



MASTER BUILDERS
NORTHERN TERRITORY

BILLION DOLLAR PARTNERSHIP

ECONOMIC IMPACTS ON DEFENCE
INFRASTRUCTURE IN THE NORTHERN TERRITORY

2023

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Report Overview and Summary



Report Overview

Engagement context

Master Builders NT has represented the building and construction industry in the Northern Territory since 1950. While Master Builders NT is part of the overarching MBA Federation, unlike sister organisations across Australia is predominantly an engineering/commercial contracting representative organisation. Members of Master Builders NT include prime contractors and subcontractors that are regularly engaged to undertake projects for the Department of Defence in the Northern Territory Defence projects in the NT.

Master Builders NT has previously commissioned analysis to understand the impacts and opportunities from the Defence Infrastructure Program in the Northern Territory. A study was first commissioned in 2015, and updated again in 2016 based on changes in the level of expenditure anticipated from Defence following the release of the 2016 Defence White Paper.

Since the completion of the 2016 report, the defence landscape in the Northern Territory has again shifted in response to evolving geo-political tensions in the Indo-Pacific region.

There are a large number of defence sites spread across the Northern Territory, including RAAF Base Darwin, Larrakeyah Barracks and HMAS Coonawarra in Darwin, Robertson Barracks in Palmerston, RAAF Base Tindal near Katherine and the Joint Defence Facility Pine Gap near Alice Springs. The Northern Territory also hosts four of Australia's significant land based training areas, as well as the North Australia Exercise Area offshore from Darwin.

The Northern Territory is expected to play a critical role for Australia's defence allies in the future. The United States Force Posture Initiatives extend Australia's existing defence alliance with the United States to deepen interoperability, enhance capabilities and improve joint response to humanitarian assistance. The initiatives provide the Northern Territory with new infrastructure investments and support service requirements.

With this in mind, the Northern Territory has developed a vision to become a key defence and national security hub, and the primary centre for maintaining and sustaining defence facilities and assets deployed to the region. As a result, the Northern Territory has invested in critical transport and maintenance infrastructure to support defence activity in recent years, including the \$400 million Darwin Ship Lift Facility within the Marine Industry Park.

The purpose of the engagement is to assess the capability and capacity of the NT construction industry to undertake work on major capital projects associated with the Defence Infrastructure Program. The engagement provides a perspective on the policy measures which need to be in place to ensure the NT construction industry can meet the projected investment pipeline from the defence industry. By providing insights into the planning and investment activities of the defence industry and the capacity and capability of the NT construction industry, advance notice reports

such as this one provide important content for the NT Government in helping to leverage the peaks to secure maximum economic growth.

As outlined in the Northern Territory Defence and National Security Strategy, by aligning infrastructure spending, governments can make considerable savings and maintain local industry, employment and productivity.

The focus of this study is on capacity and capability of the NT construction industry to meet the projected demands from the Department of Defence in relation to the construction of major defence infrastructure projects in the Northern Territory. It does not explore the capacity and capability of local industry to support the ongoing maintenance expenditure from the Department of Defence’s new and existing defence infrastructure facilities.

Study approach

In order to assess the capacity and capability of the NT construction industry to meet the projected demands from the Department of Defence associated with its future investment program in the Northern Territory, the Master Builders NT engaged economic consultants, ACIL Allen, to lead the development of the study. A group of Master Builders NT members provided financial support to the commissioning of the study.

This study has been supported through the data and information supplied by the **Department of Defence**, the **Northern Territory Government**, and the **Industry Capability Network NT**.

ACIL Allen also gained additional insights from industry on its capacity and capability to meet the future program of defence infrastructure through a program of stakeholder consultation. These insights were used to test and reinforce the results from the economic modelling that ACIL Allen undertook to quantify the economic impact of the program of defence projects on the Northern Territory economy more broadly, and the Northern Territory construction industry’s capacity and capability to deliver on this program. The economic modelling was undertaken using ACIL Allen’s in-house Input-Output Model.

Table 1.1 summarises the support in the form of information and data provided by the project partners for this study.

Table 1.1 Project Partners

Company	Description
	<p>Department of Defence</p> <p>In March 2023, the Department of Defence provided a list of approved and unapproved ADF infrastructure projects located in the Northern Territory for the period of 2022-23 to 2026-27. The Department of Defence provided a brief description of each of the approved ADF infrastructure projects, as well as information on the proposed scope and key dates for unapproved ADF infrastructure projects. The information provided by the Department of Defence also indicated where a ADF infrastructure project in the Northern Territory was a part of a larger national defence infrastructure project.</p>
	<p>Northern Territory Government – Investment Territory</p> <p>In June 2023, Investment Territory provided to ACIL Allen a list of priority and committed private sector major projects located across the Northern Territory. ACIL Allen used this data to determine the assumptions for the estimated non-defence private sector major project expenditure for the Northern Territory over the modelling period. The seven industry categories and the percentage allocation of non-defence private sector major project expenditure was based on analysis of the Investment Territory database.</p>

Company

Description

**Industry Capability Network NT**

The Industry Capability Network NT (ICN NT) provided to ACIL Allen a comprehensive submission of work package data and tender documentation for a selection of completed and under construction major defence infrastructure projects located across the Northern Territory. ACIL Allen was able to use the data and information submission from ICN NT to estimate a work package expenditure percentage breakdown for vertical and horizontal expenditure.

Report structure

This report has been structured into three Parts, commencing with **Part I** which provides the reader with an overview of the purpose of this study, along with a detailed summary of the key insights and findings that are presented throughout the report.

Part II provides a **Current State Assessment of Northern Territory** in the context of the performance of the economy and the role of the defence industry in supporting activity in the Territory. This is achieved through the analysis presented in the following sections:

- **Section 1: Economic Context** – This section provides a profile of the Northern Territory economy, and the population and workforce trends that drive and support economic activity. This section provides the contextual overlay to understanding the economic impact of future investments in defence infrastructure in the Northern Territory, and the capacity and capability of industry to support the development of these projects.
- **Section 2: Defence Industry Context** – This section provides an overview of the defence industry in the Northern Territory, the strategic intent behind the Commonwealth Government's investment in defence facilities, and its future investment plans for the Northern Territory.
- **Section 3: Construction Industry Context** – This section provides a more detailed examination of the Northern Territory construction industry, taking into consideration broader trends in construction activity, and feedback from industry on the current state of the construction industry.

Part III of this report discusses the **Impact of Future Defence Projects on the Northern Territory Economy and Industry**, through the following sections:

- **Section 4: Modelling Methodology and Assumptions** – This section outlines the modelling methodology and assumptions adopted by ACIL Allen to assess the capacity of the NT construction industry to undertake work on major capital projects associated with the Defence Infrastructure Program.
- **Section 5: Economic Impacts of Defence Infrastructure** – This section presents the economic modelling results on the impact of the Defence Infrastructure Program on the NT economy, and the capacity of the NT construction industry to meet the future demand from Defence for its services.
- **Section 6: Industry Perspectives and Policy Considerations** – This section provides a summary of the issues and perspectives of the Northern Territory construction industry on its capacity and capability to undertake the large program of defence infrastructure work over the next five years and beyond.
- **Section 7: Report Findings** – This section provides an overall assessment of the study and its key findings.

Glossary of terms and abbreviations

Throughout this report, ACIL Allen has used a number of economic and industry-specific terms which have been outlined below.

Table ES 1 Glossary of Terms

Term Used	Description
Capital expenditure	This refers to all expenditures related to the development of capital assets such as buildings and infrastructure.
Full-Time Equivalent	ACIL Allen uses a definition for a Full-Time Equivalent job consistent with that used by the ABS – namely people who work, or usually work, 35 or more hours per week for the full year. FTE figures used in this report reflect a full-time job over one full year.
Gross product or real economic output	Gross product is a measure of the output generated by an economy over a period of time (typically a year). It represents the total dollar value of all finalised goods and services produced over a specific time period and is considered as a measure of the size of the economy. At a national level, it is referred to as Gross Domestic Product (GDP); at the state level, Gross State Product (GSP); while at a regional level, Gross Regional Product (GRP).
Gross value added	Gross Value Added (GVA) is the output of an industry or sector minus intermediate consumption. GVA therefore represents the value of all goods and services produced, minus the cost of all inputs and raw materials used to produce that good or service. Unlike Gross Product, GVA does not include the value of taxes minus subsidies.
Input-Output Tables	Input-Output (IO) tables capture the direct and indirect effects of expenditure by capturing, for each industry, the industries it purchases inputs from and also the industries it sells its outputs to.
State final demand	The aggregate obtained by summing government final consumption expenditure, household final consumption expenditure, private gross fixed capital formation and the gross fixed capital formation of public corporations and general government.

Table ES 2 List of Acronyms

Abbreviation	Full Name
ABS	Australian Bureau of Statistics
ADF	Australian Defence Force
ASD	Australian Signals Directorate
AUKUS	Australia United Kingdom United States
CAPEX	Capital expenditure
FTE	Full Time Equivalent
GSP	Gross State Product
GVA	Gross Value Added
IO	Input-Output
OPEX	Operational expenditure
OPV	Offshore Patrol Vessel
Quad	Quadrilateral Security Dialogue
RAAF	Royal Australian Air Force

Abbreviation	Full Name
RAN	Royal Australian Navy
RMC-N	Regional Maintenance Centre North
USFPI	United States Force Posture Initiatives

Executive Summary

Study approach

ACIL Allen was engaged by Master Builders NT to undertake an independent assessment of the economic impact of the projected defence infrastructure projects will have on the Northern Territory economy, and the capacity and capability of the local construction industry to meet this demand. In undertaking this study, ACIL Allen also consulted with industry to gather perspectives on this opportunity, and sought feedback on the policy measures which need to be in place to ensure the NT construction industry can meet the projected investment pipeline from the defence industry.

In determining the impact of defence infrastructure projects on the Northern Territory economy and the construction industry, ACIL Allen deployed its bespoke economic modelling tools to undertake an economic impact assessment of the defence infrastructure project expenditure in isolation, but also in the context of the projected expenditure associated with the Northern Territory Government's infrastructure program and private sector non-defence major projects.

ACIL Allen's industry-leading Input-Output modelling toolkit provides a comprehensive and contemporary estimate of the relationship between economic activity and labour market outcomes. The outcomes of the modelling are to present an unconstrained view of the economic impact and implications for the Northern Territory's demand for labour.

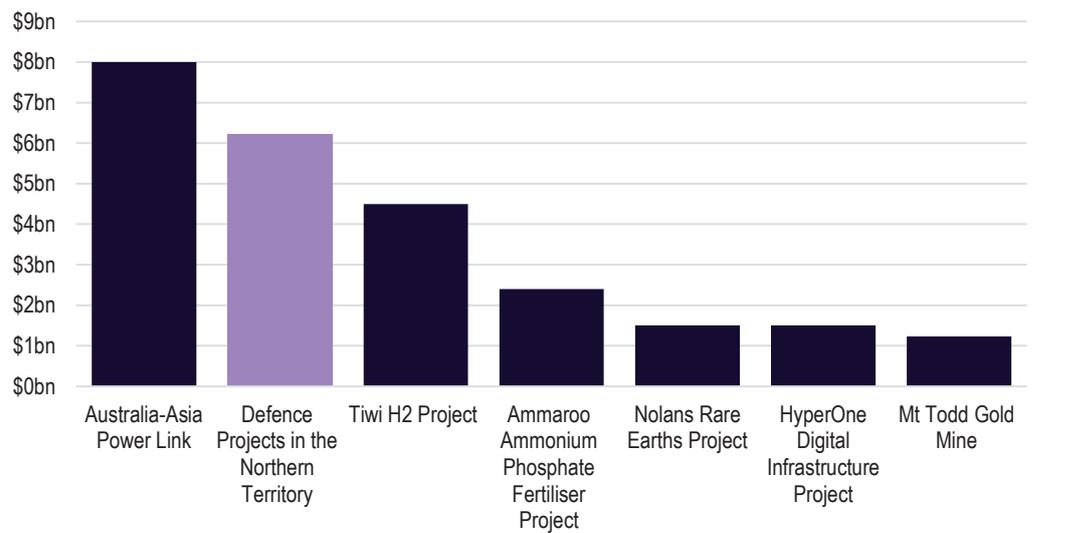
Encapsulated within the second part of ACIL Allen's analysis is a summary of the issues and perspectives of the Northern Territory construction industry on its capacity and capability to undertake the projected defence infrastructure work over the next five years and beyond. Stemming from this are a range of recommended policy actions to address the issues that stakeholders identified as being a constraint on the capacity and capability of the Northern Territory construction industry.

The study has been supported by data and information supplied by the Department of Defence, Northern Territory Government and the Industry Capability Network NT. ACIL Allen also gained additional insights from industry, through stakeholder consultation, on its capacity and capability to meet the projected investment pipeline from defence infrastructure projects.

Key Insights

ACIL Allen estimates that the projected expenditure associated with **defence infrastructure projects in the Northern Territory over the five years to 2025-26 to be the most significant investment in the Northern Territory over this period**, assuming the proposed Australia-Asia Power Link project does not progress to a final investment decision over this period. The collective investment across a range of defence infrastructure projects is conservatively estimated to be in excess of \$6 billion, which is presented in **Figure ES 1** against other proposed major investment projects in the Northern Territory.

Figure ES 1 Comparison of Defence Infrastructure Expenditure to Major Projects in the Northern Territory



Source: ACIL Allen based on estimated capital expenditure data sourced from ICN NT Project Summary List (May 2023)

Note: Projected expenditure on defence projects in the Northern Territory is for the period from 2022-23 to 2026-27 and accounts for total expenditure on defence projects in the investment pipeline, prior to allocation of this expenditure by source of supply.

Note: Estimated expenditure for private sector projects is for the complete project, aside from the Australia-Asia Power Link for which NT construction expenditure has been estimated at approx. \$8 billion (NT Budget 2022-23 – Northern Territory Economy p.16).

The conceptualisation of the projected defence infrastructure expenditure over the modelling period as its own major project provides a useful reference point for the scale of this expenditure in the context of the Northern Territory economy.

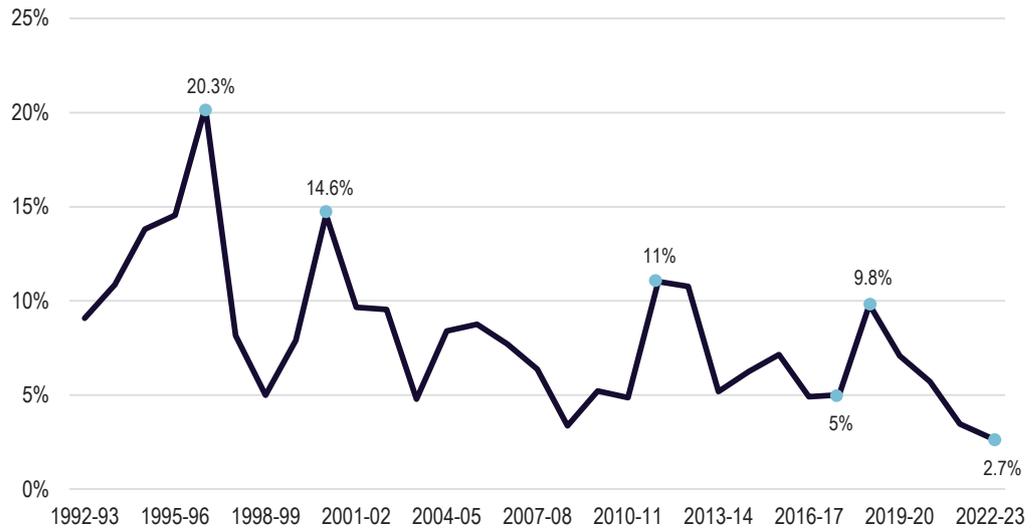
Historically, the construction industry has served the Northern Territory well in building the infrastructure to support economic growth and development. To serve this purpose, the construction industry has relied on a well-targeted migration program to address its workforce needs, supplemented by the sourcing of skilled labour from interstate.

Overseas migrants have made a critical contribution to the construction industry workforce, in particular its ability to scale up during peak investment cycles. The labour-intensive construction phase of the Ichthys LNG Project demonstrated the capacity and capability of the local construction industry to be able to support the development of a large, complex and transformational project, with the additional labour capacity support provided by overseas migrants.

Indicators suggest that construction activity in the Northern Territory is currently increasing. In 2021-22, the Northern Territory recorded total construction activity of \$3.01 billion, bringing total construction activity back above the level recorded in 2018-19. While the industry continues to invest in training apprentices and trainees, there will be a need to supplement the local construction industry workforce with workers from outside the Territory as activity increases.

The Northern Territory’s **construction industry is currently experiencing the tightest labour market conditions on record, with ACIL Allen estimating a construction industry unemployment rate of just 2.7 per cent in 2022-23** (see **Figure ES 2** below). Tight labour market conditions are a reflection of both rising demand for construction workers, and constrained supply stemming from lower levels of skilled migrants since the end of the COVID-19 pandemic.

Figure ES 2 Northern Territory Construction Industry Unemployment Rate

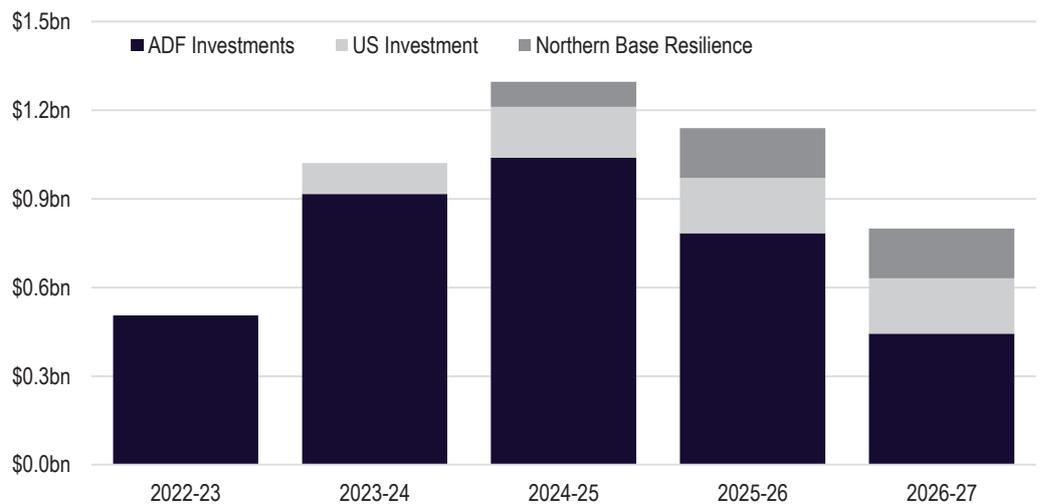


Source: ACIL Allen, from Australian Bureau of Statistics Quarterly Labour Market Statistics (EQ06)

In order to model the economic impact of the projected pipeline of defence infrastructure projects, ACIL Allen developed a profile of the projected expenditure associated with them over a five-year modelling period, as well as the projected expenditure associated with Northern Territory Government infrastructure projects and private sector major projects. ACIL Allen’s economic impact modelling enabled an assessment of the construction activity and labour demand projections stemming from the investment pipeline against the current and historic capacity and capability of the Northern Territory construction industry.

For the purposes of this engagement, ACIL Allen estimated that there would be **\$6.23 billion in expenditure on defence infrastructure projects in the Northern Territory over the period from 2022-23 to 2026-27**, across the portfolio of Australian Defence Force investments, the estimated expenditure on United States defence projects in the Northern Territory, and the ongoing Northern Base Resilience program of infrastructure spending.

Figure ES 3 Total NT expenditure on Defence projects in the Northern Territory

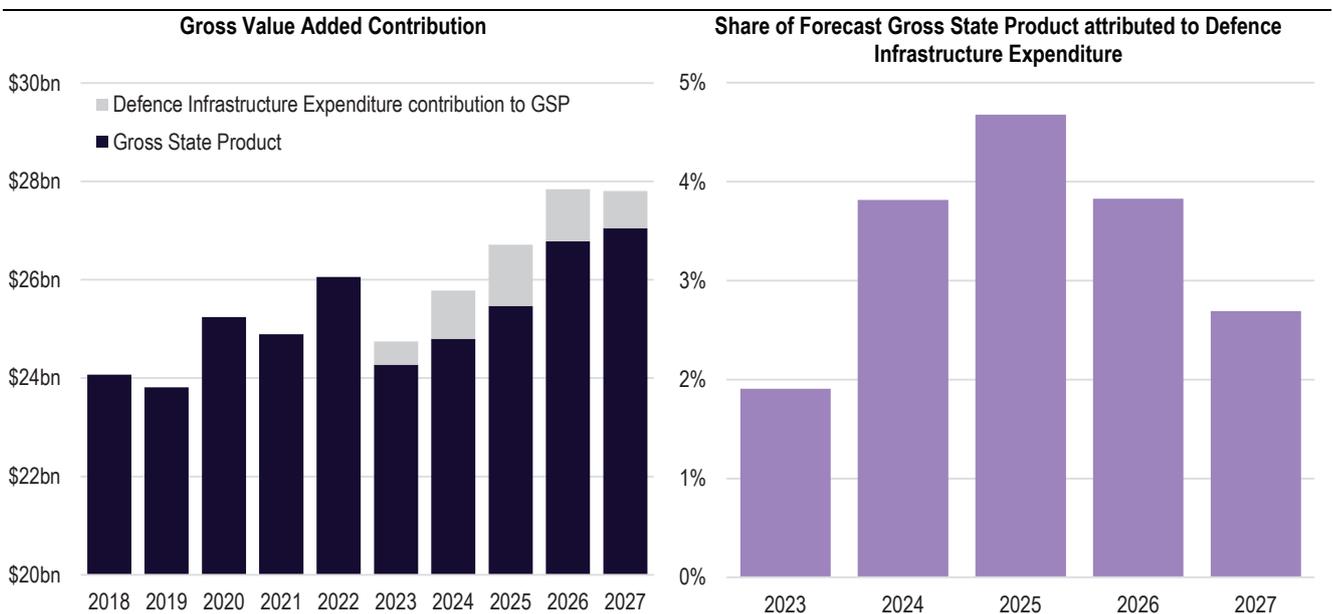


Source: ACIL Allen

Of this amount, it was estimated that **more than three-quarters of this expenditure would be sourced from the Northern Territory over the five-year modelling period, amounting to \$4.76 billion**, equating to an average of approximately \$952 million per annum. Based on the profile of this expenditure, ACIL Allen estimates that activity will peak in 2024-25 at \$1.3 billion (Figure ES 3).

