simulator used for training in anti-submarine warfare.<sup>v</sup>

The Naval Shipbuilding College (NSC) is an Australian Government initiative supporting the Naval shipbuilding industry and associated supply chain in identifying, and skilling, the workforce needed to build and sustain the Royal Australian Navy's future fleet. The NSC is based in South Australia with an office operating out of SM TAFE Naval Base facility. Associated with this has been the establishment of a Naval Shipbuilding register for those looking for work or those employers looking for their future workforce. The NSC has identified three major employment streams: Supply Chain; Engineering; Operations; and Program Management.

## Defence Industries

### Existing and anticipated supply and demand for skills:

- Western Australia is home to Australia's largest naval base HMAS Stirling, and key Royal Australian Air Force and Australian Army bases. With plans in place to grow and establish additional defence assets and jobs.<sup>vi</sup>
- Following the release of the *Defence White Paper*, The Australian Government is set to invest approximately \$90 billion in recapitalisation works for the defence sector through to 2025.<sup>vii</sup> This level of investment will require strategic partnerships with industry to deliver innovative skills, products and services that will address Defence sector capability needs.<sup>viii</sup>
- According to the Naval Shipbuilding Plan, the Federal Government will invest up to \$62 million in workforce growth and skilling initiatives to enable the delivery of naval ships, submarines, and modern shipyard infrastructure.<sup>ix</sup> The type of the work and the affiliated support services feeding into this industry will generate a growing need for more Science, Technology, Engineering, Mathematics (STEM) skills.
- Western Australia is well positioned to be providing services to the naval shipbuilding industry given the existing infrastructure and industry links to the maritime sector. There are organisations with the capacity to cater for both domestic and international markets.<sup>x</sup>
- The rate at which technological advancement is taking place is impacting the requirements expected of contractors. Changes in manufacturing and operational practices means that there is an opportunity to further enhance the skills of existing workers and to train new entrants as well. Streamlined processes include new design methods, automation, analytics and artificial intelligence.<sup>xi</sup>
- Plans are in place to create additional defence jobs, establish new TAFE training opportunities and boost local manufacturing that will increase demand for job roles within Western Australia. In particular, skilled technicians, Project Managers and Systems Engineers. Those who possess experience on varying defence assists (i.e. aircrafts and ships) will also be highly sought after.<sup>xii</sup>
- The construction of a South West Pacific large hull vessel in Western Australia to support Australia's Pacific Step-Up — a program promoting greater engagement with the region and worth \$120m — has been brought forward, resulting in 165 West Australian jobs being created.<sup>xiii</sup>
- Additional funding will be given to the Defence Innovation Hub to undertake additional targeted investments in defence industries for the development of innovative technology. The capacity of the Australian Cyber Collaboration Centre will be increased to provide a range of online and in-class cyber training courses to Australian industry and supply chains.<sup>xiv</sup>
- Industry consultation has identified that that with the roll out of METRONET and Defence projects, it will result in an increased demand for specialist engineers due to the sheer size and complexity of the projects.<sup>xv</sup> This has been further exacerbated by the increasing demand for specialist engineers in the mining sector which is placing even greater pressure on the limited numbers available.<sup>xvi</sup>
- Welders are going to be in high demand as all sectors of the economy start to ramp up post COVID-19 especially in mining, shipbuilding, rail and other high demand engineering sectors. This shortage is especially prevalent for the high-level skilled welder (pipe fitter specialist) who are ageing at a rate far greater than they are entering the workforce.<sup>xvii</sup>

### Are the relevant VET or university courses/qualifications available in WA? If so does industry know about them?

- SM TAFE has been nominated as the approved/preferred training provider for defence industries in Western Australia.<sup>xviii</sup> SM TAFE have been very proactive in identifying training needs and responding to both the Navy and shipbuilding sector.

