

# Building Western Australia's Defence Industry

Australian Marine Complex Infrastructure Strategy

November 2020





# **Contents**

Foreword	3
Executive summary	5
The Australian Marine Complex and WA's defence industry  Vision	8 8 8
Western Australia's competitive advantages AMC supporting Defence	
Western Australia's defence industry	13 13 13
Workforce and industry development	. 16
Vision for the future of the Australian Marine Complex  Development opportunities  Development of the northern harbour  Development of the southern harbour	17 19 19
Current initiatives  Northern harbour infrastructure  Southern harbour infrastructure  Precinct wide infrastructure	23 24
Technology Precinct and long-term opportunities  Technology Precinct land development opportunities	
Defence opportunities and next steps	<b>26</b>

# **Foreword**

The development of the Australian Marine Complex (AMC) is a remarkable Western Australian story – an example of what our state can achieve with dedicated planning and foresight between government and industry.

Over the past 2 decades, the AMC has grown into an internationally recognised industrial precinct, supporting thousands of local jobs and delivering world-class projects in Australia and around the world.

The AMC's success is the result of careful consideration of industry's expected needs and anticipated opportunities over the long term.

The Western Australian Government is focused on ensuring the AMC continues to develop and capitalise on the ongoing opportunities in the defence, marine and resources sectors.

To this end, we have developed a vision for the AMC to expand its role in Australia's defence industry and capitalise on billions of dollars of job-creating opportunities expected over the coming decades.

A key to realising this vision is enabling the AMC to consolidate its position as the principal location for maritime sustainment and increasing the role our state plays in naval shipbuilding.

To support this strong commitment to defence industry development and to leverage our world-class skills and training, the WA Government has continued to invest in the AMC to build a pipeline of work.

The recent \$87.6 million investment includes major infrastructure upgrades and is expected to create up to 600 local jobs in the process.

To ensure the AMC can meet the future needs of the defence, marine and resources sectors, the WA Government has developed the AMC Strategic Infrastructure and Land Use Plan (SILUP) - a detailed technical document which informs this strategy.

The development of the technical document included consultation with waterfront operators, prime contractors, the public and the Department of Defence.

The implementation of this strategy will allow the AMC to host the construction of current and future Defence vessels, while continuing to be Australia's primary location for naval sustainment.

In parallel to this, the WA Government continues to advocate for Collins Class submarine Full Cycle Docking (FCD) to be relocated to the AMC, which would create up to 3,000 jobs and generate billions of dollars for Western Australia over the life of the program.

We also envisage the AMC as a world leader in cutting-edge maritime, surface and undersea technologies, with facilities dedicated to the research, development and integration of industry innovations.

This strategy provides options for the development of the AMC over the short, medium and long term. It will unlock opportunities for local businesses to create local jobs and deliver economic benefits for all Western Australians.

Premier Mark McGowan **Defence Issues Minister Paul Papalia** 



# **Executive summary**

This strategy outlines a vision to double the value of the state's defence industry to \$6 billion a year by 2030 - providing a pipeline of work for Western Australia and supporting thousands of local jobs.

It is informed by the Strategic Infrastructure and Land Use Plan (SILUP), a detailed document which provides options to enable WA to secure a greater share of naval shipbuilding, sustainment, fabrication and assembly work.

The SILUP outlines a vision for how Western Australia's key defence industry hub, the AMC, can be improved to support this aim.

The improvements would enable the precinct to consolidate its role as Australia's primary location for construction of minor naval vessels, while improving facilities supporting current naval sustainment work, as well as catering for future vessels such as Hunter class frigates, Auxiliary Oiler Replenishment ships and Attack class submarines.

Additional investment would also enable the precinct to accommodate construction of up to 8 hydrographic and mine warfare support vessels, new sealift and replenishment ships, and the production of specialist military watercraft, including landing craft to meet the needs of Defence's amphibious and riverine capability requirements.

The SILUP proposes two core options to develop the southern harbour, including the establishment of at least one Defence Priority Zone, and new or enhanced ship lift capability.