Based on the total Northern Territory expenditure on defence infrastructure projects, ACIL Allen estimates that the projected defence infrastructure investment in the Northern Territory will provide a **cumulative \$4.5 billion stimulus to the local economy over the five year modelling period**. At peak investment in 2024-25, defence infrastructure expenditure will generate \$1.25 billion, which would account for approximately **4.7 per cent of Gross State Product** in that year (Figure ES 4). ACIL Allen estimates that with the addition of the contribution from defence infrastructure expenditure, Gross State Product will reach \$27.8 billion in 2026-27, exceeding the forecast of \$27.2 billion contained in the NT Budget 2023-24.

Figure ES 4 Defence Infrastructure Expenditure Contribution to Gross State Product (Financial Year)



Source: ACIL Allen, NT Budget – NT Economy (p.18)

Note: ACIL Allen has not received data in relation to the forecast NT-sourced expenditure associated with defence infrastructure projects accounted for in the GSP forward estimates by the NT Department of Treasury and Finance. In order to minimise the potential for double counting through the addition of the defence infrastructure expenditure contribution to GSP, ACIL Allen removed estimated NT-sourced expenditure associated with the following four defence infrastructure projects from the GSP forward estimates: RAAF Base Tindal Redevelopment Stage 6 and United States Force Posture Initiative Airfield Works and Associated Infrastructure, Navy Capability Infrastructure Sub-program Offshore Patrol Vessel (OPV) Facilities (SEA 1180 Phase 1), USFPI Northern Territory Training Areas and Ranges Upgrades, and Larrakeyah Defence Precinct Redevelopment Program.

At peak investment, ACIL Allen estimates that \$587 million of this economic impact would be directly attributable to the investment expenditure, with the remaining \$662 million in indirect benefits that are expected to flow through to Northern Territory economy.

The large indirect benefits realised from the defence infrastructure investments over the five year modelling period **reflects the labour intensive nature of construction activity, which generates additional economic impacts as a result of the local spending by construction workers**.

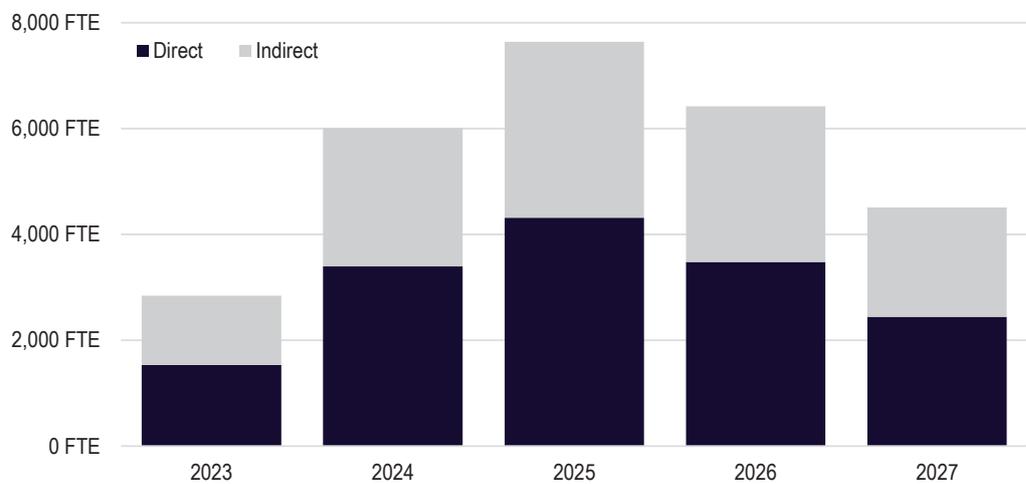
It is estimated that for every \$1 of direct economic impacts realised from defence infrastructure investments, there is a further \$1.17 in indirect economic impacts. This implies an **economic multiplier of 2.17**.

From an employment perspective, ACIL Allen estimates that the incremental impact of defence infrastructure expenditure in the Northern Territory will generate 7,640 FTE jobs at peak construction in 2024-25, of which 4,316 FTE jobs are expected to be directly employed as a result of these investments. ACIL Allen estimates that a further 3,324 FTE jobs will be created or supported by these investments, by virtue of the additional spending that will result throughout the economy (see **Figure ES 5**).

To put this level of job creation into perspective, **the peak incremental employment impact of 7,640 FTE jobs represents 7.4 per cent of the full time workforce** in the Northern Territory in 2021-22, and is 1.84 times the total number of full time jobs created in that year.

It is estimated that that **for every FTE job directly created in the Northern Territory as a result of defence infrastructure expenditure, there are a further 0.8 FTE jobs created or supported across the economy**. This implies an employment multiplier of 1.8.

Figure ES 5 Economic Impact of Defence Infrastructure Expenditure – Employment



Source: ACIL Allen

To better understand the demands that would be placed on the construction industry from the proposed program of defence infrastructure projects, ACIL Allen also modelled the impacts of the broader pipeline of infrastructure work, which also includes Northern Territory Government infrastructure investment and private sector major project expenditure.

The cumulative increase to Gross Value Added (direct and indirect) over the projection period is estimated to be \$11.36 billion. Of the total cumulative increase to Gross Value Added, the largest share, of approximately 39.8 per cent, is accounted for by defence infrastructure expenditure. NT Government infrastructure expenditure in the general government sector is projected to account for 32.2 per cent of the cumulative increase to Gross Value Added from the overall investment pipeline, while private sector non-defence major project expenditure accounts for a share of 28 per cent.

The economic impact of the overall investment pipeline to the Northern Territory is projected to peak in 2024-25 at \$2.72 billion, of which \$1.25 billion (45.9 per cent) is projected to be stimulated by defence infrastructure expenditure.

Summary Findings

The two overall findings that emerged from this study are presented below.

Overall Finding 1: The NT construction industry has a track record of delivery

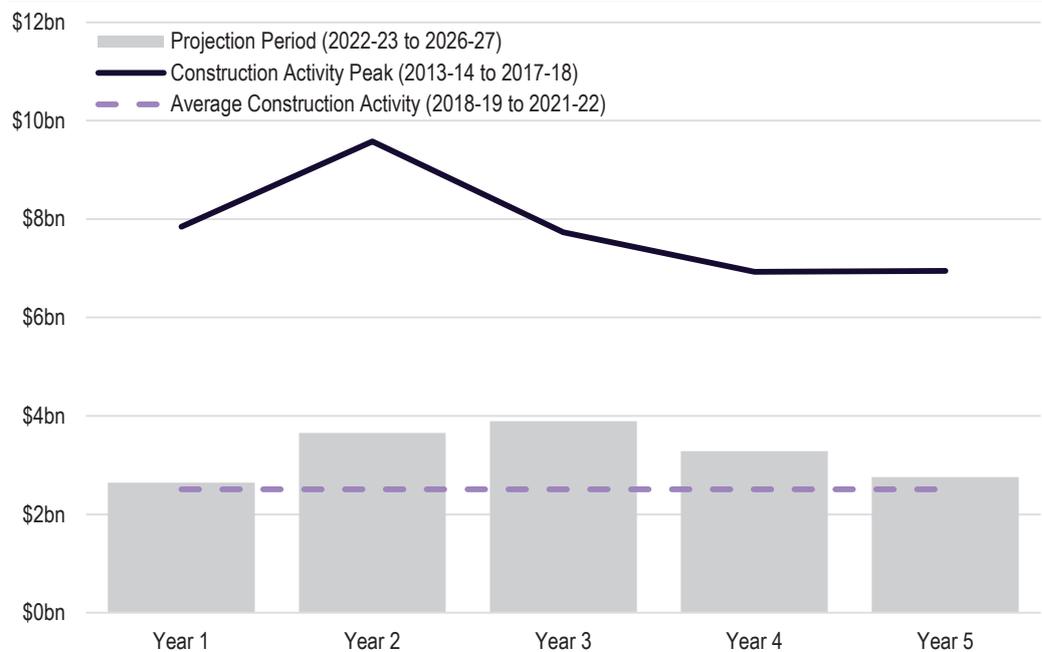
The research and insights presented in this report provides **clear evidence that the Northern Territory construction industry has a track record of delivering on industry needs**. In particular, the construction industry has shown the capacity and capability to be able to adjust to the needs of the broader economy during peak investment cycles. This has been **achieved in large part by the ability of the industry to source skilled construction workers from other parts of Australia, and overseas**.

The economic modelling undertaken by ACIL Allen on the projected expenditure associated with defence infrastructure projects has facilitated a comparison of this (and other major infrastructure expenditure) to the most recent peak in construction activity, as well as more recent construction activity trends leading into the projection period.

This analysis found that while the **level of projected level of stimulus over the five-year modelling period will be a challenge for the Northern Territory construction industry, history shows that it has been able to meet these demands**.

At the projected peak in the defence-led investment cycle in 2024-25, there will be \$3.89 billion in construction activity in the Northern Territory. While the cumulative construction activity peak is 55 per cent higher than the average annual construction activity recorded in the Northern Territory over the period between 2018-19 and 2021-22, it is still some **60 per cent below the Ichthys LNG Project-led peak of \$9.58 billion in building and engineering construction activity recorded in 2014-15**. This is reflected in **Figure ES 6** below.

Figure ES 6 Managing the Peak – Construction Activity over the Projection Period compared to historical levels of construction activity in the Northern Territory



Source: ABS Cat. 8752.0, Building Activity (Original), ABS Cat. 8762.0, Engineering Construction Activity (Original, ACIL Allen)

Balanced against the historical capacity of the Northern Territory construction industry to meet levels of construction activity significantly in excess of the level of expenditure projected over the modelling period, is the need for **urgent policy action to address constraints on industry**.

Overall Finding 2: Policy action is needed to address constraints on industry

The capacity of the local construction industry to be able to deliver on higher levels of construction activity does not, however, remove or minimise the importance of immediate action to address the capacity constraints impacting on industry today.

Policy directions identified by ACIL Allen include **more effective market signalling activities by the Department of Defence and the Northern Territory Government, the release of defence projects to market in a ‘program’ format rather than on an individual basis, delivery of a workforce development strategy, and addressing accommodation shortages in the Northern Territory.** These key policy directions are highlighted in **Figure ES 7** and discussed further below.

Figure ES 7 Policy Directions

<p>Planning for Growth</p>	<ul style="list-style-type: none"> 1 Market signalling Effective planning of projects provides a sensible and tangible means by which the demands placed on local industry can be managed. 2 Release of defence infrastructure projects to market in a ‘program’ format Releasing individual, discrete projects to the market, as opposed to a ‘program’ approach, is a model that can often work in a large market where the client is a small demander, however it is less effective in a market such as the Northern Territory where Defence is a client that is a large demander in a smaller market. 3 Improved coordination between Defence and Northern Territory Government Assists local construction industry to prepare for future works, but also reduces the risks of crowding out each other, as both levels of government try to compete for the services of the local construction industry.
<p>Building Industry Capacity and Capability</p>	<ul style="list-style-type: none"> 4 Workforce development strategy for construction industry Provide the framework from which policy settings can be calibrated to enable industry to build its workforce capacity and capability to capture the future pipeline of defence infrastructure projects. 5 Addressing barriers to temporary and permanent migration Skills recognition of overseas migrants and the complexity of the migration system for both prospective migrants and businesses are some of the barriers to achieving an uplift in the level of overseas migration. 6 Northern Territory Population Strategy Industry stakeholders have a strong preference to recruit locally, however the Northern Territory faces the challenge of building its permanent population due to a range of economic and social factors. 7 Addressing accommodation shortages Currently, the number of workers that could be recruited on a temporary or permanent basis from overseas or interstate is limited by a significant shortage of accommodation options in the Northern Territory, particularly in Katherine.

Source: ACIL Allen

With a large program of works required to be delivered over the coming years, industry stakeholders see an important role in Defence and the Northern Territory Government more effectively undertaking **market signalling activities to provide industry with the knowledge that it needs to make informed resourcing decisions.** Such planning should also consider ways in which both levels of **government can coordinate their respective programs** of work to maximise

local industry participation, and address the risks of crowding out. Complementing market signalling are the benefits associated with **releasing multiple defence projects to market in a 'program' format**, as opposed to the release of individual, discrete projects.

Enhanced market signalling activities should be supported by a strategy to ensure the current and future workforce needs of the construction industry can be met. A **workforce development strategy** for the Northern Territory construction industry will provide the framework from which policy settings can be calibrated to enable industry to build its workforce capacity and capability to capture the future pipeline of infrastructure projects.

Specifically, the strategy will need to address the **barriers to temporary and permanent migration**, which is critical to addressing the long-term labour needs of high growth, low population regions, such as the Northern Territory. Without access to a supply of skilled and semi-skilled workers from overseas, this will put at risk the timely delivery of the large program of defence infrastructure projects in the Territory.

While the Northern Territory has unique lifestyle factors that make it an attractive place to visit and live, and there is a strong pipeline of economic opportunities (including in relation to future defence infrastructure commitments) that will provide job opportunities for thousands of people, the Territory still faces the **challenges of building its permanent population** due to a range of economic and social factors. Failure to address these issues will mean that industry will need to rely on overseas migration, the recruitment of workers from outside of the Territory on a temporary basis, and FIFO arrangements.

However, measures to boost the local population in the Territory must look at **addressing accommodation shortages**, which have been universally cited by all stakeholders as a priority focus area for the Government to assist industry in being able to build a local workforce to be able to deliver on the large pipeline of infrastructure projects in the Territory.

Northern Territory Current State Assessment



Economic Context 1

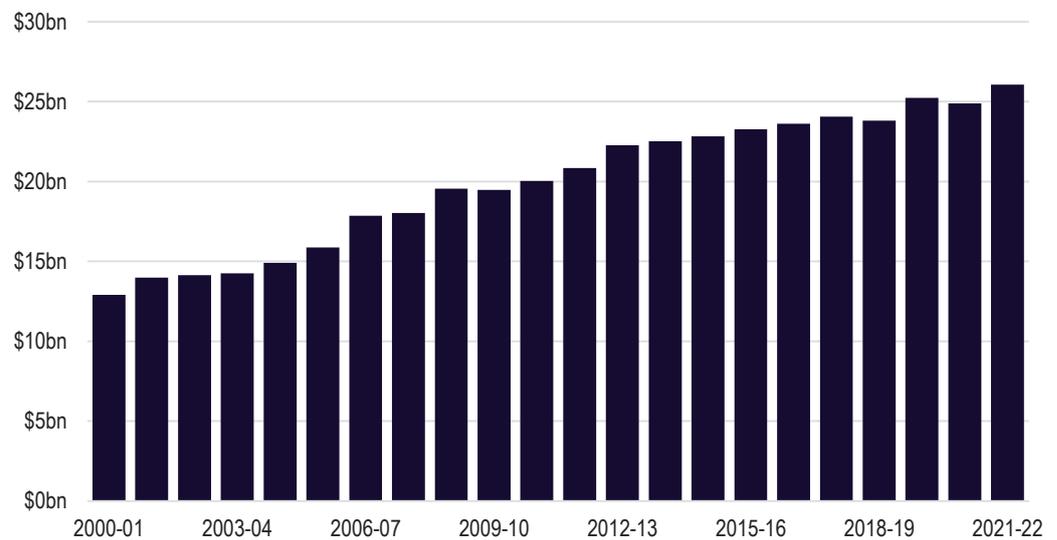
This section provides a profile of the Northern Territory economy, and the population and workforce trends that drive and support economic activity. This section provides the contextual overlay to understanding the economic impact of future investments in defence infrastructure in the Northern Territory, and the capacity and capability of industry to support the development of these projects.

1.1 Profile of the Northern Territory economy

The Northern Territory economy has historically experienced pronounced business cycles ranging from as short as two years through to up seven years. These business cycles have been influenced by major projects, often in the resources sector, as well as exposure of key industries to external factors that influence supply, demand, prices and exchange rates.

The NT Government has set a target to become a \$40 billion economy by 2030. In 2021-22, the Northern Territory’s Gross State Product (GSP) was \$26.1 billion, a 4.7 per cent increase from 2020-21 (**Figure 1.1**). The GSP growth rate recorded in 2021-22 can be primarily attributed to an increase in private investment of 26 per cent.

Figure 1.1 NT Gross State Product, \$bn



Source: ABS National Accounts – State Accounts

The Northern Territory is achieving below trend economic growth for a mature economy, but as an emerging economy, it should be able to sustain much higher levels of economic growth. Looking ahead, the NT Government is forecasting GSP to decline by 5.1 per cent in 2022-23, reflecting lower export volumes resulting from planned maintenance activity at the Ichthys LNG Plant.

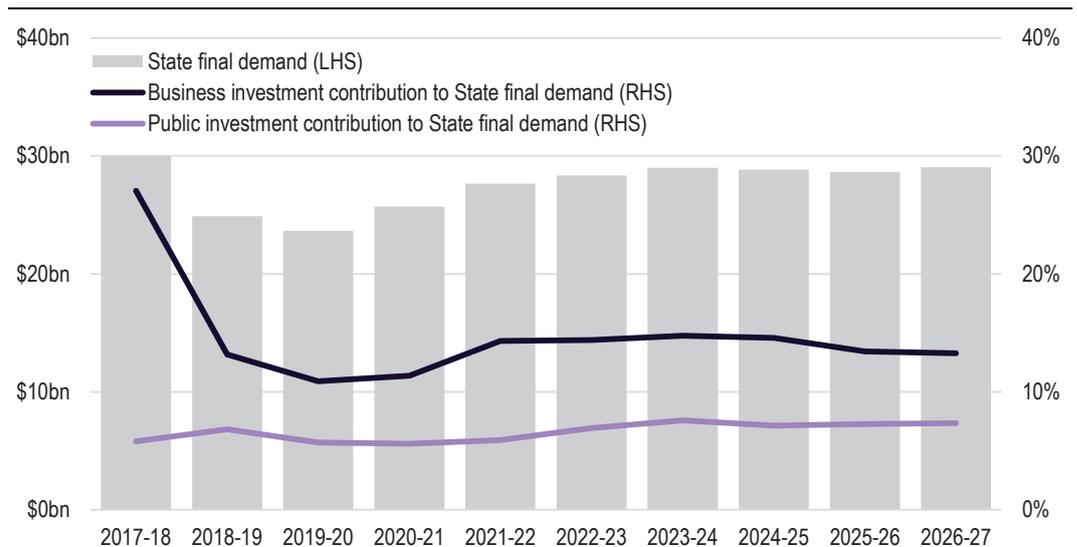
Thereafter, the NT economy is forecast to return to positive growth rates of growth of 2.7 per cent in 2023-24, 2.1 per cent in 2024-25, 4.5 per cent in 2025-26 and 0.6 per cent in 2026-27.¹

Relative to GSP, State Final Demand (SFD) provides a stronger indication of the strength of the domestic economy in the Northern Territory, as it does not include the contribution of trade or changes in inventories to economic growth.

In 2021-22, SFD for the Northern Territory was \$27.7 billion, a 7.7 per cent increase from 2020-21 (Figure 1.3). Looking ahead, the NT Government is forecasting SFD to increase by 2.5 per cent in 2022-23, reflecting in part a 20 per cent increase in public investment and a 3 per cent increase in business investment. Thereafter, SFD is projected to increase by 2.3 per cent in 2023-24, followed by declines over the following two years of 0.5 per cent and 0.7 per cent in 2024-25 and 2025-26 respectively. It is projected positive growth in SFD will return in 2026-27 at 1.4 per cent.

A major component of SFD is business investment, which in 2021-22 accounted for a 14.3 per cent share of total SFD for the Northern Territory. While the share of total SFD accounted for by business investment declined sharply from the 27.1 per cent share recorded in 2017-18, since this period and over the forward projection period, the share of total SFD accounted for by business investment consistently exceeds the contribution of public investment. Over the period between 2022-23 and 2026-27, the share of total SFD for the Northern Territory accounted for by business investment is projected to average 14.1 per cent, exceeding the average share accounted for by public investment over the same period of 7.2 per cent.

Figure 1.2 NT State Final Demand – Contribution of private and public investment

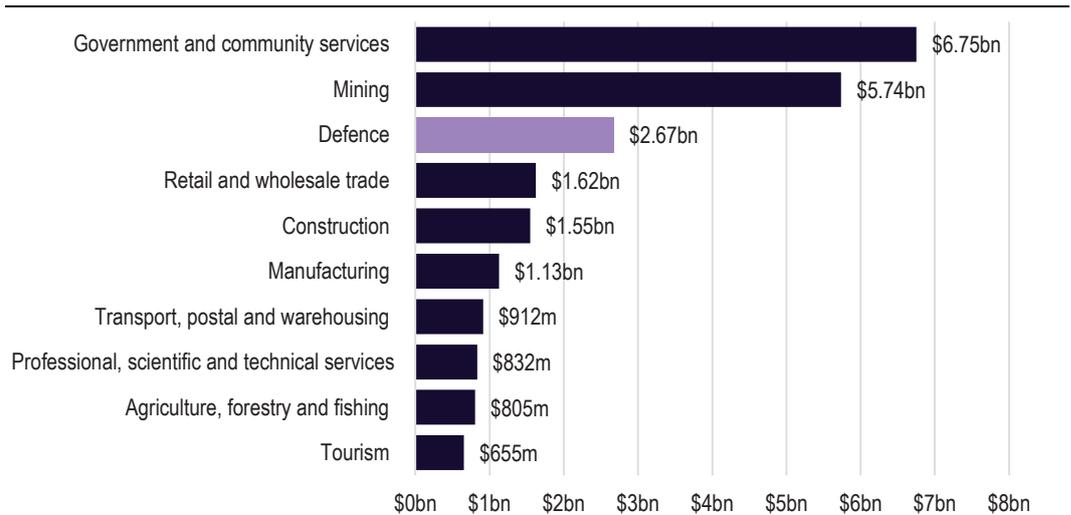


Source: NT Budget 2023-24 – Northern Territory Economy (p.18)

As presented in Figure 1.3, economic output in the Northern Territory is highly concentrated in government and community services, and mining. Government and community services contributes \$6.75 billion to GSP and consists of the three sub-industries of public administration and safety (\$3.11 billion), health care and social assistance (\$2.26 billion), and education and training (\$1.38 billion). Mining is the second largest industry in the Northern Territory economy, contributing \$5.74 billion to GSP. In 2021-22, the defence industry contributed \$2.67 billion to GSP, an increase of 8.7 per cent on 2020-21.

¹ Northern Territory Budget 2023-24 – Northern Territory Economy (p.3)

Figure 1.3 NT Gross State Product by Ten Largest Industries, 2021-22, \$bn,



Source: NT Budget 2023-24 – Industry Overview (p.1)

Historically, the Northern Territory economy has benefited from the development of a succession of major projects. Large scale heavy industry in the Northern Territory has undergone wholesale transformation as a result of major projects and the depth of complex and specialised heavy industrial and electrical engineering skills has matured. This is due in part to the exposure of local contractors to the high standards and requirements of multinational resource companies. Major projects have also played a role in attracting national and international companies to establish operations in the Northern Territory.