- The State Government has invested \$2.4 million in the new Naval Base campus of South Metropolitan TAFE which will deliver a multi-skilled workforce to meet the naval shipbuilding industry's requirements and boost defence work capabilities.<sup>xix</sup>
- Consolidating heavy fabrication, marine fabrication, welding and composite apprenticeship training from the old Henderson and Rockingham campuses, SM TAFE has designed the new facility with training in shipbuilding and defence work in mind.<sup>xx</sup>
- Experienced welders have been identified as a growing shortage and SM TAFE have developed more responsive training to meet the sector's needs.<sup>xxi</sup>
- The shipbuilding industry has identified a looming shortfall in appropriately skilled engineers to work in the shipbuilding sector. This has been further highlighted by the Federal Government who have funded a new Naval Architecture program at the University of New South Wales Canberra. This program will be open engineering students across Australia but its location in Canberra may make it cost prohibitive for prospective students based in Western Australia.<sup>xxii</sup>
- The WA Defence Industries Workforce Office has brought together key industry, defence and university stakeholders to identify the future workforce required to support the naval shipbuilding contracts. The feedback they have received have formed the basis of two workforce development plans, one focused on blue collar workers and the other on grey and white collar workers. The recommendations are currently sitting with the State Government for their endorsement and/or action.<sup>xxiii</sup>
- Edith Cowan University (ECU) and Curtin University have been endorsed by the Naval Shipbuilding College and are working closely with the Defence industry to better align their programs (i.e. cybersecurity).<sup>xxiv</sup>
- As of July 2020, there were more than 600 people registered on the NSC workforce register in Western Australia with many employers also utilizing the register.<sup>xxv</sup>

### **Emerging international, national or State training issues impacting your industry**

- The hard border shutdown for COVID-19 currently impacting Western Australia has meant that as new projects go online, especially naval shipbuilding, companies are struggling to find experienced workers. The training system is attempting to address this issue by offering more courses at minimal cost, but the experience required is not being achieved in the short term.<sup>xxvi</sup> The skills required for people working in defence industries cover a number of different areas and level of expertise.
- For Naval Shipbuilding, **Engineering** has been identified as a skilling area that is crucial to meeting the design, construction and maintenance needs of entities that are awarded defence contracts. But with dropping enrolments occurring at university and minimal focus on the defence industries, attracting suitably experienced engineers is only going to get worse, especially as national and international demand for these workers grows.<sup>xxvii</sup>
- The scale and complexity of current and upcoming scheduled work will require contractors (i.e. **Project managers**) with an adequate level of skills and experience to deliver projects. These include but are not limited to planning, scheduling and estimation.<sup>xxviii</sup>
- Other areas of expertise encompass technology (i.e. knowledge and application of supply chains, industry 4.0 and cybersecurity).<sup>xxix</sup> As some of these are iterative and therefore constantly evolving, it is believed that continual lifelong learning will become a standard practice that needs value adding over time.
- In addition, tradespeople with defence industry experience and a security clearance will also be in high demand.<sup>xxx</sup>

- There is an opportunity to value-add to existing welding training with the use of simulators that although expensive, would allow the student to experience real time real welding experiences and are compatible with live welding equipment. When used, they provide statistical feedback on weld quality, accuracy and comparative improvements in technique. This would allow both TAFE and industry to expand their exposure to more advanced techniques. Welding simulators are currently being used in other States through their VET system.<sup>xxxii</sup>
- Industry has also highlighted that they are open to stronger private/public partnerships regarding training needs.<sup>xxxiii</sup>

### **INDUSTRY WORKFORCE PRIORITIES: What are industry's workforce priorities for the next 4 years? Strategic directions, policies and priorities for industry**

- The Naval Shipbuilding Industry Reference Committee (IRC) has drafted a number of Cases for Change, based on an Industry input that suggest that existing qualifications across several disciplines do not adequately meet the evolving needs of the workforce for projects that are to come online over the next four years.<sup>xxxiii</sup>
- As part of a long term strategy, The Australian Government released the Defence Industry Skilling and Science, Technology, Engineering and Mathematics (STEM) Strategy in February 2019.<sup>xxxiv</sup> This multipronged approach looks at the areas of engagement, attraction, retention and future workforce needs. Defence industry skills support has also been given through sponsorship of industry placements and schools pathway program grants.
- The Department of Defence is currently fast tracking the Federal Government's investment in the defence industry, bringing forward many projects to help stimulate the economy while providing for a growing defence force.
- The Federal Government has announced an increase in funding for its Skilling Australia's Defence Industry (SADI) grants program. Companies and industry associations will be able to apply for skills grants to enable training and upskilling for the defence industry workforce.<sup>xxxv</sup>