The southern harbour will also benefit from the construction of multiple new berths, a new fabrication shed, two outdoor hardstand positions, transfer paths, breakwaters and a potential

new large vessel dry berth to support out-of-water maintenance and vessel construction activities.

Northern harbour development plans include activation of the Northern Common User Facility through a landbacked wharf, fabrication buildings and a connection to the southern Common User Facility via a vessel transfer path.

The infrastructure options outlined in the SILUP will enable the Collins class Full Cycle Docking (FCD) program to be delivered at the AMC, which would provide \$8.4 billion of economic benefits to Western Australia and create 3000 jobs.

The WA Government is spending over \$100 million for infrastructure and workforce development to support FCD and additional defence industry objectives.

The options outlined in this document, and explored in more detail in the SILUP, will be complemented by up to \$9 million from the Australian Government for additional planning work which will inform the next stages of infrastructure development at the AMC, ensuring it meets Defence's needs.

This planning will also help inform the WA Government's moves to secure future work outlined in the 2020 Defence Force Structure Plan, including the construction of amphibious, auxiliary and specialist watercraft, and large-hulled naval vessels.



# The Australian Marine Complex and WA's defence industry

#### **Vision**

The Australian Marine Complex (AMC) will be transformed to provide the infrastructure and facilities needed to support Western Australia's objective to be become an internationally-recognised advanced manufacturing hub – highly regarded as a world-class shipbuilding, sustainment and maintenance facility.



**HMAS Stirling** 

#### Background

Established in 2003, the AMC is Western Australia's key shipbuilding and sustainment industrial precinct, supporting defence, mining, oil and gas, and commercial marine industries. Since its establishment, the WA Government has made significant investments to deliver common user infrastructure at the AMC to support industry's needs.

The facility has delivered on its original purpose to provide previously unavailable facilities and infrastructure for the mining and oil and gas sectors, breaking down barriers for local industry in securing projects.

In meeting the increased needs of the Royal Australian Navy (RAN), including the sustainment and maintenance of Anzac class Frigates, and the introduction of mid-cycle dockings of the Collins class submarine, the WA Government has continued to invest to ensure availability of the infrastructure and facilities needed to support local industry in maintaining these ships and submarines. While the AMC facilities have served these objectives, the government is working to position the AMC to continue to deliver the needs of our stakeholders and industry, in the short, medium, and long term.

# The driver for this strategy

In 2016 the Australian Government released its most recent Defence White Paper and announced plans outlining the capability requirements and investments Defence intended to make over the decade following and beyond.

Two important commitments made by the Australian Government were the establishment of two national shipbuilding hubs – one being at the AMC. The other commitment was to

expand the capacity of HMAS Stirling to accommodate larger class vessels currently in service, and scheduled for delivery over the coming decades.

These commitments triggered the need for the AMC to adapt as a naval shipbuilding and sustainment hub, able to support a shift to a digital shipyard and an increased level of security for a more technologically advanced fleet.

While construction and development of major mining, oil and gas, and commercial marine platforms and vessels will continue, this strategy, and accompanying SILUP, cater for the shift towards increased requirements to maintain and sustain these assets.

The WA Government is taking the lead in ensuring the development of the AMC continues to evolve to meet the changing needs of these significant industry sectors.

## Investing for growth

This strategy is informed by the AMC SILUP which outlines infrastructure development options to achieve the vision of the AMC. The release of this strategy, and the accompanying SILUP, represents the fulfilment of a commitment made under the WA Defence and Defence Industries Strategic Plan, released by the WA Government in 2018.

This plan ensures the AMC has the longterm capability to meet Defence's future needs while maintaining major project delivery support for marine and resources industries. It provides development options over the near-term (0-5 years), mid-term (5-10 years) and long-term (10+ years), with each stage contributing to the WA Government's vision.

# Opportunities for industry and businesses

Western Australia's proximity to key Indian Ocean markets means the state will play an increasing role in trade and security in the Indo-Pacific region. Located only 23 kilometres south of Australia's 'Indian Ocean capital' of Perth, the AMC is situated within the Western Trade Coast, Perth's premier industrial precinct – forming a unique industrial ecosystem with interconnected supply chains, generating thousands of jobs and billions of dollars of economic activity every year.