The 2023-24 NT Budget indicated major and significant private sector projects being facilitated by Investment Territory are collectively valued at **\$42.4 billion** and span all regions of the Northern Territory, including 14 projects granted major project status.

Prior to the 2023-24 NT Budget, in May 2022, the NT Government released the *report Investment Territory – 2021-22 Progress and Outlook*. This report provides an overview of the Northern Territory’s investment portfolio and the strategic framework being followed by Investment Territory, led by the Investment Commissioner and Major Projects Commissioner, to deliver these projects through to operational phase. The report indicated that as of May 2022, Investment Territory had in excess of 400 proposals currently under consideration. Of those under consideration, 53 projects made up the investment portfolio of early stage, priority and committed projects. As a collective (as of May 2022), the investment portfolio was projected to deliver to the Northern Territory \$29.9 billion in capital investment, \$2.8 billion in operational investment, 12,500 jobs during construction, and 5,800 direct and 2,400 indirect jobs during operations.

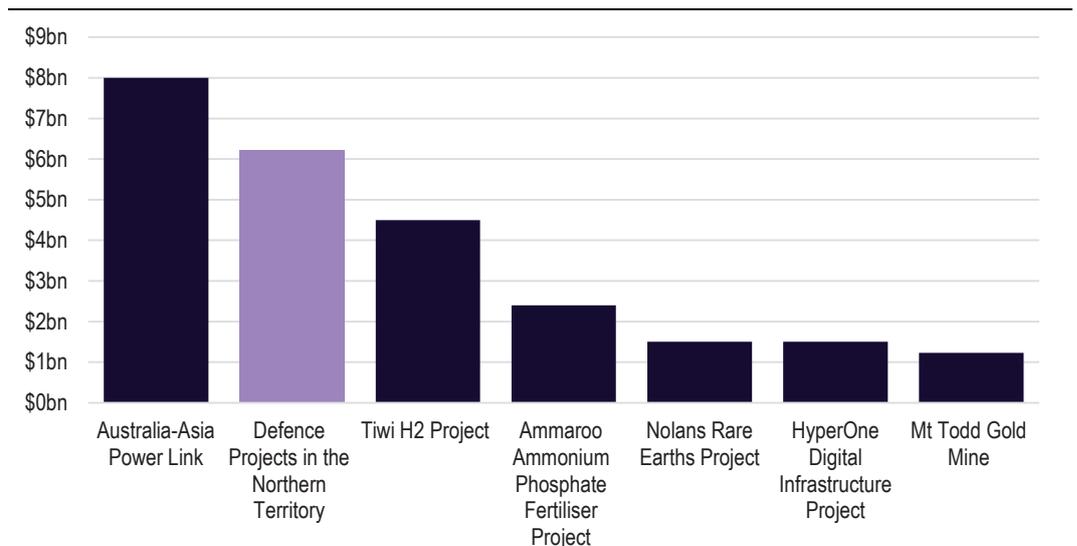
The priority portfolio consisted of 28 projects with total capital investment worth more than \$21 billion. The priority portfolio consists of projects expected to be delivered over the next 3-5 years based on current project and investment status, project design and complexity, proven proponent capability and market analysis. The priority portfolio excludes gas related projects managed by the Gas Taskforce, defence infrastructure and public infrastructure projects. There are however a number of adjacencies with the defence industry from the projects included in the priority portfolio, such as investments in digital connectivity and data storage.

In May 2023, Investment Territory provided ACIL Allen with an updated list of major projects in the Northern Territory from Investment Territory’s Investment Portfolio. The aggregated value of capital expenditure for major projects classified as ‘Priority’ or ‘Committed’ in the Investment Portfolio was \$34.8 billion. The level of uncertainty associated with major projects in the Investment Portfolio

progressing through to receiving a final investment decision has been accounted for by ACIL Allen in the economic modelling assumptions used in this study (see **Section 4.2.5**).

To highlight the scale of total capital expenditure on major defence projects in the Northern Territory over the five-year period between 2022-23 and 2026-27, ACIL Allen has undertaken a comparison of this expenditure with major private sector projects in the investment pipeline in the Northern Territory (**Figure 1.4**). The Australia-Asia Power Link project, for which NT construction expenditure is estimated at \$8 billion, is the only major project in the Northern Territory where capital expenditure exceeds the projected total capital expenditure on major defence projects in the Northern Territory.

Figure 1.4 Comparison of Defence Infrastructure Expenditure to Major Projects in the Northern Territory



Source: ACIL Allen based on estimated capital expenditure data sourced from ICN NT Project Summary List (May 2023)

Note: Projected expenditure on defence projects in the Northern Territory is for the period from 2022-23 to 2026-27 and accounts for total expenditure on defence projects in the investment pipeline, prior to allocation of this expenditure by source of supply.

Note: Estimated expenditure for private sector projects is for the complete project, aside from the Australia-Asia Power Link for which NT construction expenditure has been estimated at approx. \$8 billion (NT Budget 2022-23 – Northern Territory Economy p.16).

Going forward, the Northern Territory’s vast mineral deposits present the opportunity to engage in downstream minerals processing. As part of this, the Middle Arm Sustainable Development Precinct is set to cater for a range of emerging industries that are set to underpin the future of the Northern Territory economy, including petrochemicals, renewable hydrogen, carbon capture use and storage, advanced manufacturing and minerals processing. It will help to cater for the Northern Territory’s abundant natural resources and act as a launchpad for the Northern Territory to expand beyond gas export expertise to establish sustainable gas-based processing and manufacturing.

Key Finding 1 Economic trends and prospects

The Northern Territory economy has benefited from the development of a succession of major projects, which have leveraged off the Territory’s natural resources and proximity to key markets. Looking ahead, the NT economy is expected to be driven by a number of major projects, including investment in a number of major defence industry projects.

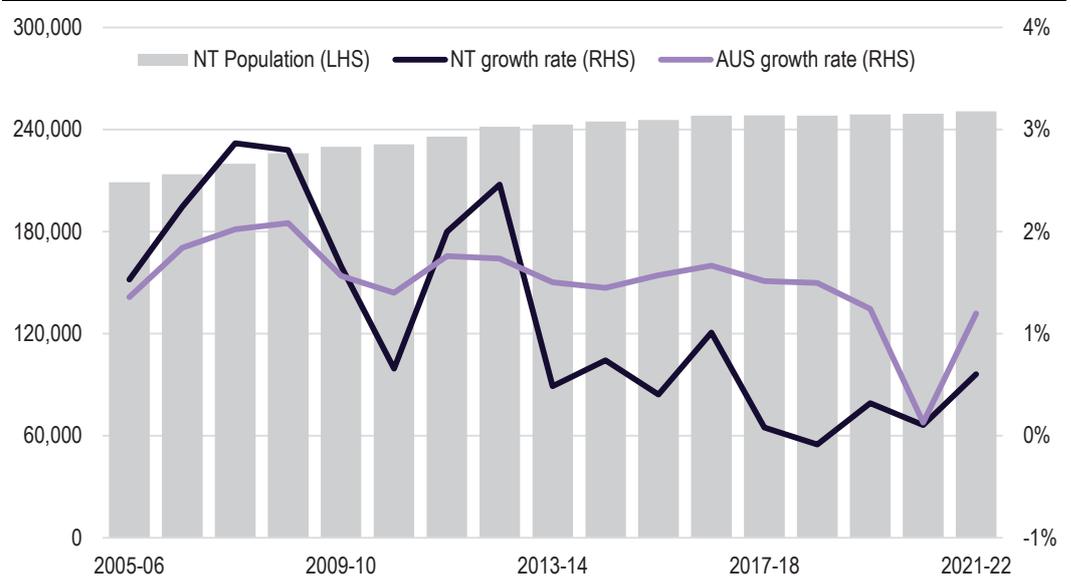
1.2 Population and labour market trends

1.2.1 Population

As of September 2022, the estimated resident population of the Northern Territory was 250,602 people, which accounts for just under one per cent of the national population. In 2021-22, the Northern Territory recorded an annual population growth rate of 0.6 per cent. While this was the smallest annual population growth rate for 2021-22 across all of the Australian states and territories, it was the strongest annual population growth rate recorded by the Northern Territory since 2016-17.

As presented in **Figure 1.5**, the annual population growth rate for the Northern Territory has not exceeded the national population growth rate since 2012-13 when the Northern Territory population grew by 2.5 per cent. The 2023-24 NT Budget forecasts the annual population growth rate will be 0.4 per cent in 2022-23, 0.9 per cent in 2023-24, followed by three consecutive years of growth at one per cent. The achievement of a one per cent annual population growth rate is contingent on the return of overseas migration and a stabilisation in interstate migration outflows.

Figure 1.5 Annual population growth rates for the Northern Territory and Australia



Source: ABS Cat. 3101.0

The NT Government have a target of reaching a population of 300,000 people by 2030.² Achieving this target would not be possible with the annual population growth rates recorded on average over the past ten years, however the target can remain within reach if positive initial signals in interstate and overseas migration flows continue and achieve a step change in magnitude beyond historic trends.

² NT Government: NT Infrastructure Strategy 2022 to 2030

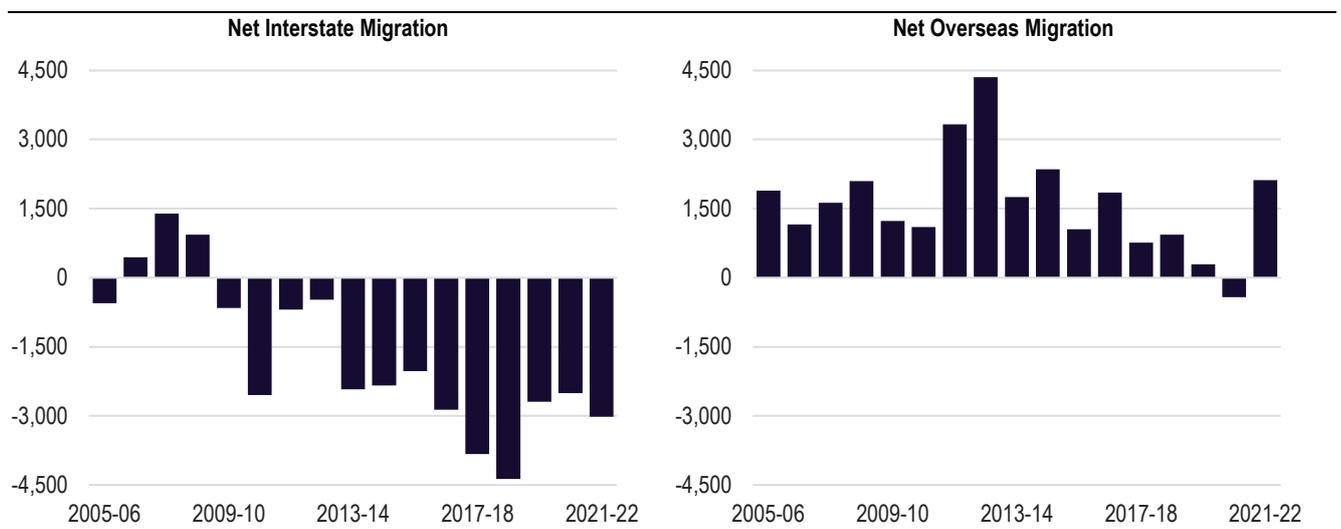
Figure 1.6 presents an overview of annual net interstate and overseas migration for the Northern Territory over the period since 2005-06.

The Northern Territory recorded 39 consecutive quarters of negative net interstate migration up to June 2022. On an annual basis, the Northern Territory has not recorded positive net interstate migration since 2008-09.

In 2020-21, the Northern Territory recorded negative net overseas migration for the first time in over 15 years. Net overseas migration for the Northern Territory peaked in 2012-13 at 4,354 people and in the subsequent period has been in gradual decline.

Most recently, however, this trend has been reversed with the Northern Territory recording in 2021-22 the highest level of net overseas migration since 2014-15. This result is due in part to the pent-up demand linked to overseas migrant arrivals which were severely impacted by border closures resulting from the COVID-19 pandemic, as well as labour shortages across the economy.

Figure 1.6 Annual net interstate and overseas migration in the Northern Territory



Source: ABS Cat. 3101.0

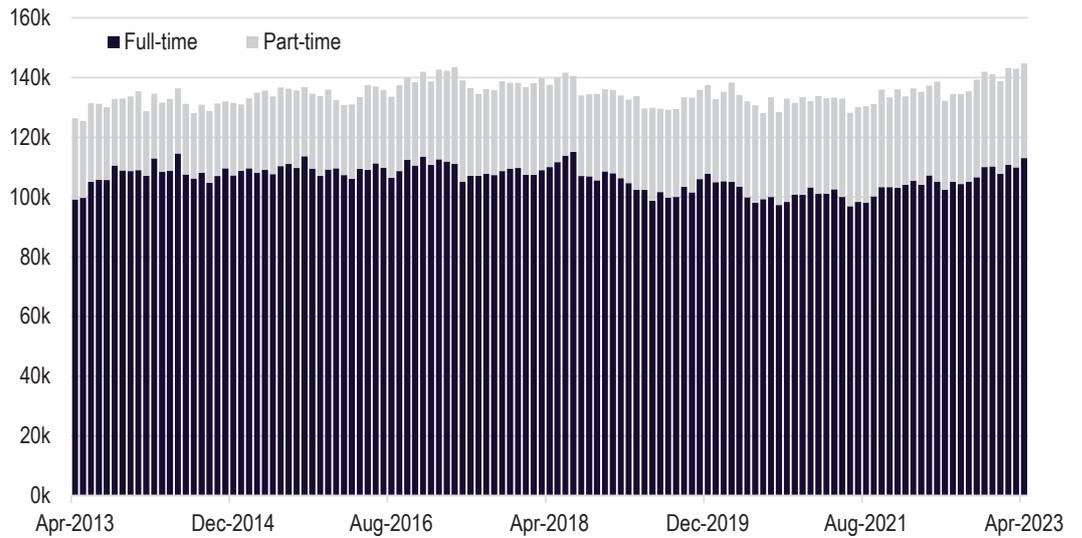
Key Finding 2 Population growth a constraint on Northern Territory’s economic development

The Northern Territory has recorded below average rates of population growth for more than a decade, reflecting the long term trend of net interstate migration out of the Territory to other parts of Australia. This has meant that there is an increased reliance on overseas migration to grow the local population.

1.2.2 Labour market

As of April 2023, there were approximately 144,710 people employed in the Northern Territory. Of this, approximately 113,070 people are in full-time positions and 31,640 people in part-time positions (**Figure 1.7**). This brings the current size of the labour force above the previous peak of approximately 143,460 people in full-time or part-time positions in April 2017. At various stages over the period between 2017-18 and 2020-21, the Northern Territory recorded less than 100,000 full-time workers in the labour force, representing a decline of in excess of 10,000 full-time workers relative to the 111,200 full-time workers recorded at the peak in April 2017.

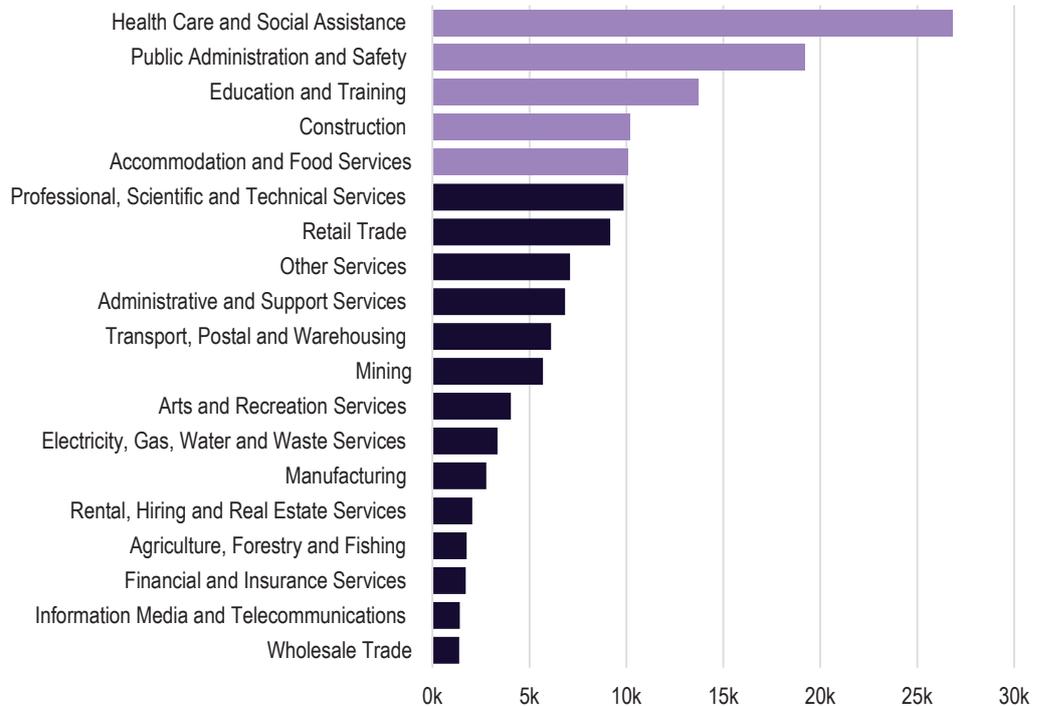
Figure 1.7 Northern Territory – Total Employed



Source: ABS Cat. 6202.0 Labour Force

In the Northern Territory, the five largest industries based on the number of people employed (full-time and part-time) as of February 2023 are Health Care and Social Assistance (26,810 people, 18.7 per cent), Public Administration and Safety (19,190 people, 13.4 per cent), Education and Training (13,720 people, 9.6 per cent), Construction (10,180 people, 7.1 per cent), and Accommodation and Food Services (10,070 people, 7 per cent). As a collective, the five largest industries account for approximately 55.8 per cent of total employed either full-time or part-time in the Northern Territory (**Figure 1.8**).

Figure 1.8 Northern Territory Employment by Industry – February 2023

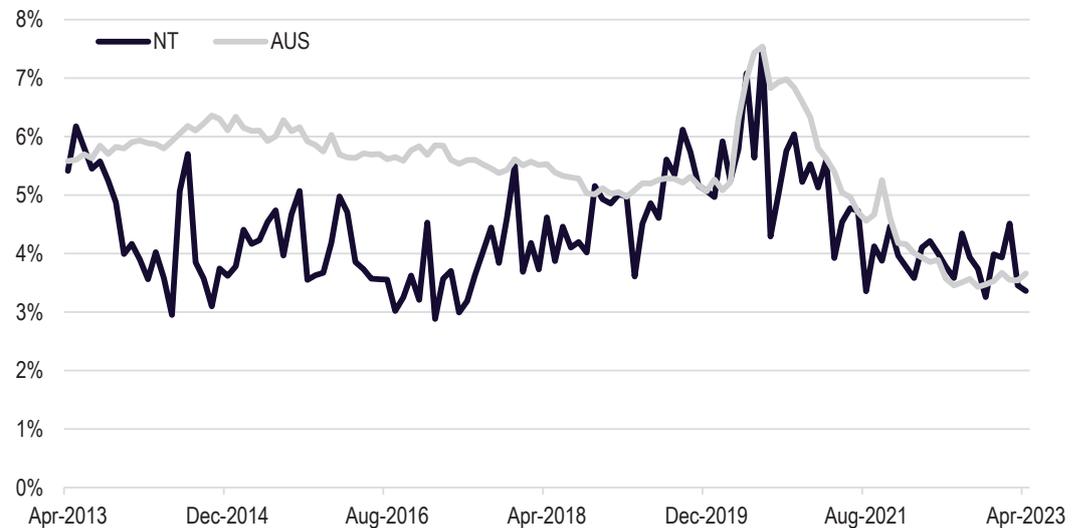


Source: ABS Labour Force, Detailed Quarterly

Historically, the unemployment rate in the Northern Territory has sat below the national unemployment rate, however the gap has converged over the past five years (**Figure 1.9**). As of

April 2023, the unemployment rate in the Northern Territory was 3.4 per cent, below the national unemployment rate of 3.7 per cent. The current unemployment rate brings the Northern Territory close to previous low points over the past ten years, including 3.4 per cent in August 2021, 3.6 per cent in March 2019, 2.9 per cent in February 2017 and 2.9 per cent in May 2014.

Figure 1.9 Unemployment Rate – Seasonally Adjusted



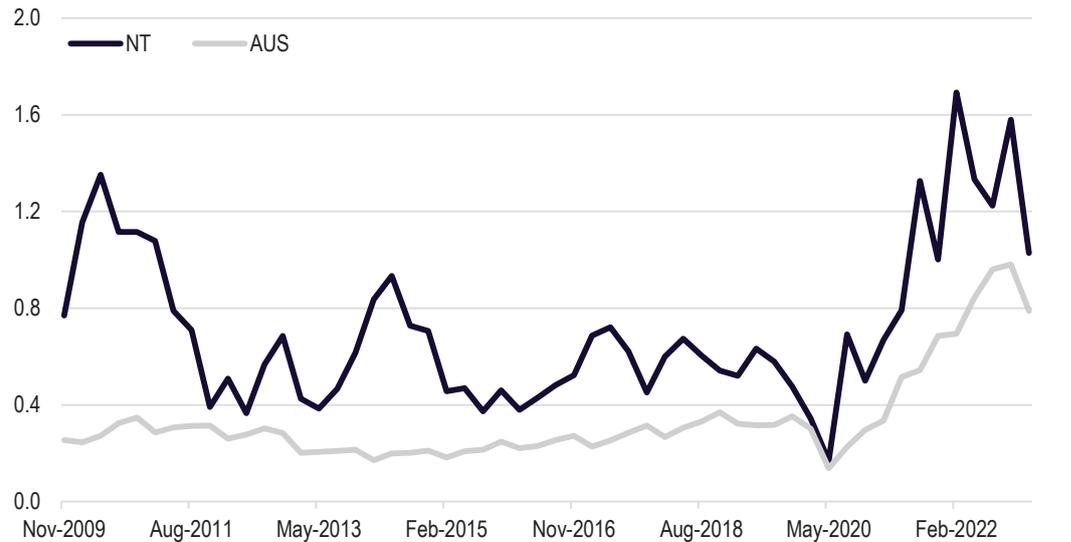
Source: ABS Cat. 6202.0 Labour Force

While the unemployment rate in the Northern Territory is close to historic lows, the tight labour market has brought challenges including acute skill shortages in a number of key occupations. The tight labour market has been exacerbated by reduction in migration during the COVID-19 pandemic. Well-targeted migration ensures the workforce remains adaptable and dynamic to supporting emerging economic opportunities.