## **Defence**

### **Existing and anticipated supply and demand for skills:**

- Approximately 850 Defence personnel form the Naval submarine workforce. The introduction of Australia's future Attack-class submarines will require this workforce to more than double across the next two decades.<sup>xxxvi</sup>
- Skills in high demand for the Australian Defence Force (ADF) include resilience and personal discipline.<sup>xxxvii</sup>
- A 38% increase in applications has been identified by the Defence Force in Western Australia, the second largest of all States and Territories. This has been attributed to the direct impact of COVID- 19. Applicants have come from those industries most impacted such as aviation, tourism and logistics, with women making up a large percentage of the applications.<sup>xxxviii</sup>
- There has also been an increase in the number of reservists since the beginning of 2020, which in part was attributed to the high visibility of the ADF through their assistance with the Eastern State's bushfires. The Federal Government have now announced that reservists who have lost their civilian jobs due to the COVID-19 crisis would be offered more hours with the ADF.<sup>xxxix</sup>

### **Are the relevant VET or university courses/qualifications available in WA? If so does industry know about them?**

- To boost the focus of women with STEM skills in the future defence workforce, Defence has awarded scholarships to two women studying at ECU in science and information technology.<sup>xl</sup>

- In Western Australia, the VET sector has been heavily engaged in the training of the Defence Force, especially SM TAFE and their strong relationship with the Navy. This includes the development of customised training and working with both TAFE and industry to give the navy personnel placements with suitable industry partners to build their knowledge and skills.<sup>xlii</sup>
- Due to the classified nature of defence related activities, a considerable amount of training tends to be done in house; however, there is awareness and access to nationally recognised training activity that could be of use within defence e.g. Diploma of materiel logistics and some engineering qualifications.

### **Emerging international, national or State training issues impacting your industry**

- The growing focus on cyber security by the Defence Force has meant an increased need for high level training in both the VET and university sectors. This will also include a need for experienced data analysts to operate within the defence sectors.

### **INDUSTRY WORKFORCE PRIORITIES: What are industry's workforce priorities for the next 4 years? Strategic directions, policies and priorities for industry**

- The Defence Force across all three divisions has forecast growth in its workforce and will require highly skilled personnel with cyber security, STEM, logistics and IT skills. This need has seen them engage more fully with the university sector, both in Western Australia and nationally to ensure a future ready workforce will be available.

## **Veterans**

A veteran is a person who has served in the Defence Forces and is no longer serving. It is estimated that in Western Australia there are more than 30,000 veterans, with another 350 to 450 defence personnel leaving the force each year.<sup>xliii</sup> Approximately half of new veterans already have jobs to go to, but due to a variety of reasons, the other half may not. It is also not known if those that have jobs are undertaking roles that reflect their skills.

Federally, organizations are working closely to support veterans as they leave the defence force. One initiative is being undertaken through the SkillsBuild initiative of IBM and the advocacy group Solider On, where more than 3,000 veterans and their families will have the opportunity to learn new digital skills with a focus on cybersecurity. The program will also assist in connecting veterans to workplaces and potentially to jobs.<sup>xliiii</sup>

Defence West have identified a gap in the mapping of existing defence personnel skills and experience against civilian qualifications and job roles. A variety of mechanisms have been identified to address this shortfall including:

- Developing a matrix of skills based on rank and trade;
- Mapping identified skills against qualifications and job roles;
- Identifying shortfalls for those transitioning out with reskilling and upskilling opportunities;
- Working with industry stakeholders, especially those who support defence, to identify structured pathways; and
- Establishing a pipeline for veterans to enter the civilian workforce, ensuring the full utilization of their skills.

The LDSC has committed to work with Defence West and other key stakeholders to facilitate the above mechanisms.