Already home to significant defence, resources and marine fabrication and maintenance operations, planned investment in the AMC will provide expanded opportunities for major industries and local businesses. This investment builds on the current strengths of the AMC, which hosts world-leading technologies in shipbuilding and sustainment, and maritime research and development, which will play an increasingly significant role in attracting investment in the AMC's dedicated Technology Precinct. Being the hub

for minor vessels, the AMC will expand its capacity as the national centre for development and export markets of minor naval, specialist and auxiliary watercraft, as well as commercial vessels.

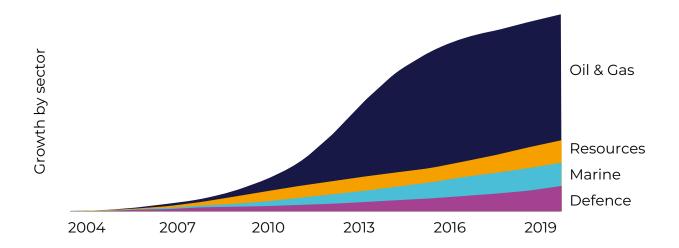
The combination of common user infrastructure, locational advantages and the clustering of related businesses and industries provides a globally competitive edge for all AMC tenants.

## **Resources and major projects**

The AMC is an industry hub for the subsea oil and gas and mining industry. In 2019, Western Australia accounted for 12% of global LNG exports and 59% of Australia's LNG exports. The value of Western Australia's LNG sales this year was \$27.4 billion, representing 16% of Western Australia's total minerals and petroleum sales of \$167.3 billion.

There are already over 30 fabrication companies located within the AMC Fabrication Precinct, which provides support and services for modular fabrication, assembly and load-out of preassembled units. The AMC will continue to play a key role in supporting major projects in the resources sector into the future.

#### AMC CUF utilisation by industry sector



#### **Marine**

Revenue in the Australian shipbuilding and repair services industry is forecast to grow 3.8% annually over the next 5 years, reaching a total of \$4.8 billion in 2024-25. These are identified in the case studies, and a reflection of WA defence industry below.

In the last 5 years the AMC has been the base for the delivery of major projects, including:

» construction of the world's largest rail mounted iron ore stackers and reclaimer for the BHP South Flank Project in the Pilbara region

- » construction of a 550t stacker, 1,700t reclaimer and three 1,200t bauxite beneficiation modules for the Rio Tinto Amrun project in Weipa, Queensland
- » fabrication and assembly of 3,500t stackers and reclaimer for the Port Kembla Coal Terminal in New South Wales
- » long-term use as the home of Chevron's service and supply base for North West operations from 2010 to 2017
- » construction by Echo Yachts of the world's largest trimaran super yacht, the 84 metre 'White Rabbit', launched in 2018
- » delivery by Austal of the 83 metre highspeed trimaran ferry 'Queen Beetle' to Japanese company JR Kyushu Jet Ferry



# Western Australia's competitive advantages

## **AMC supporting Defence**

The AMC is a critical hub for naval shipbuilding and sustainment. It is one of just two locations identified for naval shipbuilding in Australia, and plays a major role in the sustainment of the Collins class submarines, Anzac class frigates and other Royal Australian Navy vessels.

The AMC plays an essential role in the construction of naval vessels, including patrol vessels and amphibious, auxiliary, and specialist watercraft. The AMC hosts multiple defence industry prime contractors as well as over 100 small and

medium enterprises, bringing together key Defence requirements including facilities, industry, logistics and a skilled workforce, providing certainty to Defence's continuous shipbuilding plan.

From 2020 Defence will expand its permanent presence in Western Australia through the construction of facilities to support the new Arafura class Offshore Patrol Vessel (OPV) and future Hunter class frigates.