Figure 1.10 presents the number of job vacancies per unemployed person in the Northern Territory for the period from November 2009 to February 2023. This ratio peaked at 1.69 job vacancies per unemployed person in February 2022. The ratio has declined over the subsequent 12 months to reach 1.03 job vacancies per unemployed person in the most recent reporting period in February 2023. Despite the decline recorded over the last 12 months, the ratio remains at historically high levels and substantially above the average for the period since November 2009 of 0.72 job vacancies per unemployed person. Since November 2009, the number of job vacancies per unemployed person in the Northern Territory has also consistently been above the same indicator measured at a national level.

This ratio can be interpreted as an indicator of the level of imbalance at any one time between the skill set of individuals looking for work in the Northern Territory and the skill shortages in the Northern Territory economy.

Figure 1.10 Number of job vacancies per unemployed person

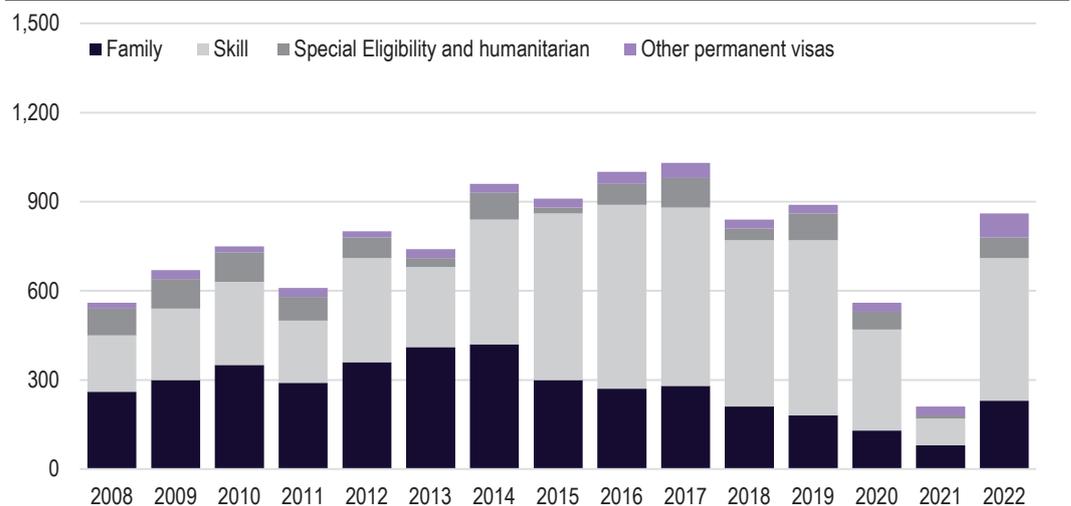


Source: ABS Cat. 6354.0 Job Vacancies, ABS Cat. 6202.0 Labour Force

Overseas migrants arriving in the Northern Territory through permanent and temporary visas have historically helped to address skill shortages within the local economy. The total number of permanent visa arrivals in the Northern Territory peaked in 2016-17 at 1,030 people, and over the subsequent period experienced a steady decline to a level of 560 people in 2019-20 (Figure 1.11).

In 2020-21, total permanent visa arrivals in the Northern Territory was only 210 people, which was a result of the COVID-19 border closures. Since then, total permanent visas has rebounded, to 860 permanent visa arrivals in 2021-22. On average over the last ten years, the highest share of permanent visa arrivals in the Northern Territory have been attributed to the Skilled (55.4 per cent) and Family (32 per cent) categories.

Figure 1.11 Permanent Visa Arrivals in the Northern Territory – Financial Year

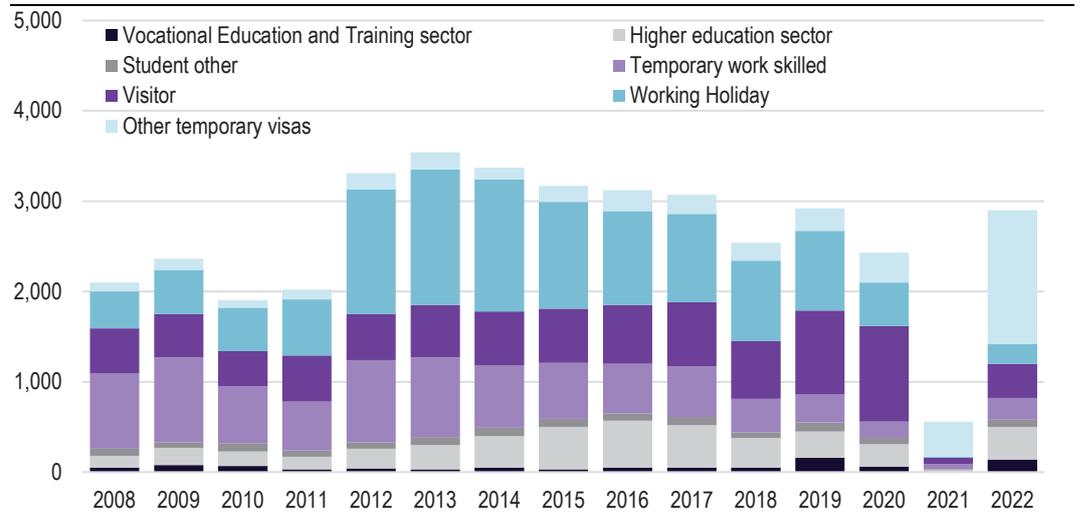


Source: ABS – Overseas Migration, Arrivals, State/territory, Major groupings and visas

The actual number of people living in the Northern Territory is higher than the reported population data due to temporary migration. The total number of temporary visa arrivals in the Northern Territory peaked in 2012-13 at 3,540 people, and over the subsequent period experienced a steady decline to a level of 2,430 people in 2019-20 (Figure 1.12). In 2020-21, total temporary visa arrivals in the Northern Territory was recorded at only 560 people as a result of the COVID-19 border

closures, before rebounding back to 2,900 temporary visa arrivals in 2021-22. On average over the past ten years, the highest share of temporary visa arrivals in the Northern Territory have been attributed to the Working Holiday (28.2 per cent) and Visitor (22.3 per cent) categories.

Figure 1.12 Temporary Visa Arrivals in the Northern Territory – Financial Year



Source: ABS – Overseas Migration, Arrivals, State/territory, Major groupings and visas

Key Finding 3 Labour market conditions are tightening

The Northern Territory economy has historically experienced tighter labour market conditions than the rest of Australia, reflecting the smaller population base. COVID-induced border closures has exacerbated this challenge, as NT industry was unable to source skilled labour from overseas.

Defence Industry Context

2

This section provides an overview of the defence industry in the Northern Territory, and the strategic intent behind the Commonwealth Government's investment in defence facilities, and its future investment plans for the Northern Territory.

2.1 Northern Territory defence industry strategic context

2.1.1 Overview

The Northern Territory has a central role in Australia's defence and regional stability. As Australia's northernmost jurisdiction, the Northern Territory is strategically located at the hinge of the Indo-Pacific region. The nation more broadly acts as a 'southern anchor', as Japan and South Korea act as 'northern anchors', into a US allies and partners network attempting to maintain peace and prosperity in the Indo-Pacific region. Defence facilities and infrastructure in the Northern Territory are integral to the operational capability of the Australian Defence Force (ADF), as well as Australia's military partners and regional neighbours.

Since the completion of the 2016 report commissioned by Master Builders NT, the defence landscape in the Northern Territory has shifted. It is anticipated defence investment in the Northern Territory will increase over the next decade as a result of heightened geopolitical uncertainty and the Northern Territory's important strategic location in the Indo-Pacific region. There are few other locations in the Indo-Pacific with comparable space, training facilities and strategic geography.

The heightened geopolitical uncertainty and the strategic importance of the Northern Territory has been reflected in a number of recent significant developments:

- The **United States Force Posture Initiatives (USFPI)** have extended Australia's existing defence alliance with the United States to deepen interoperability, enhance capabilities and improve joint responses to humanitarian assistance.
- The alliance with the United States has been solidified through the formation of the **AUKUS security pact** in September 2021, along with ongoing dialogue between Australia, the United States, India and Japan as part of the Quadrilateral Security Dialogue (Quad).
- The Northern Territory is anticipated to play a role in **logistics, training and exercise activities** involving the ADF and regional partners such as Singapore, South Korea and India.
- Initiatives responding to heightened **geo-political tensions and strategic competition in the Pacific island region**
- The signing of the **Australia-Japan Reciprocal Access Agreement** in 2022, which facilitates implementation of cooperative activities between the defence forces of the two countries, and further promotes bilateral security and defence cooperation.

Darwin is the only capital city in Northern Australia and is a regional hub for Australia's international engagement in the Indo-Pacific region. Due to its location in the Indo-Pacific region, defence

facilities in the Northern Territory are often used for a range of military exercises by the ADF and defence partners, such as the United States (USFPI), Japan (Exercise Jackaroo), India (AUSINDEX21), Indonesia (Exercise Wirra Jaya) and Papua New Guinea (Exercise Paradise). The Northern Territory also hosts two large biennial defence exercises. Exercise Kakadu, an international maritime engagement exercise, and Exercise Pitch Black, an international air combat exercise. Both exercises bring together defence partners such as the US, UK, Malaysia and Singapore. The 10th anniversary of the USFPI occurred in 2021, and included the Marine Rotational Force – Darwin (MRF-D) of up to 2,500 US personnel training throughout the Northern Territory.

The defence and national security platforms either based in or operating from the Northern Territory will be subject to replacement over the five-year outlook period. The F-18 Hornet, Armidale Class Patrol Boat and Cape Class Patrol Boat will be replaced by new platforms, such as the F-35A Joint Strike Fighter and the Offshore Patrol Vessel. In addition, the Northern Territory has been identified as a likely Forward Operating Base for the future MQ-4C Triton unmanned aerial vehicles.

The capacity for the Northern Territory to play a role going forward in supporting Australia's defence allies will need to be supported through ongoing investment towards existing and new defence infrastructure.

2.1.2 Defence Strategic Review (2023)

In the period since the 2016 Defence White Paper, and even more recently since the 2020 Defence Strategic Update, there have been a collection of strategic developments that have impacted Australia's security and the collective security of Australia's close allies and partners. These include Russia's invasion of Ukraine, the strengthening of the strategic partnership between China and Russia, and increasing tensions in the South China Sea, around Taiwan and near Japan. A further strategic development that is significant in the context of defence infrastructure in the Northern Territory is the development long-range strike capability from infrastructure located in the South China Sea, as well as the rise of Chinese naval capabilities in the Indo-Pacific region.

The Defence Strategic Review (DSR), released in April 2023, outlines how the Defence Force's structure, posture and preparedness need to change in order to meet the nation's future security challenges. A priority area for immediate action identified in the DSR is to improve the Defence Force's capability to operate from Australia's northern bases.

The DSR acknowledges the Government adopted a series of recommendations in the 2012 Force Posture Review and 2013 Defence White Paper and allocated resources to improve the network of bases, ports and barracks. The DSR states that most of these recommendations relating to the northern bases have not been implemented. It is identified the priority for investment in the northern bases is air bases. More specifically, it is recommended that work on the air bases should be undertaken in the areas of hardening and dispersal, runway and apron capacity, fuel storage and supply, aviation fuel supply and storage, guided weapons and explosive ordnance storage, connectivity required to enable essential mission planning activities, accommodation and life support, and security.

Key Finding 4 Strategic importance of defence in the Northern Territory

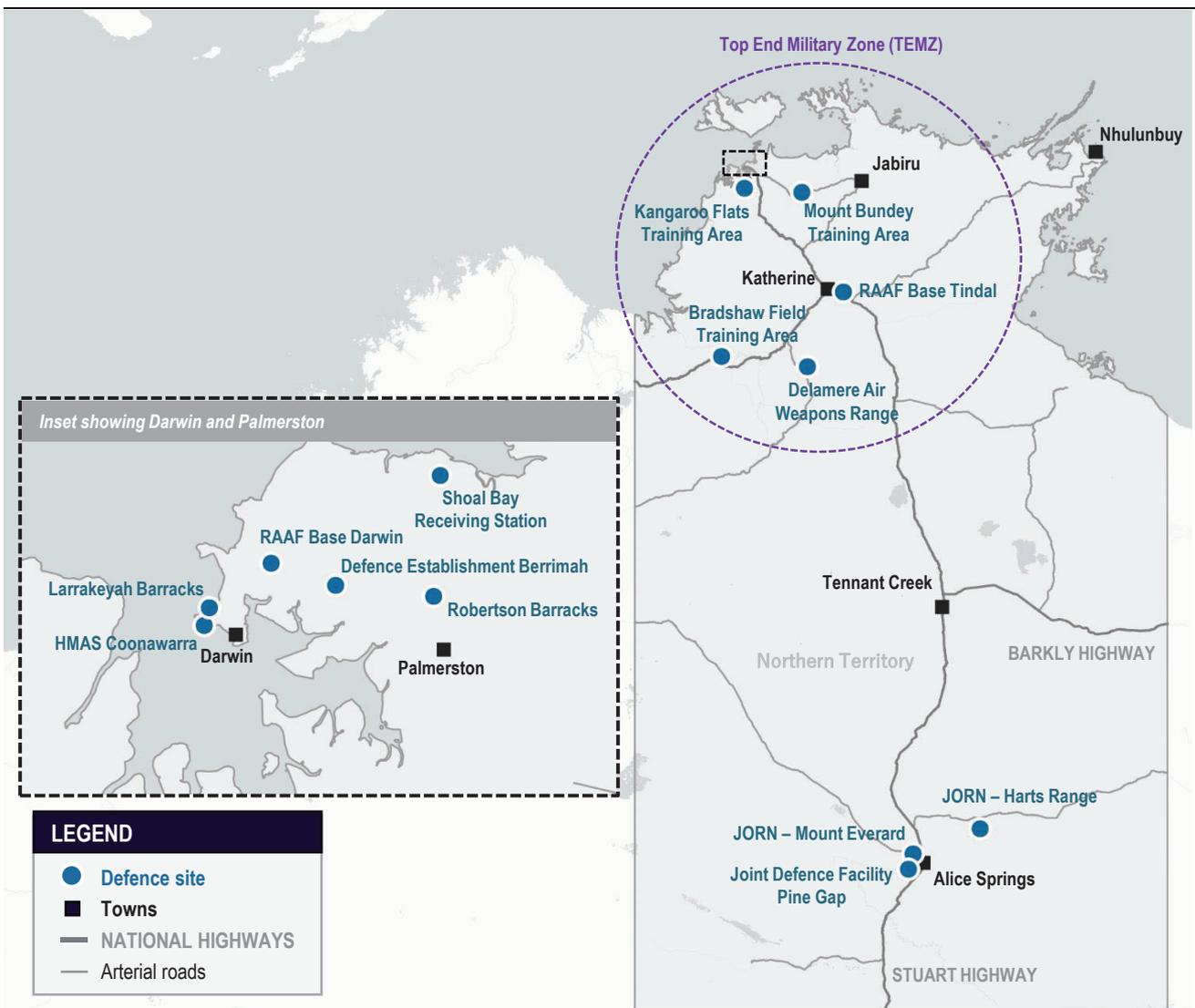
The Defence Strategic Review has identified the Defence Force's capability to operate from Australia's northern bases as a strategic priority. This will see renewed focus on the development of a number of strategic defence infrastructure projects over the coming years.

2.2 Northern Territory defence industry economic context

2.2.1 Defence Facilities

There are a number of defence facilities spread across the Northern Territory, including major Australian Army bases, Royal Australian Navy bases, Royal Australian Air Force military air bases, land-based training areas, an air weapons range and signals intelligence-gathering facilities. An overview of major ADF defence facilities in the Northern Territory is presented below (Figure 2.1).

Figure 2.1 Defence Facilities in the Northern Territory



Source: ACIL Allen

While many recreational and private-sector entities make extensive use of Darwin Harbour, defence is one of four stakeholders who control its most significant operations, alongside INPEX, the NT Government and Landbridge Infrastructure Australia. The ADF routinely uses the East Arm

Wharf to load and unload vessels, however it is anticipated the redevelopment of HMAS Coonawarra will reduce the reliance on the East Arm port facility.

2.2.2 Role of defence in the NT economy

Alongside the strategic importance of defence infrastructure located in the Northern Territory, investment in defence infrastructure is also a significant contributor to the Northern Territory economy. It supports business activity and workforce skills development, and also generates direct and indirect employment and creates critical mass for the strategic infrastructure that is essential to industrial expansion.³ The workforce in the Northern Territory is highly mobile, and as a result the retention of skilled workers relies on business stability. Long term contracts through the defence industry provide businesses with the certainty to invest in upgrading the skills of their workforce, and in turn improving the retention of workers in the Northern Territory. In addition, a number of defence personnel relocate to the Northern Territory with their family, who make an important contribution to the economic and social fabric of the local community.

In November 2020, the Territory Economic Reconstruction Commission (TERC) completed its final report. The report outlined recommendations to provide a roadmap to accelerate the economic rebound post COVID-19. The TERC identifies national defence and security, alongside mining, manufacturing, tourism and agribusiness as a key activity to drive economic growth in the future. Furthermore, the *Infrastructure Australia Regional Strengths and Infrastructure Gaps* report released in March 2022 identified defence as one three key regional growth industries for the Northern Territory.

In 2021-22, there were 5,395 defence personnel stationed in the Northern Territory, which consisted of permanent and reserve ADF personnel, as well as Department of Defence public servants.⁴ In the permanent forces, there were 4,273 defence personnel stationed in the Northern Territory, consisting of 2,650 Army personnel, 941 Air Force personnel and 682 Navy personnel. This equated to 7.3 per cent of the total permanent Australian defence force. In 2021-22, there were 204 Department of Defence public servants based in the Northern Territory. Between 2021-22 and 2020-21, the number of permanent defence personnel stationed in the Northern Territory declined by 2.5 per cent, broadly in line with the decline in total permanent defence personnel recorded nationally over the same period of 2.3 per cent. Inclusive of family members linked to defence personnel, the total defence-related population of the Northern Territory is estimated to be about 9,000 people.⁵

Key Finding 5 Economic importance of defence to the Northern Territory

There are a number of defence facilities spread across the Northern Territory, including major Australian Army bases, Royal Australian Navy bases, Royal Australian Air Force military air bases, land-based training areas, an air weapons range and signals intelligence-gathering facilities. Beyond their strategic importance, these facilities are also significant contributor to the Northern Territory economy.

³ Northern Territory Defence and National Security Strategy 2018 (p.14)

⁴ Department of Defence Annual Report 2021-22 (p.120) – Figures based on substantive location for the Australian Defence Force and actual location for the Australian Public Service.

⁵ Northern Territory Budget 2022-23 – Industry Outlook (p.23)

2.3 Defence infrastructure project outlook

For the purposes of this study, the defence infrastructure project outlook for the Northern Territory has been defined through the lens of three headline categories which are introduced in this section:

- Australian Defence Force (ADF) Investments
- United States (US) Investments
- Northern Base Resilience

Beyond these three headline categories, there is additional investment that may occur in the Northern Territory related to the defence industry. This additional investment sits outside of the three headline categories and as such is not captured within the modelling inputs for this study. It does however contribute to the broader economic impact of the defence industry and related industries to the Northern Territory economy.

This additional investment includes major projects such as the Darwin Ship Lift Project. The common-user facility will be able to lift the Royal Australian Navy's (RAN) Arafura-class Offshore Patrol Vessels (OPV) and other military and civilian vessels of up to 5,000 tonnes. The project will help to secure Darwin's position as a maritime hub servicing the Regional Maintenance Centre North (RMC-N) and industry across the region.

Other areas of investment with linkages to the defence industry in the Northern Territory include various subsea data cable projects (private sector) under consideration, possible investment by other major allied international defence partners and the delivery of the Resilience-Effects-Defence-Space-Intelligence-Cyber-Enablers (REDSPICE) program by the Australian Signals Directorate (ASD).

ASD have described REDSPICE as the "most significant single investment in the Australian Signals Directorate's 75 years. REDSPICE will deliver forward-looking capabilities essential to maintaining Australia's strategic advantage and capability edge over the coming decade and beyond.

2.3.1 ADF Investments

Investment by the Australian Defence Force (ADF) in defence infrastructure located in the Northern Territory is directed towards a wide range of infrastructure types including major Australian Army bases, Royal Australian Navy bases, Royal Australian Air Force military air bases, land-based training areas, air weapons ranges and signals intelligence-gathering facilities.

Table 2.1 provides brief project descriptions for all defence projects located in the Northern Territory that are grouped under the ADF Investments category. This list of projects captures projects that are already under construction (including some to be completed in 2022-23), as well as projects yet to commence and in the investment pipeline (both approved and unapproved). While the majority of expenditure associated with these projects occurs within the modelling period, data provided by the Department of Defence indicates there is additional expenditure associated with some of the projects that occurs beyond the modelling period in 'Outer' years.

A number of the defence projects included in **Table 2.1** are a component of a broader national defence program, where expenditure on the overall program is distributed across a number of defence facilities across Australia. As an example, the Maritime Patrol Aircraft Replacement AIR7000 Phase 2B) Project allocates expenditure to upgraded facilities and infrastructure at RAAF Base Darwin, as well as RAAF Base Edinburgh (SA), RAAF Base Townsville (QLD), RAAF Base Pearce (WA) and HMAS Stirling (WA).