- 
- i Medianet Release, Morrison Government Defence Strategy to deliver jobs and investment to Western Australia, 1 July 2020
  - ii WA Defence and Defence Industries Strategic Plan 2018
  - iii Medianet Release, Minister for Defence, Defence Supporting industry to develop world class space capability in WA, 13 July 2020
  - iv Medianet Release, Morrison Government's Defence Strategy to Deliver Jobs And Investment to Western Australia, 1 July 2020
  - v Medianet Release, Morrison Government invests in new anti-submarine training capability, 7 August 2020
  - vi Hays Jobs Report January to June 2020, Trades and Labour.
  - vii 2016 Defence White Paper
  - viii Department of Defence (2018) accessed 11 July 2019, available at
  - ix Naval Shipbuilding Plan, [last accessed May 2017 via [http://www.defence.gov.au/NavalShipbuilding/Plan/Default.asp\\_May2017](http://www.defence.gov.au/NavalShipbuilding/Plan/Default.asp_May2017)]
  - x WA Defence and Defence Industries Strategic Plan 2018
  - xi Naval Shipbuilding Industry Skills Forecast 2019
  - xii Hays Jobs Report January to June 2020, Trades and Labour.
  - xiii The West Australian, ScoMo's new battle for jobs, 26 August 2020
  - xiv The West Australian, ScoMo's new battle for jobs, 26 August 2020
  - xv Consultation with the UEEA Training Council
  - xvi Industry Consultation 2020
  - xvii Consultation with the UEEA Training Council
  - xviii Naval Shipbuilding College: <https://www.navalshipbuildingcollege.com.au/news/naval-shipbuilding-college-expands-to-western-australia/>
  - xix Media Statement, McGowan Government Boost Defence Shipbuilding Opportunities. [Last accessed 6 May 2020, via <https://www.mediastatements.wa.gov.au/Pages/McGowan/2019/05/McGowan-Government-boosts-defence-and-shipbuilding-opportunities.aspx>]
  - xx Media Statement, McGowan Government Boost Defence Shipbuilding Opportunities. [Last accessed 6 May 2020, via <https://www.mediastatements.wa.gov.au/Pages/McGowan/2019/05/McGowan-Government-boosts-defence-and-shipbuilding-opportunities.aspx>]
  - xxi Media Statement, McGowan Government Boost Defence Shipbuilding Opportunities. [Last accessed 6 May 2020, via <https://www.mediastatements.wa.gov.au/Pages/McGowan/2019/05/McGowan-Government-boosts-defence-and-shipbuilding-opportunities.aspx>]
  - xxii Medianet Release, Minister for Defence & Minister for Defence Industry - Boosting Australia's naval shipbuilding capacity through new Naval Architecture program, 18 August 2020
  - xxiii Consultation with the WA Defence Industries Workforce Office
  - xxiv Australian Defence, Naval Shipbuilding College endorses courses at Edith Cowan [Last accessed 7 May 2020 via <https://www.australiandefence.com.au/defence/sea/naval-shipbuilding-college-endorses-courses-at-edith-cowan>]
  - xxv Consultation with the Naval Shipbuilding College
  - xxvi Industry consultation 2020
  - xxvii Industry Consultation 2020
  - xxviii Industry Consultation 2020
  - xxix BAE Systems Newsroom, \$2.9m Industry 4.0 research to drive digital manufacturing in the Hunter Frigate Program. [Last accessed 18 February 2020, Available: <https://www.baesystems.com/en-aus/article/2-9m-research-to-drive-digital-manufacturing>]
  - xxx Hays Jobs Report January to June 2020, Trades and Labour.
  - xxxi Industry Consultation
  - xxxii Industry Consultation
  - xxxiii Australian Industry Skills Committee, August 2019, AISC Communique 13 August 2019 Meeting. [Available <https://www.aisc.net.au/hub/aisc-communique-13-august-2019-0>]
  - xxxiv Defence Industry Skilling and STEM Strategy: [available <http://www.defence.gov.au/SPI/Docs/IndustrySkillingSTEMstrategy.pdf>]
  - xxxv Medianet Release, Minister for Defence & Minister for Defence Industry Major boost for skills funding for Australia's growing defence industry, 26 August 2020
  - xxxvi Recruiting the future Submarine Workforce. 30 January 2019, Medianet Release.
  - xxxvii Recruiting the future Submarine Workforce. 30 January 2019, Medianet Release.
  - xxxviii ABC News, Defence recruiting soars as Australians look for work amid downturn, 4 July 2020
  - xxxix The West Australian, ScoMo's new battle for jobs, 26 August 2020
  - xl Medianet Release, Minister for Defence & Minister for Defence Industry – Scholarships grow Defence's talent pool, 22 August 2020
  - xli Industry consultation 2020
  - xlii WA Defence and Defence Industries Strategic Plan 2018
  - xliii Human Resources Director, IBM to retrain 3,000 veterans on cybersecurity, 20 August 2020