Training and operational support facilities will be built at HMAS Stirling and a new capability centre, known as



Ship Zero, will be constructed at the AMC to support the capability life cycle. The AMC has also been selected by Defence as the location of one of four regional maintenance centres (RMC) that will underpin future maritime sustainment efforts. RMC (West) will coordinate the sustainment of Western Australian homeported vessels as well as visiting Royal Australian Navy ships.

The infrastructure upgrades proposed for the AMC in this strategy will enable the facility to meet the long-term needs of Defence in both construction and sustainment, and will ensure Western Australian industry remains competitive in bidding for future work. Complementing this infrastructure development will be the continued growth of WA's defence industry, underpinned by well-established and experienced defence contractors.

The AMC SILUP identifies a number of objectives to support the defence industry:



Ensure the AMC can support shipbuilding, sustainment and maintenance of all Royal Australian Navy vessels based at Fleet Base West and the broader fleet under the Regional Maintenance Centres concept identified in Plan Galileo.



Provide a competitive environment for Defence sustainment work through the availability of common user infrastructure.



Ensure the AMC remains a secure and resilient support location for Defence.



Develop the AMC as a location that attracts and sustains a distinguished Defence and defence industry workforce.



Position the AMC to be capable of providing for the support and sustainment needs of Australia's alliance partners and their operations within the region.



# Western Australia's defence industry

The AMC is home to a number of worldclass defence industry primes, which continue to deliver major projects locally and around the country, employing thousands of skilled workers and providing millions of dollars of economic benefits for Western Australia.

A comprehensive catalogue of companies servicing the defence industry in Western Australia can be seen online at the WA Defence Industry Capability Directory.

Defence industry prime contractors located at the AMC include:

#### **ASC West**

Established in 2008, ASC West provides maintenance, upgrade and repair services for the Royal Australian Navy's 6 Collins class submarines, which are home-ported across the water from the AMC at Fleet Base West. ASC West performs Mid-Cycle Docking, utilising the Common User Facility's Floating Dock and Self Propelled Modular Transporters (SPMTs), to lift and transfer submarines to their maintenance facility.

The role of ASC West is critical in supporting the Collins Class as a regionally superior submarine capability. In 2017 ASC

invested \$12.5 million in an upgrade to their AMC facilities, improving productivity and reliability through a maintenance support tower, sky-bridge and new office areas, significantly cutting the time workers spend accessing a submarine under maintenance.