Table 2.1 Project Descriptions – ADF Investments

Project	Description
New Air Combat Capability Facilities Project (AIR 6000 Phase 2A/B)	This project provided new and upgraded facilities and infrastructure to support the introduction of the Joint Strike Fighter at RAAF Base Tindal.
RAAF Base Tindal Redevelopment Stage 6 and USFPI Airfield Works and Associated Infrastructure	This program is delivering a range of enhanced facilities and infrastructure, including airfield improvements, at RAAF Base Tindal.
Navy Capability Infrastructure Sub-program Offshore Patrol Vessel (OPV) Facilities (SEA 1180 Phase 1)	This project is providing berthing, training, maintenance, logistics, and support facilities to support the introduction into service of new OPVs at HMAS Coonawarra and RAAF Base Darwin.
AIR7000 Phase 1B Remotely Piloted Aircraft System Facilities Project	This project is providing facilities and infrastructure to support new aircraft capability at RAAF Base Tindal. The works include maintenance hangars, support and maintenance building, aircraft pavements, aircraft wash and engine run-up area, equipment shelter, local building services plant, site wide engineering services and internal access roads, car parking, general pavements and landscaping.
Maritime Patrol Aircraft Replacement (AIR7000 Phase 2B)	This project is providing new and upgraded facilities and infrastructure to support the introduction of the P-8A aircraft at RAAF Base Darwin.
USFPI Northern Territory Training Areas and Ranges Upgrades	This project is providing upgraded range facilities and associated infrastructure at the Bradshaw Field, Kangaroo Flats, Mount Bunday and Robertson Barracks Close NT training areas. This includes range control, training camp accommodation, small arms and ranges, roads, and supporting facilities and infrastructure.
Larrakeyah Defence Precinct Redevelopment Program	This program is upgrading critical base infrastructure, improving the working environment, delivering new facilities, and supporting future growth on the Larrakeyah Defence Precinct. This program is also delivering a new wharf, fuel storage and refuelling capabilities to support Navy's major surface combatant ships operating in the north of Australia.
Joint Health Command Garrison Facilities Upgrades	This project is providing fit-for-purpose, contemporary Garrison Health Facilities at several bases around Australia, including RAAF Base Darwin.
Facilities to Support SEA2273 Fleet Information Environment Modernisation Project	This project is providing an upgraded information system that supports maritime and naval operations at HMAS Coonawarra.
Military Working Dogs Kennel Facility Upgrade	This project is upgrading military working dog kennel facilities at RAAF Base Tindal.
LAND154PH4 Joint Counter Improvised Explosive Device (Tranche 2)	This project proposes to provide testing, storage and training facilities to support the associated capability at various bases, including Robertson Barracks.
LAND8180 Phase 1 Aviation Field Fire Truck Capability	This project proposes to deliver training, testing, maintenance, and storage facilities to support the associated capability at various bases, including RAAF Base Tindal.
AIR5349 Phase 6 Facilities to Support Advanced Growler (Tranches 1 & 2)	This project proposes to provide new facilities and infrastructure in support of the associated capability at various bases, including at Delamere Air Weapons Range.
Facilities to Support AIR6500PH1 Joint Air Battle Management System	This project is focused on the installation of fixed communication facilities at RAAF Base Darwin.
National Airfields Capital Works	This project is focused on airfields pavements, lighting and drainage maintenance at RAAF Base Darwin and Mount Bunday Airfield.
Defence Fuel Transformation Program Tranche 2	This project proposes to remediate and improve fuel supply infrastructure at various bases, including RAAF Base Darwin.

Project	Description
SEA129-5 Maritime Tactical Unmanned Aerial Systems Facilities	Scope TBA. Proposed site of project works is HMAS Coonawarra.
Robertson Barracks Base Improvements Project	This project will upgrade engineering services (such as potable water, electrical and fire water), provide additional living-in accommodation, and provide a new combined mess at Robertson Barracks.
Facilities to Support LAND4503 Phase 1 Armed Reconnaissance Helicopter Replacement Project	This project is focused on facilities to support new helicopter capability at Robertson Close Training Area and Robertson Barracks.
Facilities to Support LAND8710PH1 Army Littoral Manoeuvre	This project is focused on facilities to support new landing craft capability at HMAS Coonawarra.
RAAF Base Darwin Mid Term Refresh	This project proposes to address condition, capacity and compliance issues at RAAF Base Darwin, including upgrading engineering services.
RAAF Darwin Advanced Compound	This project proposes to provide a multi user facility at RAAF Base Darwin, including working accommodation and planning rooms.
Facilities to Support JP9101 Enhanced Defence High Frequency Communications System (Project Phoenix)	This project is focused on upgraded transmit communication facilities at Shoal Bay Receiving Station.
General Ranges & Training Area Redevelopments	This project is focused on training area upgrades at Bradshaw Field Training Area, Delamere Air Weapons Range, Mount Bundy Training Area and RAAF Base Tindal.
Classified Project	NA. Scope of project works is classified.

Source: Department of Defence data submission to ACIL Allen (March 2023), Federal Budget 2023-24: Department of Defence Portfolio Budget Statement – Appendix D Enterprise Estate and Infrastructure (p.134-153)

2.3.2 US Investment

Over the outlook period, the United States are anticipated to continue their partnership with Australia through both the upgrading of existing defence infrastructure and investment in new defence infrastructure in the Northern Territory. The investment by the US will better secure its interests in the Northern Territory and support increased rotations of air and sea assets. One current example of US investment in defence infrastructure in the Northern Territory is the \$270 million bulk fuel storage facility at East Arm that is projected will provide storage of 300 million litres of aviation-grade JP-5 turbine fuel and commercial grade Jet A-1 fuel.

In areas with adjacencies to the defence industry, the United States has also been a strategic partner for Australia, such as the aerospace industry. In 2022, NASA launched a sounding rocket campaign from the Arnhem Space Centre, their first from a commercial facility outside of the United States.

The modelling inputs for this study relating to US investment in defence projects located in the Northern Territory assumes investment directed towards projects located at RAAF Base Darwin and RAAF Base Tindal, as well as an additional expenditure allocation for unknown projects in the investment pipeline within the modelling period.

2.3.3 Northern Base Resilience

The strategic context for expenditure allocated to Northern Base Resilience was underpinned by the Defence Strategic Review. The DSR outlines the need to improve the ADF's ability to operate from Australia's northern bases. A presentation by the Department of Defence in May 2023 to the ADM Northern Australia Defence Summit also outlined the strategic context relating to investment

in Australia's northern bases.⁶ This presentation highlighted the strategic context was underpinned by the following key factors:

- Defence infrastructure must provide a hardened and dispersed platform to support the deployment of the ADF and the defence of Australian territory and our interests.
- The key line of forward deployment for the ADF stretches across Australia's northern maritime approaches.
- Operational success will depend on a developed network of northern bases to provide a platform for logistics support, denial and deterrence.
- Integral to this is the network of air bases stretching from the Cocos (Keeling) Islands in the Indian Ocean, RAAF Bases Learmonth and Curtin in north west Western Australia, Darwin and Tindal in the Northern Territory, and Scherger and Townsville in North Queensland.

The modelling inputs for this study relating to investment by the ADF in Northern Base Resilience were developed by Master Builders NT, and assumes expenditure within the modelling period is allocated to projects located at RAAF Base Darwin, RAAF Base Tindal and Berrimah Defence Establishment. Master Builders NT also projected that expenditure through Northern Base Resilience would also be allocated to projects located at HMAS Coonawarra and Robertson Barracks, however this expenditure was projected to occur outside of the modelling period.

Key Finding 6 Defence infrastructure outlook in the Northern Territory

There is a significant pipeline of defence infrastructure investment that is expected to occur in the Northern Territory in the coming years, not only from Australian Defence Force but also from proposed investments by the United States.

⁶ Department of Defence: Current and Future Defence Infrastructure Projects in Northern Australia (May 2023) – Presentation by Air Commodore Ron Tilley at ADM Northern Australia Defence Summit.

Construction Industry Context

3

This section provides a more detailed examination of the Northern Territory construction industry, taking into consideration broader trends in construction activity, and feedback from industry on the current state of the construction industry.

3.1 Construction industry trends

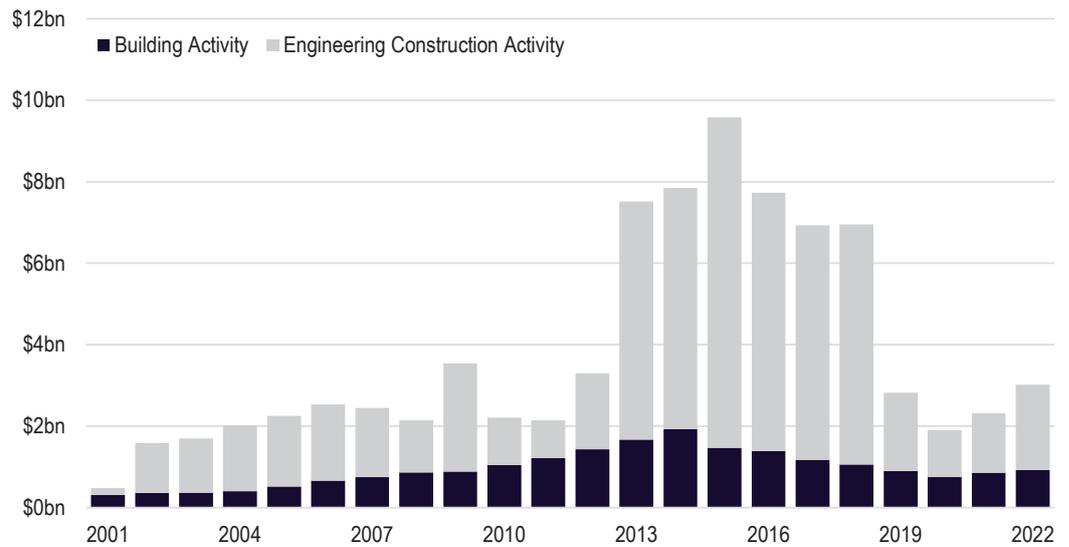
The construction industry is both a major contributor to the Northern Territory economy through the activity it supports and the people it employs, and is also a critical enabler for other industries through its role in the construction of major investment and capacity-enabling projects. As such, the strength of the construction industry at any one time is a useful barometer for economic growth in the Northern Territory. In 2021-22, the construction industry was the fifth largest industry in the Northern Territory, accounting for five per cent of total Gross Territory Product and employing a workforce of about 9,400 people.

3.1.1 Construction Activity

As presented in **Figure 3.1**, the historic profile of construction activity in the Northern Territory over the last 20 years reflects the impact of the development of various major projects, including Alcan G3, Blacktip Gas Field, Groote Eylandt Mining Company, McArthur River Mine expansion, Darwin Waterfront Development, Ichthys LNG Project, and the Northern Gas Pipeline.

Total construction activity in the Northern Territory, accounting for both building activity and engineering construction activity, peaked at \$9.58 billion in 2014-15. In this year, building activity accounted for \$1.47 billion of total construction activity and engineering construction accounted for \$8.11 billion of total construction activity. Over the period between 2012-13 and 2017-18, total construction activity in the Northern Territory averaged \$7.76 billion, before recording a sharp decline down to \$2.82 billion in 2018-19. In 2021-22 the Northern Territory recorded total construction activity of \$3.01 billion, bringing total construction activity back above the level recorded in 2018-19.

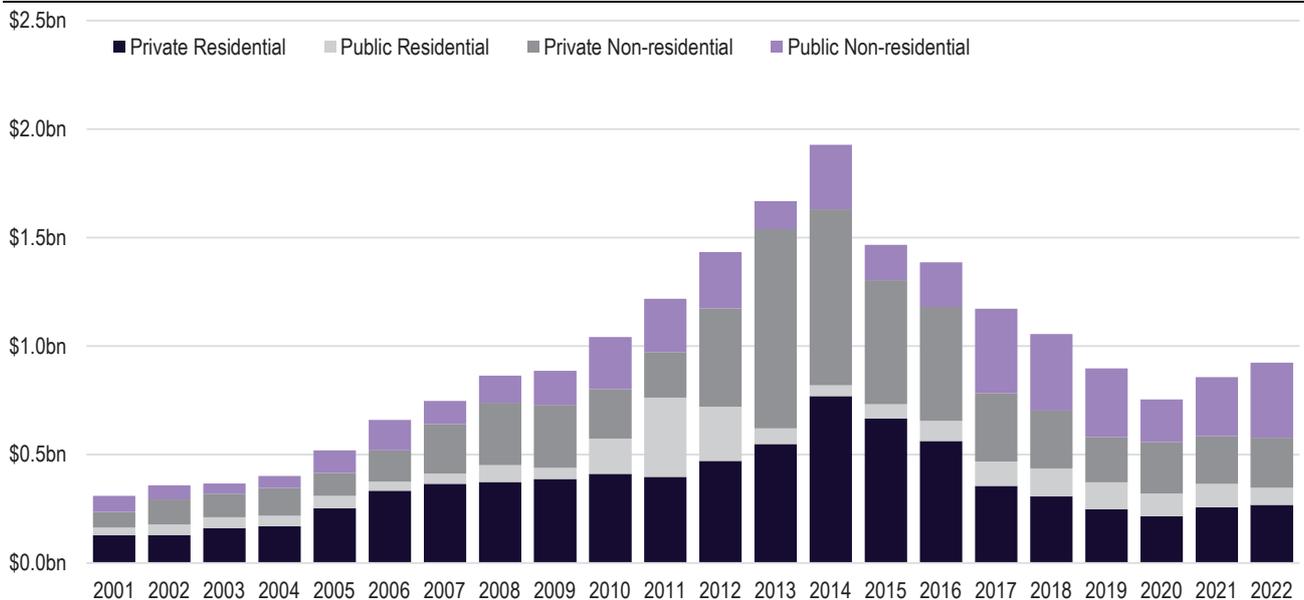
Figure 3.1 Total Construction Activity – Value of Work Done – Financial Year



Source: ABS Cat. 8752.0, Building Activity (Original), ABS Cat. 8762.0, Engineering Construction Activity (Original)

Total building activity (value of work done) in the Northern Territory was \$923 million in 2021-22 (Figure 3.2). The largest proportion of building activity was delivered through public non-residential building work (\$345.5 million), which equated to 37.4 per cent of total building activity. Total building activity in 2021-22 was the highest recorded in the Northern Territory since 2017-18. Supply chain disruptions which impacted the construction industry throughout the second half of 2019-20 and all of 2020-21 have begun to ease allowing construction activity to progress on a back log of work created due to increased demand during COVID-19.

Figure 3.2 Building Activity – Value of Building Work Done by Sector – Financial Year



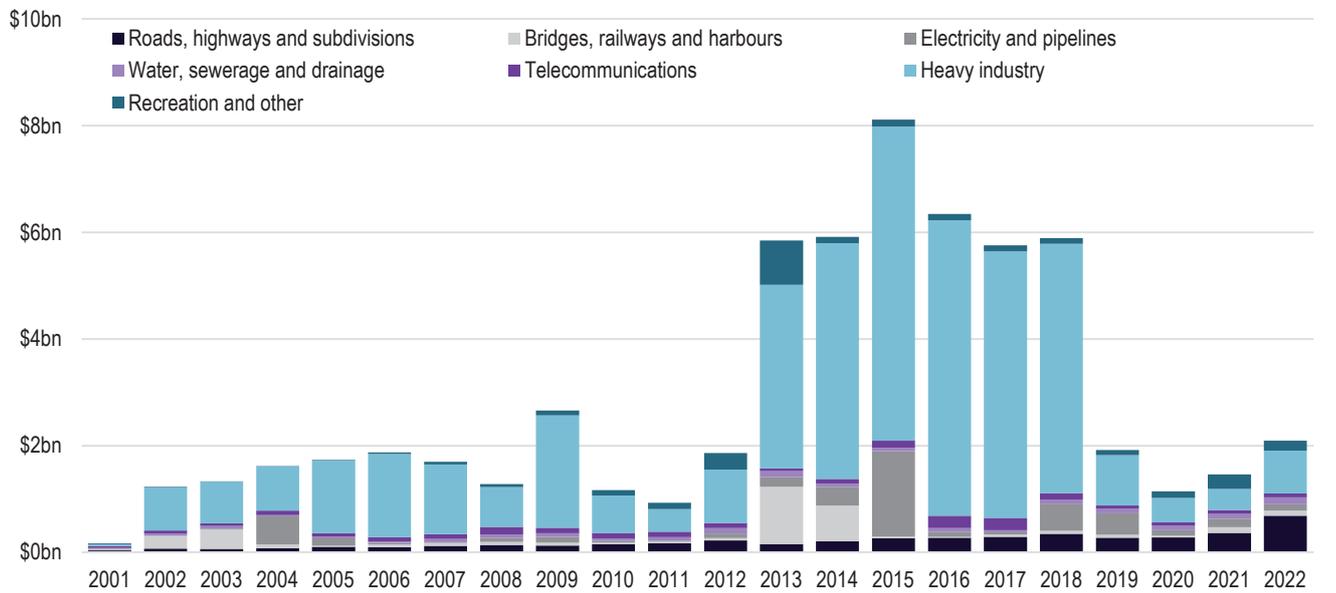
Source: ABS Cat. 8752.0, Building Activity (Original)

Total engineering construction activity in the Northern Territory was \$2.09 billion in 2021-22 (Figure 3.3). The top three sectors within engineering construction activity for 2021-22 were heavy industry (\$805 million, 38.5 per cent), roads, highways and subdivisions (\$687 million, 32.9 per cent), and recreation and other (\$183 million, 8.7 per cent). While engineering construction activity

in the Northern Territory has recorded a strong recovery from 2019-20 when it was recorded at only \$1.14 billion, it remains significantly below levels recorded between 2012-13 and 2017-18 when annual engineering construction activity averaged \$6.31 billion in the Northern Territory.

The Ichthys LNG Project had a significant impact on stimulating engineering construction activity in the Northern Territory and is profiled as a case study in **Section 3.2**.

Figure 3.3 Engineering Construction Activity – Value of Work Done by Sector – Financial Year

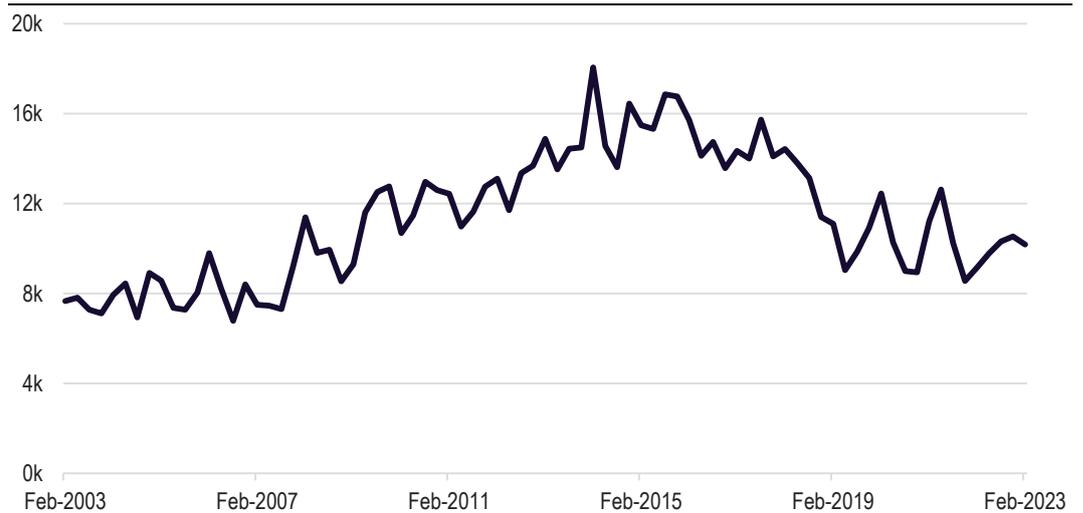


Source: ABS Cat. 8762.0, Engineering Construction Activity (Original)

3.1.2 Construction Workforce

As of February 2023, there were approximately 10,180 people employed in the construction industry in the Northern Territory (**Figure 3.4**), of which approximately 90.6 per cent are employed full-time and the remaining 9.4 per cent in a part-time capacity. The construction workforce in the Northern Territory peaked at approximately 18,100 people in February 2014 during the construction of the Ichthys LNG Project before declining over the subsequent period through to November 2021 where it reached as low as approximately 8,600 people. A strong recovery has been recorded since November 2021 where the number of people employed in the construction industry increased by 18.8 per cent in the period to February 2023. The average number of people employed in the construction industry in the Northern Territory over the period between February 2003 and February 2023 was approximately 11,300 people, although this is influenced by the Ichthys LNG project during the early part of last decade.

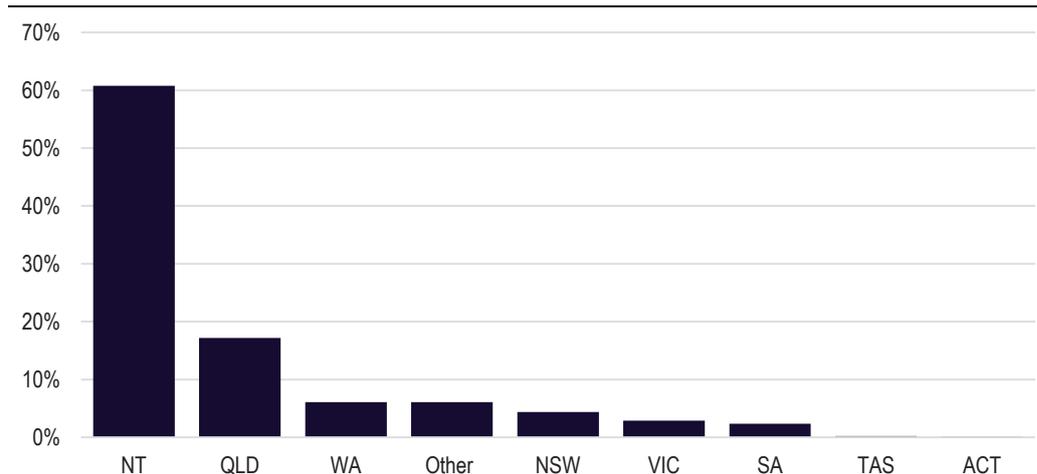
Figure 3.4 Number of People Employed in Construction Industry in the Northern Territory



Source: ABS Cat.6291, Labour Force Detailed

Changes in the size of the construction industry workforce over time have been influenced by interstate migration. **Figure 3.5** presents the residency location of construction workers with a history in the Northern Territory, based on data collected by the Northern Territory’s statutory long service leave fund. This dataset reinforces the surge capacity of the construction industry in the Northern Territory and how it is able to scale up and down based on the level of construction activity in the economy at any one time. Significantly, over a third of construction workers with a history in the Northern Territory, and captured within the database for the long service leave fund, currently reside interstate. The interstate jurisdiction which accounts for the largest share of construction workers is Queensland at 17.2 per cent, followed by Western Australia (6.1 per cent) and New South Wales (4.3 per cent). Additional construction workers may live in these top three states from the category of ‘Other’ (6.1 per cent), acknowledging a portion of this category may also account for workers residing overseas.

Figure 3.5 Residency location of construction workers with a history in the Northern Territory



Source: Northern Territory Statutory Long Service Leave Fund

Box 3.1 Impacts of the Ichthys LNG Project on the construction industry

After a final investment decision in 2012, the labour-intensive construction phase of the Ichthys LNG Project had a transformational impact on the Northern Territory economy, in particular through significant service and supply opportunities for local businesses in the construction industry. Contracts awarded to local businesses support the Northern Territory economy by opening up training and apprenticeship pathways for the Northern Territory workforce, and developing new skills and capabilities that can enhance the Northern Territory as an investment destination. The Project had a disproportionately large impact on overall economic growth during the construction phase, and stimulated significant investment activity in the Northern Territory, not only in relation to the Project itself, but across the economy.