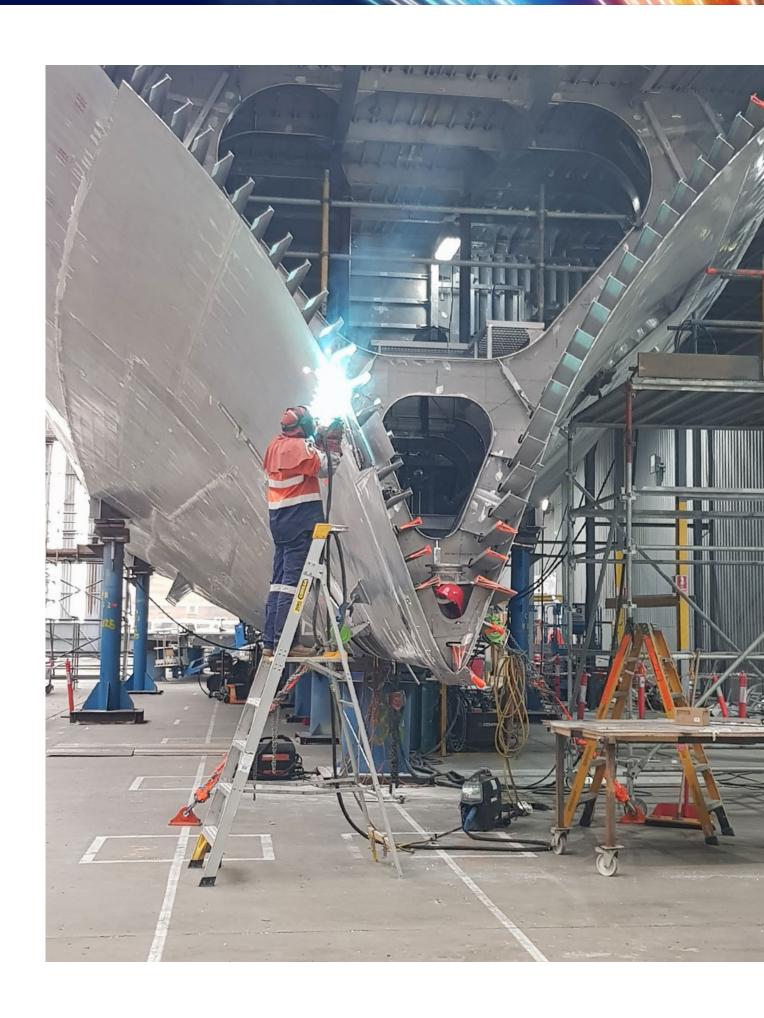
#### **Austal**

Established in 1988 in Henderson, Austal has grown to be one of Australia's largest shipbuilders, delivering over 300 vessels to 50 countries. While Austal now has shipyards in the United States, Philippines and Vietnam, its global headquarters and world-leading design capability remain at the AMC.

Austal's AMC operations deliver vessels for both Defence and commercial markets. spanning a range of vessel types and sizes in both aluminium and steel. Currently Austal is delivering two programs for Defence – the Guardian class patrol boats for Australia's Pacific island allies and East Timor, and the evolved Cape class patrol boats for the Royal Australian Navy. The AMC is also home to Austal's design team for the Independence class Littoral Combat Ship (LCS) and Spearhead class Expeditionary Fast Transport (EFT) vessels, which are built at their state-of-the-art facility in Mobile, Alabama, for the United States Navy.

## **Warship Asset Management Agreement**

Commencing in 2016, the Warship Asset Management Agreement (WAMA) represents a strategic partnership between BAE Systems Australia, Naval Ship Management (Australia), Saab Australia and the Australian Government, for the total asset management of the Royal Australian Navy's Anzac class frigates.



Working collaboratively at the AMC, the WAMA Alliance is currently undertaking the Anzac Class Midlife Capability Assurance Program (AMCAP) across all 8 frigates, upgrading systems and introducing new technologies. The program involves lifting the frigates and transferring them to a dry berth at BAE System's Henderson shipyard, following which production activities are completed in-water alongside the wharves of the Common User Facility. The WAMA demonstrates effective collaboration between industry partners and government, enabled by the infrastructure capability and capacity at the AMC.

#### **Civmec**

Civmec is a leading multi-disciplinary heavy engineering company based at the AMC, which has recently entered the naval shipbuilding sector, leveraging their experience and capability in delivering

major projects for the oil and gas and mining markets. Civmec successfully partnered with German shipbuilder Luerssen Australia for the SEA 1180 OPV program, which involves the design and construction of 12 Arafura class OPVs for the Royal Australian Navy.

To deliver this program and support naval shipbuilding and sustainment work at the AMC into the future, Civmec invested more than \$80 million in a new, technologically advanced facility which is the largest undercover shipbuilding hall in the Southern Hemisphere. Civmec's joint venture with Luerssen Australia, the Australian Maritime Shipbuilding and Export Group (AMSEG), will deliver 10 Arafura Class OPVs at the AMC in coming years and look to construct vessels for export markets.



# Workforce and industry development

Western Australia has a diverse, highlyskilled workforce, and the WA Government is dedicated to further developing its capacity to deliver the current and future shipbuilding, sustainment, fabrication and assembly needs at the AMC.

The WA Government is building a globally competitive and innovative workforce with the skills to drive the state's technological future and create new job opportunities.

This includes investment to assist South Metropolitan TAFE to grow the defence industry workforce through the development of the state-of-the-art Naval Base campus. Located just 7 kilometres south of the AMC, the Naval Base campus houses the Western Australian Defence Industry Workforce Office, the Australian Government's Naval Shipbuilding College, and also hosts Computer

Numeric Control (CNC) machining and welding simulators for training.

South Metropolitan TAFE has been working in partnership with the defence sector for more than 2 decades, delivering a range of qualifications and courses throughout Western Australia and internationally. South Metropolitan TAFE also operates a campus within the AMC Technology Precinct aligned to the training needs of the mining, oil and gas, engineering, mineral and chemical processing industries.

In September 2020, the WA Government announced more than \$18 million for a defence industry workforce package to attract people to relevant training and to incentivise businesses to take on additional apprentices in areas key to current and future defence industry needs.



# Vision for the future of the **Australian Marine Complex**

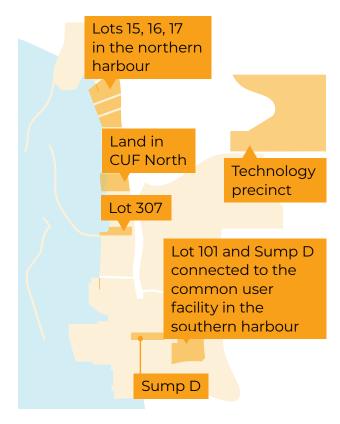
The AMC SILUP outlines the land and infrastructure upgrades required to meet the future needs of the defence, marine and resources sectors – further supporting economic growth and job creation in Western Australia.

#### Objectives for the AMC:

- » Be the principal location for all maintenance and sustainment of Australia's submarines and frigates.
- » Be able to support the construction of new naval vessels.
- » Enable national and international expansion of Western Australia's defence, marine and resources industry capabilities.
- » Facilitate and enhance economic development.
- » Provide common user infrastructure and land to meet the needs of the defence, marine, resources and associated industries.
- » Enable the co-location of businesses across the marine, defence and resources industry supply chains.
- » Enable research and development activities that promote cross sector collaboration and innovation.

## **Development opportunities**

Key vacant sites have been identified for future development opportunities.



Key precinct-wide improvements focus on traffic flow, transit options, safety and amenity for the AMC workforce.



Multi-storey car parks



Improved intersections



Options for upgraded public transport services



Improved pedestrian environment



## **Development of the** northern harbour

The northern harbour will continue to support the construction of naval vessels, commercial shipbuilding and maintenance activities.

The northern Common User Facility will be activated through:

- » a land-backed wharf
- » a new vessel transfer system
- » fabrication buildings
- » connection to the southern Common User Facility via a vessel transfer path
- » extension of Clarence Beach Road and utilities north to development sites at Lots 15, 16 and 17.

#### Outlook

- » Forward planning is underway to meet new industry demand for waterfront land in the northern harbour.
- » Lots 15, 16, and 17 provide a 14ha development opportunity for strategic projects, including activities related to commercial shipbuilding and maintenance or major projects that require direct access to the waterfront.
- » Development will integrate with the future expansion of the adjacent Woodman Point Recreational Boat Precinct.





## **Development of the** southern harbour

The AMC SILUP provides two concepts for the Southern Harbour that meet defence sector requirements and ensure continued support for major projects.

Proposed new infrastructure under both concepts:



Multiple new berths to accommodate future Defence vessel requirements.



A new fabrication shed and two outdoor hardstand positions to accommodate vessel sustainment and disposal activities.



New transfer paths to the northern and southern harbour.



New breakwaters to shelter berths in the southern portion of the harbour.



Upgraded ship lift and transfer capacity.



A new large vessel dry berth to support out-of-water maintenance and vessel construction activities.

## Concept 1

#### Key infrastructure

- » Consolidation of Defence activities and creation of a single Defence Priority Zone in the central portion of the harbour.
- » Upgraded ship lift and transfer capability.