Following a five-year construction phase, offshore production and the first cargo shipment commenced in 2018. At this point, concerns emerged within some areas of the local community that the ongoing economic contribution of Ichthys LNG would be limited, relative to the construction phase. Of particular concern was the perceived risk of significant job losses following the completion of the construction phase, with FIFO workers moving to jobs interstate, and the subsequent loss of their localised spending in the retail and hospitality sectors.

Throughout the construction phase of the Ichthys LNG Project, the number of people employed in the construction industry increased sharply. Employment in other sectors, including the Professional, Scientific and Technical Services industry also increased during this period.

Between February 2012 and August 2017, the total number of people employed in the construction industry in the Northern Territory increased from approximately 13,100 people to 15,700 people, equating to an increase in the size of the workforce for the industry of approximately 20 per cent. The total number of people employed in the construction industry in the Northern Territory peaked at approximately 18,100 people in February 2014.

Following the end of the construction phase of the Ichthys LNG Project, the number of people employed in the construction industry declined sharply. Between August 2017 and May 2019, the total number of people employed in the construction industry in the Northern Territory declined from approximately 15,700 people to 9,000 people, equating to a decline of 42 per cent. While there were offsetting increases in the workforce of other sectors of the economy, the slowdown in construction activity and therefore employment proved to be a significant challenge for the Northern Territory economy.

There have been important learnings for the Northern Territory Government and the construction industry from this experience. However, the experience has demonstrated the capacity and capability of the local construction industry to be able to support the development of such a large, complex and transformational project. This is an important reflection in the context of this study, and the next wave of investment projects being considered in the Northern Territory in the coming years.

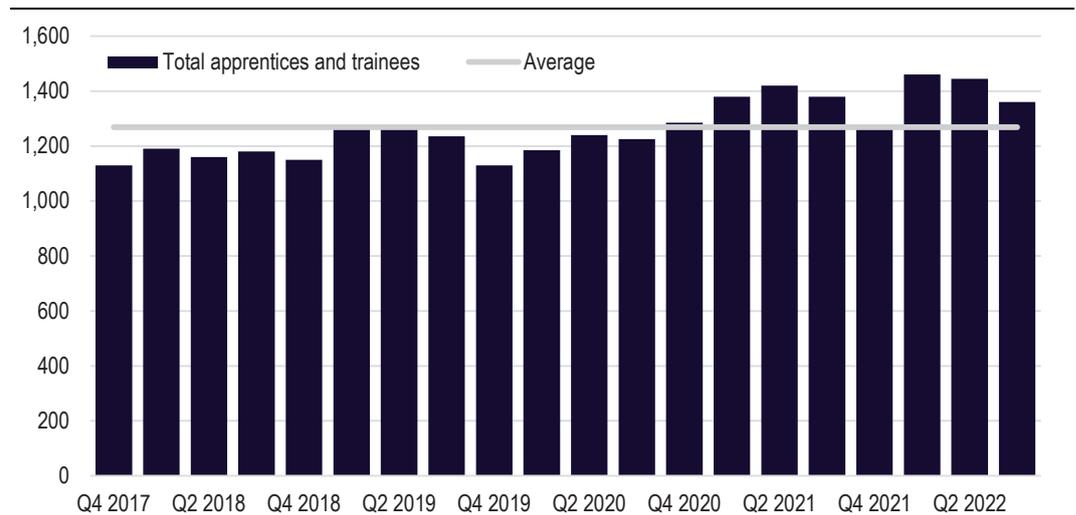
3.1.3 Apprentices and Trainees

Apprentices and trainees in the Northern Territory trained through the Vocational Education and Training (VET) sector have an important role in filling gaps in the construction workforce caused by both the natural attrition of workers from the construction workforce, as well as periods of heightened demand for construction workers as a result of major projects and increased levels of expenditure linked to other major sources such as the NT Government and the Australian Defence Force. There are long-term benefits for businesses in the construction industry to have an ongoing apprenticeship program in place. Aside from the financial support for employers to take on apprentices as a part of the businesses, it provides an opportunity to train and shape a highly skilled team and secure long-term employees.

Strong apprenticeship and trainee numbers, both with respect to commencement and completions, are vital for economic growth in the Northern Territory. Beyond the construction industry, there are many industries in the Northern Territory that rely on apprenticeship programs to provide a sustainable and skilled workforce.

Figure 3.6 presents the number of apprentices and trainees in-training in the Northern Territory over the period between October-December 2017 (Q4) and July-September 2022 (Q3) for construction and related industries. Over this period, the number of apprentices and trainees in-training has remained relatively steady, averaging 1,269 people and peaking at 1,460 people in January-March 2022. In every quarter since October-December 2020, the Northern Territory has recorded above the average apprentices and trainees in-training for the period between Q4 2017 and Q3 2022.

Figure 3.6 Total apprentices and trainees in-training in Northern Territory – Construction and related industries



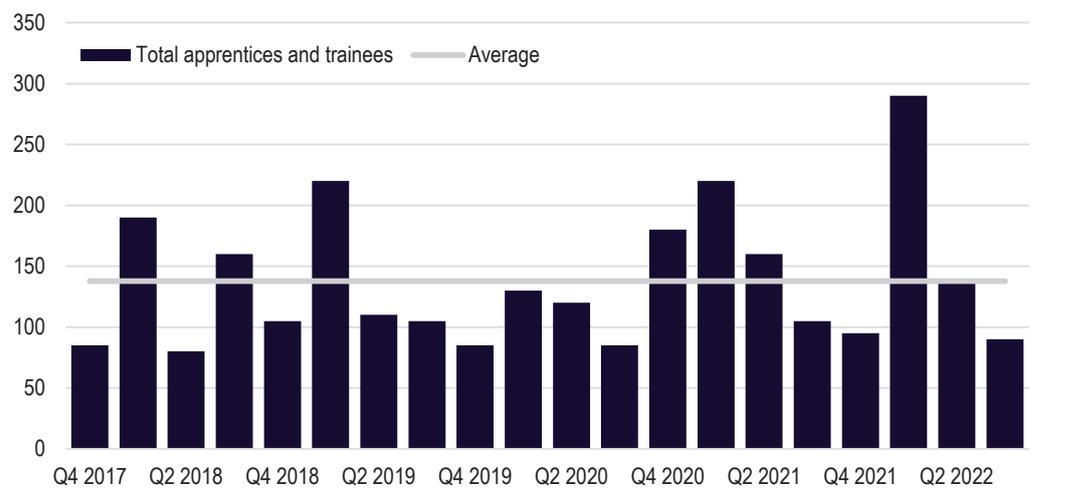
Source: National Centre for Vocational Education Research - Apprentices and trainees (September quarter 2022)

Note: In-training figures reflects the number of active contracts at a given point in time (at the end of the quarter).

Note: This composite measure includes the following categories: Building, Mechanical and industrial engineering and technology, Civil engineering, Electrical and electronic engineering and technology, Maritime engineering and technology, Other engineering and related technologies, and Environmental studies.

Figure 3.7 presents the number of apprentice and trainee commencements in the Northern Territory over the period between October-December 2017 (Q4) and July-September 2022 (Q3) for construction and related industries. Over this period, the number of apprentice and trainee commencements has averaged 138 people, with the quarterly profile showing a seasonal trend of an uplift in commencements in the first quarter of each year. The first quarter of 2022 recorded 290 apprentice and trainee commencements, which was a sharp increase on previous first quarter commencements. Approximately 52 per cent of apprentice and trainee commencements in construction and related industries in the first quarter of 2022 were in the category of ‘Electrical and electronic engineering and technology’, while approximately 28 per cent fell within the ‘Building’ trades category.

Figure 3.7 Total apprentice and trainee commencements in Northern Territory – Construction and related industries



Source: National Centre for Vocational Education Research – Apprentices and trainees (September quarter 2022)

Note: Composite measure includes the following categories: Building, Mechanical and industrial engineering and technology, Civil engineering, Electrical and electronic engineering and technology, Other engineering and related technologies, Environmental studies.

3.1.4 Capacity of construction industry businesses

The capacity of the Northern Territory to meet the projected demand from defence infrastructure expenditure can also be examined on the basis of annual data releases from the ABS which profile the size of construction industry businesses, with respect to both the number of people employed and turnover size. The recent trends for Northern Territory construction industry businesses, on the basis of both employment and turnover size, for the three-year period between 2019-20 and 2021-22 is presented in **Figure 3.8**.

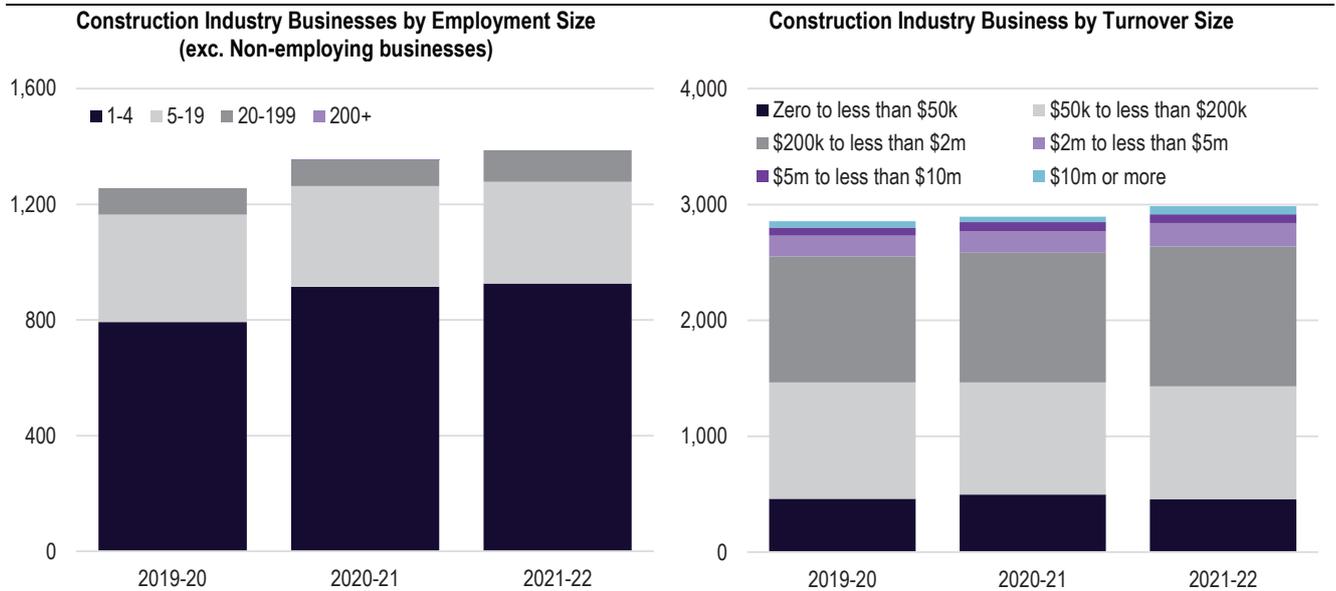
In 2021-22, there were 2,983 construction industry businesses (including non-employing) in the Northern Territory, representing a three per cent year-on-year increase from 2020-21. Accounting for the size of businesses, approximately 53.5 per cent of total construction industry businesses are non-employing businesses (1,596 businesses), followed by 31 per cent with 1-4 employees (926 businesses), 11.8 per cent with 5-19 employees (353 businesses) and 3.7 per cent with 20-199 employees (109 businesses). Business counts data from the ABS indicated for 2021-22 there were no construction industry business in the Northern Territory employing more than 200 people, a decline from the two businesses recorded in 2020-21.

Excluding non-employing businesses, there were 1,387 construction industry businesses in the Northern Territory in 2021-22. The number of construction industry businesses, excluding non-employing businesses, has increased by 10.4 per cent since 2019-20. In addition, over the same period, the number of construction industry businesses with 20-199 employees has increased by 18.5 per cent.

When assessed from a turnover perspective, approximately 40.4 per cent of construction industry businesses in the Northern Territory in 2021-22 had turnover of between \$200,000 and \$2 million, and approximately 11.7 per cent of construction industry businesses had turnover greater than \$2 million. Of this, there were 71 construction industry businesses (2.4 per cent of total construction industry businesses in the Northern Territory) with turnover greater than \$10 million. The number of construction industry businesses with turnover greater than \$10 million increased by 31.5 per cent over two years from the 54 businesses reported in 2019-20.

The data presented in **Figure 3.8** highlights the extent to which the capacity of construction industry businesses in the Northern Territory has strengthened over the past three years, through growth in the overall number of employing businesses, the number of medium-size businesses of 20-199 employees and the number of businesses with turnover exceeding \$10 million. This analysis, specifically in relation to trends in employment size, also highlights the extent to which construction industry businesses in the Northern Territory are building capacity to manage administrative and contractual tasks associated with major work programs.

Figure 3.8 Construction Industry Business Capacity in the Northern Territory



Source: ABS Cat. 8165 Counts of Australian Businesses

It is critical that assessing the capacity of construction industry businesses, specifically in relation to meeting the demand from defence infrastructure expenditure, also gives consideration to the alignment between the specialisations of construction industry businesses in the Northern Territory and the scope of works in the investment pipeline related to the defence industry.

This aspect to the overall capacity of construction industry businesses was assessed previously in a 2019 study commissioned by the NT Government and completed by ICN NT which found there were approximately 940 businesses located in the Northern Territory that were capable against 85 scopes of work analysed, including many with previous experience meeting key Defence requirements.⁷ The 85 scope of works included in the analysis sat within the four categories of Site Construction, Logistics and Services, Site Works and Landscaping, and Design, Engineering and Management. In addition, the Northern Territory construction industry was found to have high capabilities in 61 of the 85 scopes.

This analysis has not been updated for the purposes of this study. However, the data presented in **Figure 3.8** which indicates growth of 10.4 per cent in the overall number of non-employing construction industry businesses in the Northern Territory since 2019-20, would indicate a significant shift in the capacity of construction industry businesses against the same 85 scopes of works previously assessed would be unlikely were this analysis to be repeated for the current construction industry (as of June 2023).

Involvement by construction industry businesses in Defence contracts requires local industry to comply with Federal rules and processes. The Northern Territory Budget 2022-23 states that

⁷ NT Government, ICN NT: Statement of Capacity – Defence Construction Industry in the Northern Territory

nationwide local industry participation in defence infrastructure projects is sitting at 75 per cent, while in the Northern Territory local industry participation of 82 per cent (as at late 2021) has been achieved.

It is understood by ACIL Allen that local capability plans (in particular those stemming from the release of the Local Industry Participation Policy in 2017) and Indigenous procurement targets set by the Department of Defence have helped to see an uptake in Northern Territory businesses securing work packages on defence projects.

Key Finding 7 Importance of the construction industry to the Northern Territory economy

The construction industry is both a major contributor to the Northern Territory economy through the activity it supports and the people it employs, and is also a critical enabler for other industries through its role in the construction of major investment and capacity-enabling projects. Although well below the peaks in construction activity during the Ichthys LNG-led construction boom last decade, indicators suggest that activity is increasing.

While the industry continues to invest in training apprentices and trainees, there will be a need to supplement the local construction industry workforce with workers from outside the Territory as activity increases.

The capacity of construction industry businesses in the Northern Territory has strengthened over the past three years, through growth in the overall number of employing businesses, the number of medium-size businesses of 20-199 employees and the number of businesses with turnover exceeding \$10 million.

3.2 Construction workforce demand and supply analysis

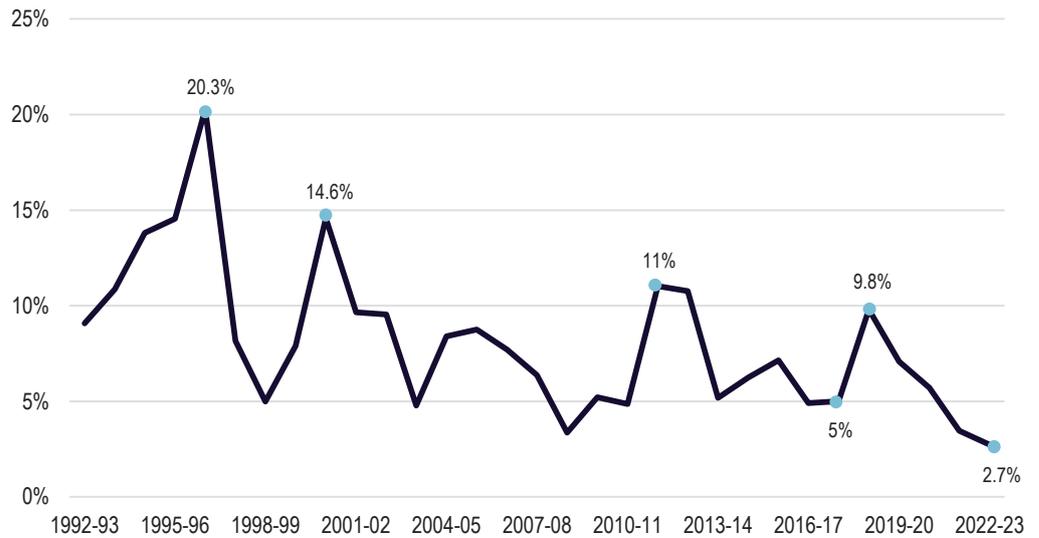
For the purposes of this study, ACIL Allen has undertaken additional quantitative analysis to estimate the level of demand and supply for construction workers in the Northern Territory.

To estimate the level of demand for construction workers, ACIL Allen has used information sourced from the Australian Bureau of Statistics to derive an estimate of the amount of workers in the construction industry (as a proportion of the construction industry labour force) not employed. Through this analysis, ACIL Allen has estimated the construction industry unemployment rate in the Northern Territory since 1992-93. This analysis is presented in **Figure 3.9**.

Based on this analysis, ACIL Allen estimates the Northern Territory construction industry unemployment rate was 2.7 per cent in 2022-23, which is the lowest level recorded over the period since 1992-93, and significantly below the long term average construction industry unemployment rate of 8.1 per cent. This long-term average may be considered a “natural rate of unemployment” for the industry, which is where unemployment reflects only frictional and structural unemployment with no unemployment associated with the business cycle.

The current unemployment rate in the industry is also significantly below the rate of unemployment in the industry recorded at the end of the construction phase of the Ichthys LNG Project of five per cent in 2017-18. The construction activity cycles recorded over the preceding years in the Northern Territory, resulted in the construction industry unemployment rate peaking at 11 per cent in 2011-12, 14.6 per cent in 2000-01, and was as high as 20.3 per cent in 1996-97. This analysis helps to demonstrate the historically high level of demand that currently exists for workers typically employed in the construction industry. Significantly, this level of demand comes at a time when the pipeline of infrastructure projects in the Northern Territory has never been higher.

Figure 3.9 Northern Territory Construction Industry Unemployment Rate

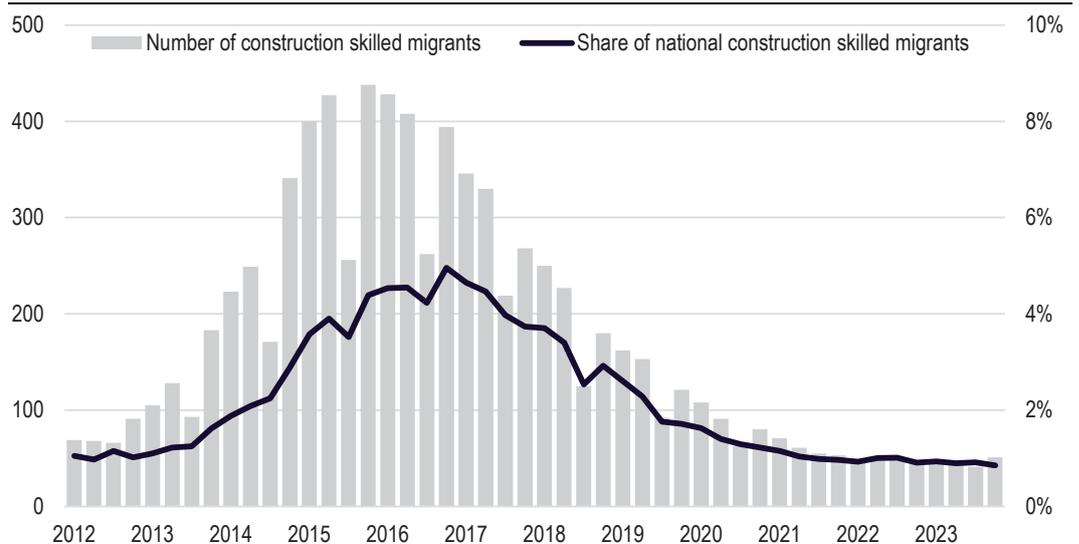


Source: ACIL Allen, from Australian Bureau of Statistics Quarterly Labour Market Statistics (EQ06)

The tight labour market conditions in the Northern Territory construction industry reflects the challenges the industry has confronted in recent years in being able to source workers from outside of the Territory.

Figure 3.10 presents the number of active skilled migrants who were originally sponsored by a business in the construction industry in the Northern Territory. As of March 2023, there were 51 active construction skilled migrants in the Northern Territory, which equated to just 0.9 per cent of total construction skilled migrants at a national level. The Northern Territory's share of national construction skilled migrants peaked at five per cent in March 2016, before steadily declining over the following period to a share of one per cent by September 2020. Since September 2020, the Northern Territory's share of national construction skilled migrants has remained at that level.

Figure 3.10 Active Construction Skilled Migrants in Northern Territory

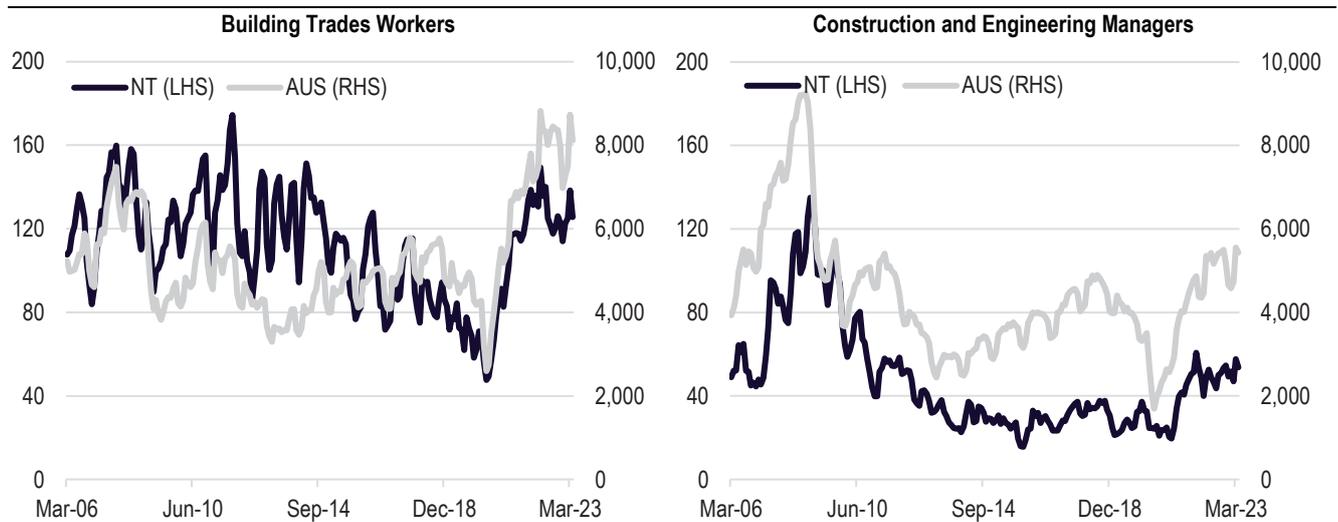


Source: Department of Home Affairs Skilled Vacancies Database (March 2023 release)

Over the past three years, the Northern Territory has recorded periods where there has been a steep rise in skilled vacancies for Building Trades Workers and Construction and Engineering

Managers, in line with trends recorded at a national level (**Figure 3.11**). The Internet Vacancy Index (IVI) is a monthly count of online job advertisements compiled by Jobs and Skills Australia.