#### Legend

- 1. Vessel transfer path
- 2. Defence offices
- 3. Facility management offices
- 4. Upgraded floating dock
- 5. New SPMT garage
- 6. Covered work area
- 7. 2 X vessel hardstands
- 8. Large vessel dry berth
- 9. Sump D/laydown
- 10. New breakwaters
- 11. Breakwater maintenance
- 12. Wharf infill

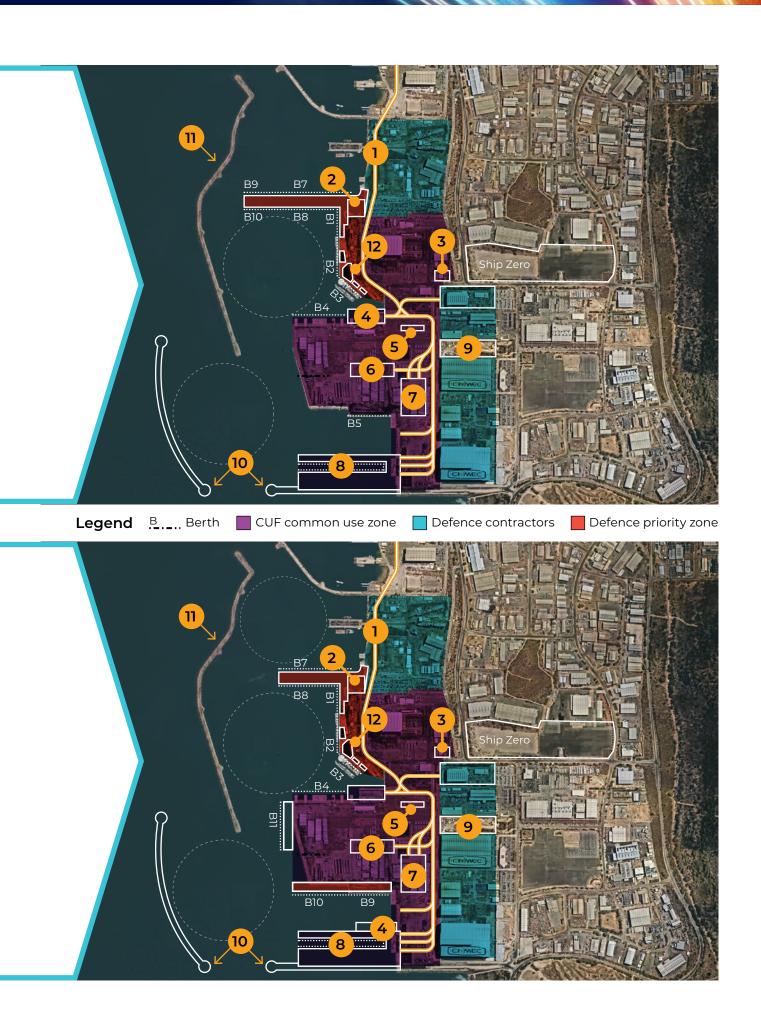
## **Concept 2**

#### Key infrastructure

- » Creation of 2 Defence Priority Zones aligned with the location of berth infrastructure.
- » New ship lift and transfer capability in the southern portion of the harbour.

#### Legend

- 1. Vessel transfer path
- 2. Defence offices
- 3. Facility management offices
- 4. New shiplift facility
- 5. New SPMT garage
- 6. Covered work area
- 7. 2 X vessel hardstands
- 8. Large vessel dry berth
- 9. Sump D/laydown
- 10. New breakwaters
- 11. Breakwater maintenance
- 12. Wharf infill



# **Current initiatives**

In July 2020, the Western Australian Government launched the WA Recovery Plan with the intent to restore business and consumer confidence, create jobs and rebuild the economy in response to the COVID-19 pandemic.

The plan is set around 21 priority streams designed to create Western Australian jobs now and into the future. This includes a focus on driving industry development, boosting local manufacturing, building infrastructure and unlocking barriers to investment.

The AMC will directly benefit from the WA Government's commitment to accelerate infrastructure delivery – expanding defence industry capability and attracting more marine repair, maintenance and construction activity.

As part of the WA Recovery Plan, the government announced \$87.6 million to deliver 4 infrastructure projects at the AMC. This announcement was informed by the findings of the AMC SILUP and is consistent with the first stage of priority infrastructure requirements identified for the northern and southern harbours, as well as support for the expansion of the AMC's defence and marine industry capability.



#### Northern harbour infrastructure

Delivery of a new shipbuilding facility in the northern harbour to activate underutilised waterfront land and support commercial shipbuilding and sustainment. The development of the facility will support the requirement to expand ASC facilities at the AMC.





#### Southern harbour infrastructure

Delivery of two southern harbour infrastructure upgrade projects:

- » A new vessel transfer path to create greater connectivity and resilience between the floating dock and the shipbuilding and sustainment facilities.
- » Design and construction of an extension to AMC berth 1 and the design of a new finger wharf to create berths 7 and 8, which will

provide the ability to develop a secure wharf to support in-water maintenance of Collins class submarines, as well as other naval vessels. The extension of berth 1 will provide capacity to support Hunter class frigates alongside, in addition to providing the ability to accommodate the commissioning of the Arafura class OPV, and the planned hydrographic, mine countermeasure, and other specialist vessels.



#### **Precinct wide infrastructure**

Upgrade of 3 road intersections to increase road capacity and safety, reduce vehicle congestion and improve access:

- » Cockburn Road/Quill Way (north)
- » Cockburn Road/Quill Way (south)
- » Cockburn Road/ Russell Road



# **Technology Precinct and** long-term opportunities

The AMC features the dedicated 24ha Technology Precinct to support research and development activities critical to the defence, resources and marine sectors.

The precinct, together with the imminent development of 100ha of land in the Orion Industrial Park at the adjacent Latitude 32 Industry Zone, will enable the co-location of industrial, commercial and research institutions to leverage and support the core activities at the AMC.

Expansion of the Technology Precinct will lead to significant new opportunities for research and innovation, facilitating the translation of research into new products created by local industries. Key potential future industries of focus include:

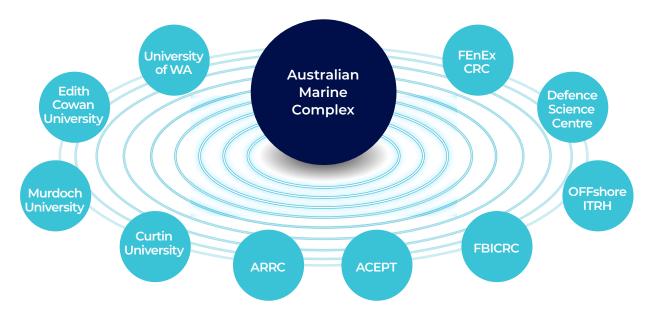
- » maritime autonomous systems
- » systems integration
- » critical minerals
- » renewable energy.

## **Technology Precinct land** development opportunities

The WA Government is planning for the continued development of the AMC Technology Precinct as a leading hub for marine, defence and resources technology and innovation.

Developable land for technological innovation is currently available in the AMC and the surrounding industrial and trade precinct, and the government invites industry participation in the development and growth of this precinct.

The WA Government is exploring land development opportunities at the Technology Precinct to facilitate defence science, technology and innovation priorities within Western Australia. This includes investigating the opportunity for the AMC to host a research centre focused on maritime and advanced technologies for the benefit of Defence. This centre would leverage Western Australia's extensive capabilities, including those from the resources sector. The AMC will be able to contribute to Defence priorities including surface and underwater warfare, remote and autonomous systems and mine countermeasure technologies.



# Defence opportunities and next steps

The WA Government is actively pursuing new Defence programs for amphibious, auxiliary, and specialist watercraft outlined in the Australian Government's 2020 Defence Force Structure Plan. This includes the construction of largehulled naval vessels.

The volume of naval shipbuilding will increase at the AMC. While the precinct is already the principal location for sustainment of the Royal Australian Navy's Anzac class frigates, the WA Government will continue working with key stakeholders to meet the requirements in supporting the future Hunter class frigates, in addition to the maintenance of a larger range of naval and commercial vessels.

the AMC, in the national interest. Further development at the AMC will also enable Western Australia to support the Attack class submarine in the future.

## **AMC infrastructure** planning studies

Informed by the AMC SILUP, the WA Government is working collaboratively with Defence to undertake a number of planning studies, funded by the Australian Government, to refine the concepts presented in the AMC SILUP and inform the short, medium and long-term development of the AMC.



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