Figure 3.11 Northern Territory – Number of Skilled Vacancies in the Construction Industry



Source: Jobs and Skills Australia – Internet Vacancies – ANZSCO4 Occupations (3 month average)

Note: Building Trades Workers consists of Bricklayers and Stonemasons, Carpenters and Joiners, Floor Finishers, Painting Trades Workers, Glaziers, Plasterers, Roof Tilers, Wall and Floor Tilers, Plumbers, Electricians, Airconditioning and Refrigeration Mechanics, Electrical Distribution Trades Workers, Electronics Trades Workers, and Telecommunications Trades Workers.

Over the period from May 2020 to March 2022, vacancies for Building Trades Workers increased from 48 to 149, a more than three-fold increase. This increase brought vacancies for Building Trades Workers in line with levels last recorded in the first half of 2014. Since March 2022, vacancies for Building Trades Workers have stabilised, reaching 126 vacancies in the most recent reporting period of April 2023.

Over the period from December 2020 to November 2021, vacancies for Construction and Engineering Managers increased from 20 to 61, an approximate three-fold increase. Since November 2021, similar to Building Trades Workers, vacancies for Construction and Engineering Managers have stabilised, reaching 54 vacancies in the most recent reporting period of April 2023.

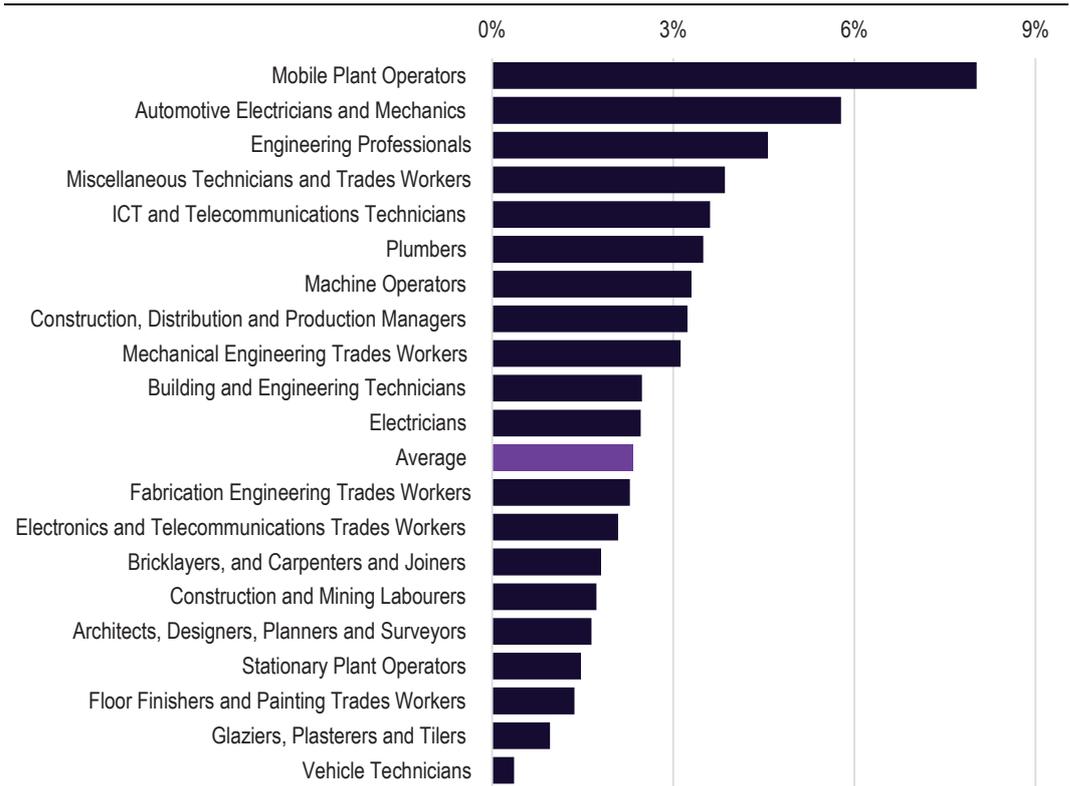
The construction industry did not rank in the top five industries supported through a skilled migration pathway to the Northern Territory in 2021-22.⁸ The top five industries was made up of health care and social assistance (20 per cent), personal and other services⁹ (16 per cent), accommodation and food services (14 per cent), retail trade (10 per cent), and education and training (7 per cent).

In order to determine the level of skill shortages in specific construction industry occupations, ACIL Allen has extended on the analysis in **Figure 3.11** to consider the number of skilled vacancies for an occupation as a share of the number of people currently employed in that particular occupation in the Northern Territory (**Figure 3.12**). The top five occupations displaying the strongest level of demand relative to the number of people currently employed, and with the strongest link to the type of works to be completed as a result of major defence infrastructure projects, are mobile plant operators (eight per cent), engineering professionals (4.6 per cent), miscellaneous technicians and trades workers (3.9 per cent), ICT and telecommunications technicians (3.6 per cent) and machine operators (3.3 per cent).

⁸ Skilling the Territory Investment Plan 2022-23 – What we have achieved

⁹ Comprises services such as repair and maintenance, hairdressing and beauty services that are not capture in other categories.

Figure 3.12 Occupation-specific vacancy rates in the Northern Territory



Source: ACIL Allen, from Australian Bureau of Statistics Quarterly Labour Market Statistics (EQ08), Jobs and Skills Australia Internet Vacancy Index

Key Finding 8 Construction industry workforce demand analysis

Northern Territory’s construction industry is currently experiencing the tightest labour market conditions on record, with ACIL Allen estimating a construction industry unemployment rate of just 2.7 per cent in 2022-23. Tight labour market conditions are a reflection of both rising demand for construction workers, and constrained supply stemming from lower levels of skilled migrants since the end of the COVID-19 pandemic.

ACIL Allen’s analysis has found that skilled vacancies exist across a number of key occupations, with the numbers proportionately higher for mobile plant operators, engineering professionals, miscellaneous technicians and trades workers, ICT and telecommunications technicians, and machine operators.

The analysis also shows, however, that the construction industry has shown the capacity and capability to be able to adjust to the needs of the broader economy during peak investment cycles. This reflects the ability for the industry to be able to source skilled construction industry workers from other parts of Australia, and overseas. This points to the need for governments to address the barriers to labour market mobility to assist the construction industry in being able to scale up its workforce to meet the future needs of the defence industry, government and the other industries.

Impact of Future Defence
Projects on the Northern
Territory Economy and Industry



Approach to Estimating Economic Impacts

4

This section outlines the modelling methodology and assumptions adopted by ACIL Allen to assess the capacity of the NT construction industry to undertake work on major capital projects associated with the Defence Infrastructure Program.

4.1 Modelling Framework

ACIL Allen has made use of a bespoke economic and labour demand modelling framework to assess the economic and employment impacts of the proposed Defence Infrastructure Program on the Northern Territory. The framework has been developed as an extension of ACIL Allen's industry-leading Input-Output modelling toolkit, through the addition of a comprehensive and contemporary estimate of the relationship between economic activity and labour market outcomes.

The framework is based on the development of a comprehensive perspective on the future outlook for construction projects in the Northern Territory. ACIL Allen has sourced information on three streams of major projects, including:

- The Defence Infrastructure Program, in line with the discussion presented in **Section 4.2.1**. This presents the total value of defence infrastructure projects in the Northern Territory. Additional assumptions are made with respect to how much local content will be generated from the projects.
- Public sector infrastructure, in line with the reported public sector infrastructure program initiated and delivered by the Northern Territory Government. This is discussed in **Section 4.2.4**.
- Major infrastructure projects, in line with the major projects outlook prepared by the Northern Territory Government. This represents expenditure establishing major private sector projects in the Northern Territory over the assessment period, with some adjustments made to account for uncertainty. This is discussed in **Section 4.2.5**.

The outcomes of the modelling are to present an **unconstrained view** of the economic impact and implications for the Northern Territory's demand for labour. For this reason, ACIL Allen elected to develop this bespoke, Input-Output framework rather than make use of its in-house computable general equilibrium model Tasman Global. Further details are provided on the following page (**Box 4.1**).

The remainder of this section presents the inputs, assumptions and outputs of this modelling. The analysis is presented in terms of its impact on economic output (gross value added) across the Northern Territory, and at an industry level. The results are also then presented in terms of impacts on labour demand, in the context of current conditions and labour supply within the Northern Territory.

Box 4.1 CGE vs IO modelling

ACIL Allen makes use of one of two modelling frameworks / tools to complete economic impact assessments: Tasman Global (a computable general equilibrium model owned and developed by ACIL Allen) and a detailed Input Output modelling framework, developed in-house.

Tasman Global is generally the preferred tool as it represents a more realistic and practical framework to analyse real world economic outcomes. This is because the framework is based on a series of real-world constraints on the availability of resources, the cost of capital, migration, exchange rates and public finances. By contrast, the Input Output framework does not consider resource constraints.

It is for this reason an Input Output framework is more appropriate for this task. The intent of the analysis is to identify the resources required to deliver on a given program of work. Therefore, we are using the tool to identify **unconstrained** demand for labour and other resources. The Input Output model is able to do this, while Tasman Global will seek to adjust the availability of resources for alternative uses, resulting in a **constrained** demand outcome.

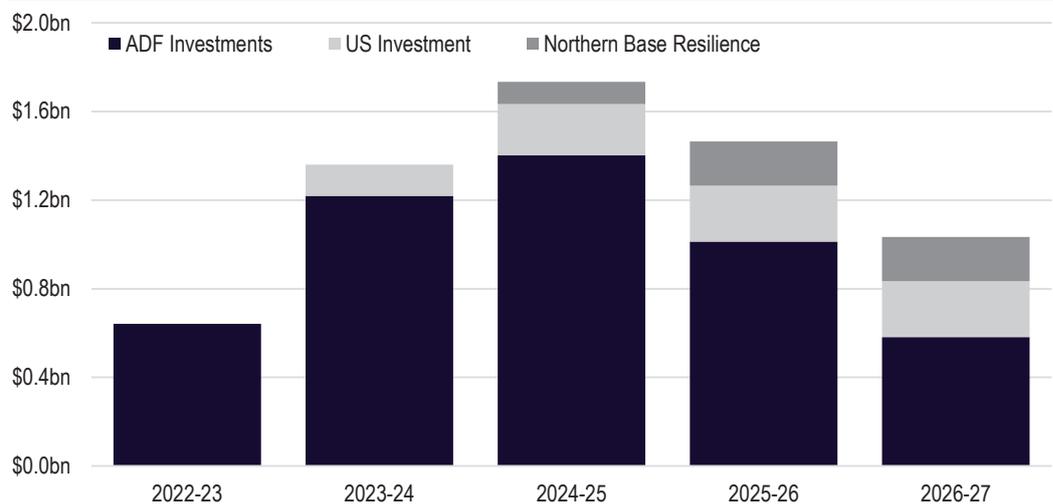
Source: ACIL Allen

4.2 Modelling inputs and assumptions

4.2.1 Defence Project Expenditure Projections

The list of major defence projects in the Northern Territory that form the basis of the modelling inputs are split into the three categories of ADF Investments, US Investments and Northern Base Resilience. Across all three categories, total expenditure on defence projects in the Northern Territory over the period from 2022-23 to 2026-27 equates to **\$6.23 billion**. As presented in **Figure 4.1**, the largest share of this expenditure is associated with ADF Investments (\$4.86 billion), followed by US Investment (\$876 million) and Northern Base Resilience (\$500 million).

Figure 4.1 Total expenditure on Defence projects in the Northern Territory



Source: ACIL Allen

The list of ADF Investments was provided to ACIL Allen by the Department of Defence in March 2023. The five-year expenditure breakdown for each project from 2022-23 to 2026-27 was contained within this data submission from the Department of Defence. Minor revisions for expenditure allocated to some ADF projects were subsequently made by ACIL Allen based on budget data contained within a presentation in May 2023 from the Department of Defence at the

ADM Northern Australia Defence Summit.¹⁰, as well as expenditure data in the Department of Defence Portfolio Budget Statement 2023-24.¹¹

The list of projects in the US Investment and Northern Base Resilience categories, as well as the five-year expenditure breakdown for each project, was provided to ACIL Allen by Master Builders NT in April 2023.

Based on guidance from Master Builders NT, it is expected that the US Defence Budget due in September 2023 will identify approximately US\$2 billion for projects across Northern Australia (equating to approximately A\$2.9 billion). As there is considerable uncertainty about the amount, timing, and location of those investments (may include locations outside of Australia), Master Builders NT provided a five-year expenditure projection for US Investments using known projects, and projections beyond the timetable of those known projects. Based on the anticipated expenditure for projects in Northern Australia expected to be included in the upcoming US Defence Budget, ACIL Allen considers the estimated expenditure for US Investments included within the modelling period for this study to be conservative.

With respect to Northern Base Resilience, Master Builders NT have advised that the Department of Defence has previously informally indicated that the allocation for base resilience would be \$8 billion, split between Phase 1 (\$1 billion) and Phase 2 (\$7 billion). Master Builders NT have also advised there are potentially at least 10 bases across Northern Australia that might be 'hardened' and there will be a lag in timing given the need to design and tender for works. Accounting for these considerations, Master Builders NT provided the modelling assumption that works may begin in 2024-25 and that only Phase 1 expenditure would be material to this study. Based on the scale of the Phase 2 investment and the strategic importance of investment in northern bases laid out by the Defence Strategic Review, ACIL Allen considers the estimated expenditure for Northern Base Resilience included within the modelling period for this study to be conservative.

4.2.2 Materials and Labour Allocation and Source of Supply Assumptions

As outlined in **Table 4.1**, the following modelling assumptions adopted by ACIL Allen with respect to the allocation of expenditure for defence projects in the three headline categories were provided by Master Builders NT:

- the percentage allocation of materials and labour expenditure for vertical and horizontal construction; and
- the percentage allocation for the source of supply for materials and labour expenditure for both vertical and horizontal construction.

Master Builders NT also provided to ACIL Allen an estimated percentage allocation for the split of total capital expenditure for each defence project between vertical and horizontal construction.

¹⁰ Department of Defence: Current and Future Defence Infrastructure Projects in Northern Australia (May 2023) – Presentation by Air Commodore Ron Tilley at ADM Northern Australia Defence Summit.

¹¹ Federal Budget 2023-24: Department of Defence Portfolio Budget Statement – Appendix D Enterprise Estate and Infrastructure (p.134-153)

Table 4.1 Materials and Labour Allocation and Source of Supply Assumptions

Assumption	ADF Investments	US Investment	Northern Base Resilience
Vertical Construction			
Materials	55%	55%	55%
Labour	45%	45%	45%
Horizontal Construction			
Materials	75%	75%	75%
Labour	25%	25%	25%
Vertical Construction – Materials			
NT	20%	20%	20%
AUS	40%	40%	40%
Overseas	40%	40%	40%
Vertical Construction – Labour			
NT	90%	90%	90%
AUS	5%	5%	5%
Overseas	5%	5%	5%
Horizontal Construction – Materials			
NT	95%	90%	90%
AUS	2.5%	5%	5%
Overseas	2.5%	5%	5%
Horizontal Construction – Labour			
NT	95%	90%	90%
AUS	2.5%	5%	5%
Overseas	2.5%	5%	5%

Source: Master Builders NT

4.2.3 Work Package Allocation for Vertical and Horizontal Expenditure

In order to determine modelling assumptions for the work package allocation for vertical and horizontal expenditure on defence projects, ACIL Allen reviewed work package data and tender documentation provided by ICN NT for a selection of completed and under construction major defence projects located in the Northern Territory. The defence projects reviewed by ACIL Allen consisted of the Larrakeyah Defence Precinct Redevelopment Program, RAAF Base Tindal Redevelopment Stage 6, USFPI Northern Territory Training Areas and Ranges Upgrades, New Air Combat Capability Facilities Project, RAAF Darwin AIR7000 Phase 2B Package 1 (Hangar Facilities) and RAAF Darwin AIR7000 Phase 2B Package 4 (Pavement & Infrastructure).

Based on the work package data provided by ICN NT, ACIL Allen classified each individual work package as either vertical or horizontal expenditure, and subsequently determined a set of work package categories for vertical and horizontal expenditure. Using these work package categories, ACIL Allen was able to estimate a work package expenditure percentage breakdown for vertical and horizontal expenditure. Critically, the selection of defence projects included in the ICN NT data submission covered a wide range of project types including works on army barracks, major RAAF base and air field upgrades, training area upgrades, hangar facilities at a RAAF base and infrastructure for new aircraft capability at a RAAF base.

Following the completion of analysis on the ICN NT data submission, a customised work package allocation for vertical and horizontal expenditure was determined by ACIL Allen for each defence project included in the five-year modelling period. This allocation was determined based on the description of each project provided by the Department of Defence and any information that could be sourced on the projects from publicly available sources. Importantly, the analysis completed by ACIL Allen on the ICN NT data provided a reference point (across a range of defence project types) for determining the percentage breakdown to allocate expenditure across the work package categories.

The work package categories used by ACIL Allen for the allocation of vertical and horizontal expenditure are outlined below.

Vertical Expenditure – Work Package Categories

- Demolition and site works
- Utility and emergency infrastructure connections
- Building construction
- Internal fit-out
- Furniture, Fixtures & Equipment
- Landscaping

Horizontal Expenditure – Work Package Categories

- Surveying and Design
- Utility infrastructure
- Earthworks and Landscaping
- Environmental services
- Road works
- Aviation civil works
- Liquid fuel civil works
- Marine civil works
- Ammunition civil works (works associated with firing ranges)

4.2.4 Public Capital Works Expenditure Assumptions

Table 4.2 presents the breakdown of projected public infrastructure investment for the general government sector over the period between 2022-23 and 2026-27. Total expenditure is distributed across the major government sector categories at the same proportion share across the projection period, with the majority accounted for by transport (55 per cent) and housing and community amenities (20.7 per cent).

The projections outlined in **Table 4.2** are the total expenditure associated with public infrastructure investment for the general government sector, as opposed to the amount sourced from the Northern Territory.

Table 4.2 General government sector – Total infrastructure investment (\$m)

	2022-23	2023-24	2024-25	2025-26	2026-27
Total	1,147.0	1,437.0	1,300.0	962.0	863.0
Transport	630.9	790.4	715.0	529.1	474.7
Housing and community amenities	237.4	297.5	269.1	199.1	178.6
Economic affairs	64.2	80.5	72.8	53.9	48.3
Health	64.2	80.5	72.8	53.9	48.3
Recreation, culture and religion	64.2	80.5	72.8	53.9	48.3
Public order and safety	42.4	53.2	48.1	35.6	31.9
Environmental protection	18.4	23.0	20.8	15.4	13.8
Education	12.6	15.8	14.3	10.6	9.5
Social protection	10.3	12.9	11.7	8.7	7.8
General public services	2.3	2.9	2.6	1.9	1.7

Source (Total general government sector expenditure): NT Budget 2023-24 – Budget Paper No.2 (p.41), 2022-23 data sourced from same table in 2022-23 Budget

Source (Expenditure share allocation): NT Budget 2023-24 – Budget Paper No.4 (p.5)

4.2.5 Private Sector Major Project Expenditure Assumptions

Table 4.3 presents the breakdown of projected private sector major project expenditure over the period between 2022-23 and 2026-27. ACIL Allen has assumed private sector major expenditure at a constant level of \$858 million per year, with this expenditure distributed across seven industry categories at a constant percentage share. The top three industry categories this expenditure is allocated to are Energy – Oil and Gas (32.8 per cent), Energy – Other¹² (31.8 per cent) and Minerals (22.4 per cent).

In determining the assumed \$858 million of private sector major project expenditure, ACIL Allen reviewed Investment Territory’s list of priority and committed private sector major projects in the Northern Territory. Accounting for the indicative date of construction and date of operation for each of the major projects listed, ACIL Allen allocated the estimated capital expenditure for each major project across the five-year projection period. This analysis resulted in expenditure of \$858 million in the 2022-23 financial year.

The assumption of \$858 million in annual private sector major project expenditure over the projection period is conservative, in comparison to the total estimated capital expenditure associated with all the private sector major projects in the list provided by Investment Territory (approx. \$34.5 billion). The assumed private sector major project expenditure accounts for a number of the major projects being in the early stage of feasibility assessment processes, as well as the major project list including projects where a final investment decision or the commencement of the construction phase has already been delayed on multiple occasions. The seven industry categories and the percentage allocation of total private sector major project expenditure to these categories was based on analysis by ACIL Allen of Investment Territory’s Investment Portfolio data.

The projections outlined in **Table 4.3** are the total expenditure associated with private sector major projects located in the Northern Territory, as opposed to the amount sourced from the Northern Territory.

¹² The industry category of “Energy – Other” consists primarily of hydrogen projects.

Table 4.3 Private Sector Major Project Expenditure

	2022-23	2023-24	2024-25	2025-26	2026-27
Total	858.0	858.0	858.0	858.0	858.0
Energy – Oil and Gas	281.5	281.5	281.5	281.5	281.5
Energy – Other	272.5	272.5	272.5	272.5	272.5
Minerals	192.0	192.0	192.0	192.0	192.0
Digital Technologies	93.2	93.2	93.2	93.2	93.2
Agribusiness	10.1	10.1	10.1	10.1	10.1
Other	7.0	7.0	7.0	7.0	7.0
Tourism	1.7	1.7	1.7	1.7	1.7

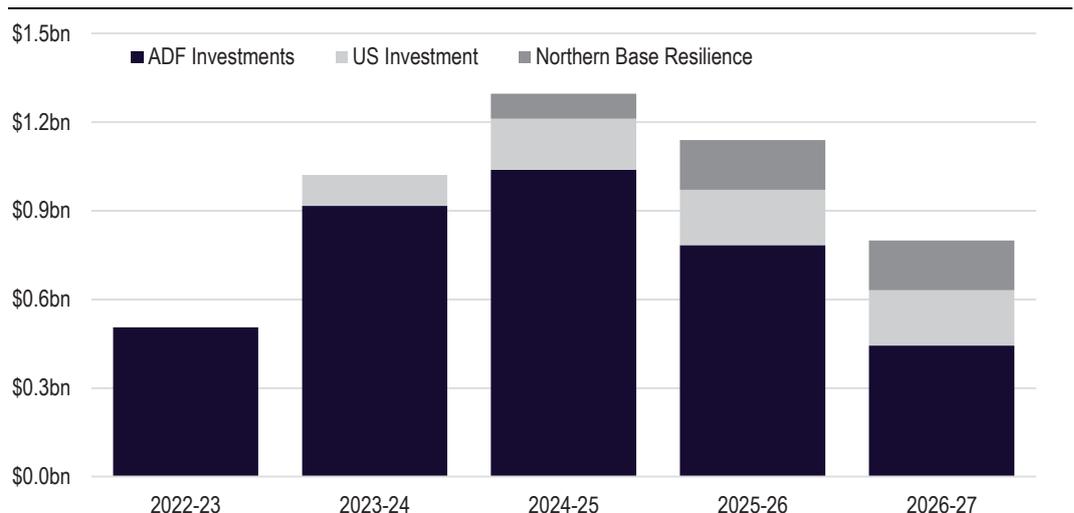
Source: ACIL Allen – Assumed total private sector major project expenditure and percentage allocation to industry categories based on analysis of Investment Territory Investment Portfolio data.

4.3 Modelling Inputs Analysis

This section presents analysis completed by ACIL Allen on the modelling inputs following the application of the modelling assumptions on the total expenditure attributed to defence projects located in the Northern Territory.

Figure 4.2 presents the total expenditure on Defence projects in the Northern Territory that is estimated to be sourced from the Northern Territory. The total expenditure estimated to be sourced from the Northern Territory over the five-year modelling period is **\$4.76 billion**, equating to an average of approximately \$952 million per annum. The total expenditure expected to be sourced from the Northern Territory equates to approximately **76.4 per cent** of the total expenditure attributed to the defence projects located in the Northern Territory that are accounted for in the modelling inputs. There are three consecutive years between 2023-24 and 2025-26 inclusive where total expenditure sourced from the Northern Territory is expected to exceed \$1 billion, peaking at approximately \$1.3 billion in 2024-25.

Figure 4.2 Total NT expenditure on Defence projects in the Northern Territory

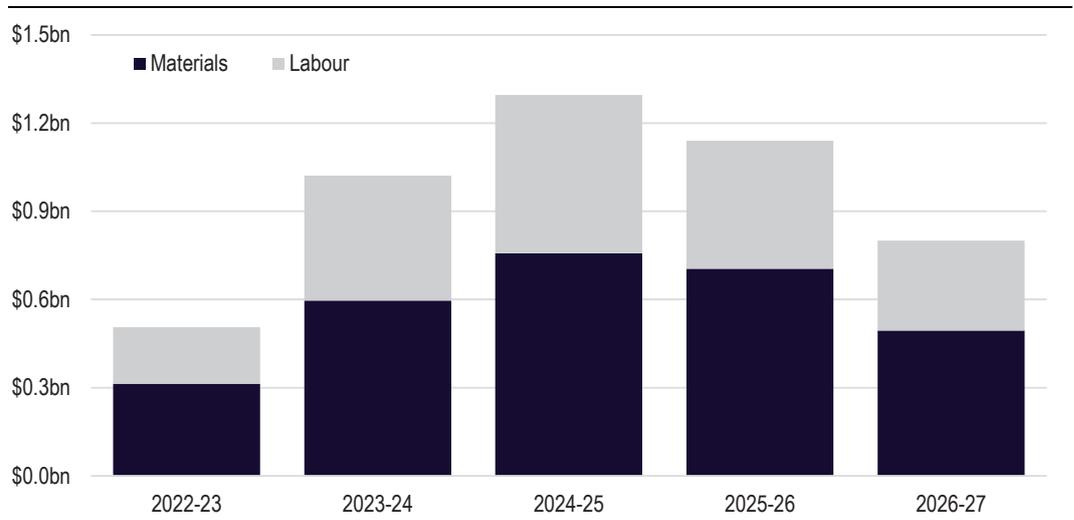


Source: ACIL Allen

Figure 4.3 presents the breakdown between materials and labour expenditure for the total expenditure on Defence projects in the Northern Territory that is estimated to be sourced from the Northern Territory. In total over the modelling period, there is an estimated \$2.87 billion of

expenditure attributed to materials and \$1.9 billion of expenditure attributed to labour, equating to 60.2 per cent and 39.8 per cent of total expenditure respectively.

Figure 4.3 Total NT expenditure on Defence projects in the Northern Territory – Materials and labour expenditure split

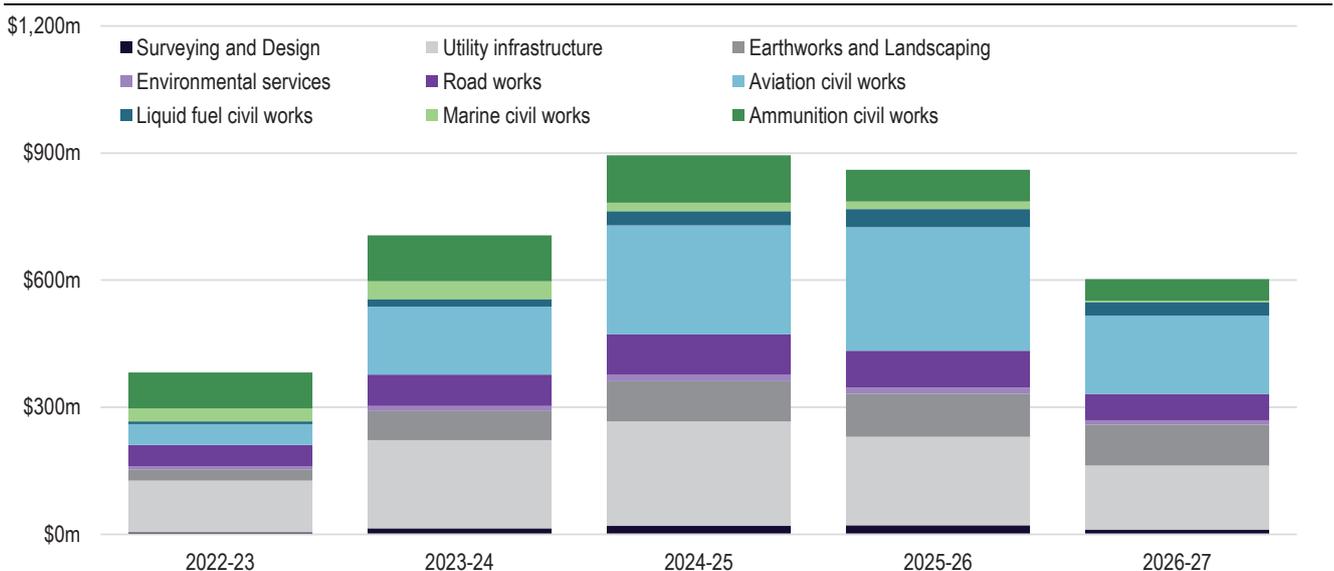


Source: ACIL Allen

Over the modelling period, it is estimated approximately 72.4 per cent (\$3.45 billion) of total expenditure on Defence projects in the Northern Territory that is estimated to be sourced from the Northern Territory will be horizontal expenditure.

Figure 4.4 presents a work package breakdown over the modelling period for horizontal expenditure (materials and labour) sourced from the Northern Territory. The top three largest work package categories for horizontal expenditure over the modelling period are estimated to be aviation civil works (\$943 million, 27.4 per cent), utility infrastructure (\$937 million, 27.2 per cent), and ammunition civil works (\$430 million, 12.5 per cent).

Figure 4.4 Total NT horizontal expenditure on Defence projects in the Northern Territory – Work package breakdown

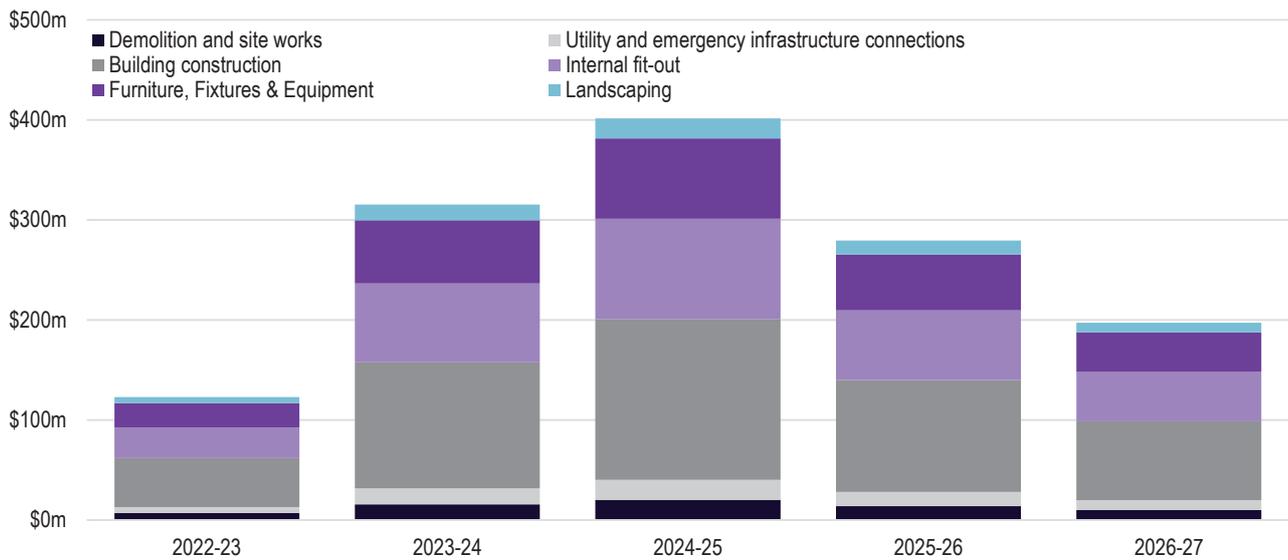


Source: ACIL Allen

Over the modelling period, it is estimated approximately 27.4 per cent (\$1.32 billion) of total expenditure on Defence projects in the Northern Territory that is estimated to be sourced from the Northern Territory will be vertical expenditure.

Figure 4.5 presents a work package breakdown over the modelling period for vertical expenditure (materials and labour) sourced from the Northern Territory. The top three largest work package categories for vertical expenditure over the modelling period are estimated to be building construction (\$526 million, 40 per cent), internal fit-out (\$329 million, 25 per cent) and furniture, fixtures and equipment (\$263 million, 20 per cent).

Figure 4.5 Total NT vertical expenditure on Defence projects in the Northern Territory – Work package breakdown



Source: ACIL Allen

Key Finding 9 Estimated defence industry investment in the Northern Territory, 2022-23 to 2026-27

Based on high level project information supplied by the Department of Defence and the Northern Territory Government, ACIL Allen estimates that the total expenditure on defence projects in the Northern Territory over the period from 2022-23 to 2026-27 equates to \$6.23 billion. Of this amount, ACIL Allen has estimated that \$4.76 billion or 76.4 per cent will be sourced from the Northern Territory, in the form of labour and materials purchased from other industries.

The economic impacts of the projected defence infrastructure investment expenditure will be considered in the context of the projected investment pipeline of the Northern Territory Government and the private sector more broadly over the same period.

Economic Impacts of Defence Infrastructure

5

This section presents the economic modelling results on the impact of the Defence Infrastructure Program on the NT economy, and the capacity of the NT construction industry to meet the future demand from Defence for its services.

5.1 Economic Impact of Defence Infrastructure Expenditure

The results for the economic modelling on the economic impact of defence infrastructure expenditure in the Northern Territory is presented in this section in terms of the projected impact of this expenditure on Gross Value Added, employment and income in the Northern Territory.

Expenditure on materials and labour sourced from the Northern Territory were estimated in the modelling input development phase, and subsequently used as the modelling inputs for the Input Output modelling. As such, the modelling results do not capture the economic impact of defence infrastructure expenditure on projects located in the Northern Territory to the national economy, or at an overall level (i.e. inclusive of overseas economic impact).

5.1.1 Gross Value Added



Gross Value Added (GVA) is an economic measure of the value added an activity or investment makes to an economy in a given period. GVA estimates enable analysis of industry contributions to the Northern Territory economy to be made.

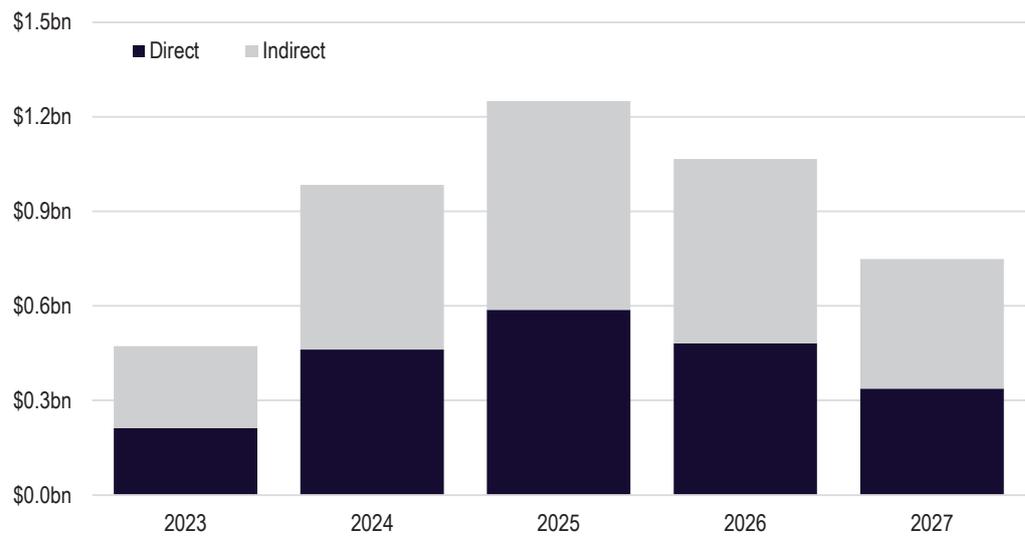
Figure 5.1 presents the economic impact of defence infrastructure expenditure in the Northern Territory. ACIL Allen estimates that the cumulative increase to GVA (direct and indirect) over the five year modelling period is estimated to be \$4.52 billion. Of the total cumulative increase to GVA, ACIL Allen estimates that approximately \$2.08 billion was directly attributable to the defence infrastructure investment, with a further \$2.44 billion in indirect economic benefits realised across the rest of the Northern Territory economy.

Based on the profile of defence infrastructure spending, ACIL Allen has estimated that the economic impact of defence infrastructure to the Northern Territory economy to peak in 2024-25 at \$1.25 billion, with \$587 million is projected to be directly attributable to the investment expenditure, with the remaining \$662 million in indirect benefits that are expected to flow through to Northern Territory economy.

The large indirect benefits realised from the defence infrastructure investments over the five year modelling period reflects the labour intensive nature of construction activity, which generates additional economic impacts as a result of the local spending by construction workers.

It is estimated that for every \$1 of direct economic impacts realised from defence infrastructure investments, there is a further \$1.17 in indirect economic impacts. This implies an economic multiplier of 2.17.

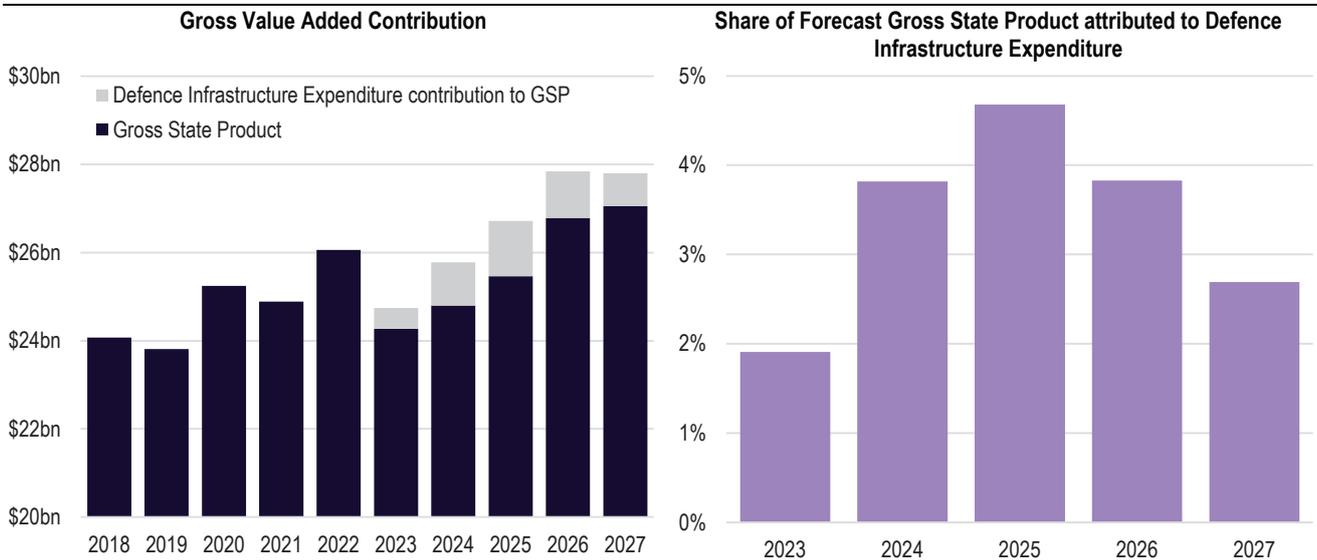
Figure 5.1 Economic Impact of Defence Infrastructure Expenditure – Gross Value Added



Source: ACIL Allen

ACIL Allen has assessed the economic impact of defence infrastructure expenditure in the Northern Territory to GVA in the context of the Northern Territory’s historic and projected Gross State Product (**Figure 5.2**). At peak investment in 2024-25, defence infrastructure expenditure will generate \$1.25 billion, which would account for approximately 4.7 per cent of Gross State Product in that year. ACIL Allen estimates that with the addition of the contribution from defence infrastructure expenditure, Gross State Product will reach \$27.8 billion in 2026-27, exceeding the forecast of \$27.2 billion contained in the NT Budget 2023-24.

Figure 5.2 Defence Infrastructure Expenditure Contribution to Gross State Product (Financial Year)

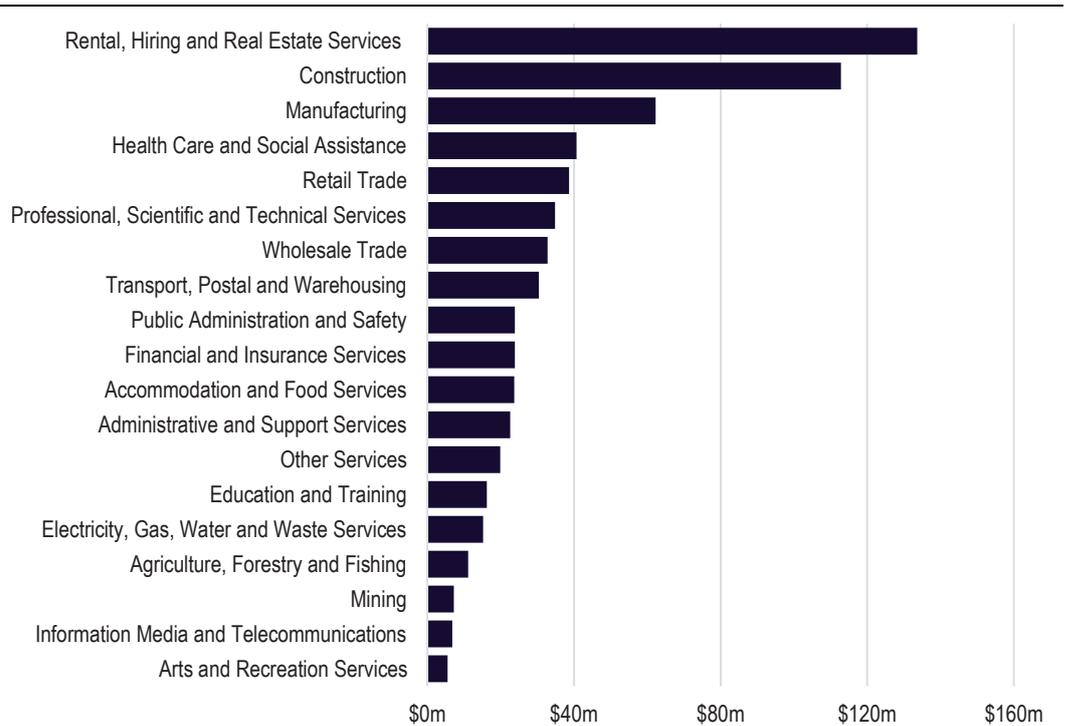


Source: ACIL Allen, NT Budget – NT Economy (p.18)

Note: ACIL Allen has not received data in relation to the forecast NT-sourced expenditure associated with defence infrastructure projects accounted for in the GSP forward estimates by the NT Department of Treasury and Finance. In order to minimise the potential for double counting through the addition of the defence infrastructure expenditure contribution to GSP, ACIL Allen removed estimated NT-sourced expenditure associated with the following four defence infrastructure projects from the GSP forward estimates: RAAF Base Tindal Redevelopment Stage 6 and United States Force Posture Initiative Airfield Works and Associated Infrastructure, Navy Capability Infrastructure Sub-program Offshore Patrol Vessel (OPV) Facilities (SEA 1180 Phase 1), USFPI Northern Territory Training Areas and Ranges Upgrades, and Larrakeyah Defence Precinct Redevelopment Program.

Figure 5.3 presents a breakdown by industry of the contribution to GVA on an indirect basis (supply chain plus consumption induced) made by defence infrastructure expenditure in the Northern Territory in 2024-25. Aside from the additional indirect contribution to the construction industry, the five industries projected to receive the largest indirect contribution from defence infrastructure expenditure in 2024-25 are Rental, Hiring and Real Estate Services (\$133.7 million), Manufacturing (\$63.3 million), Health Care and Social Assistance (\$40.7 million), Retail Trade (\$38.7 million) and Professional, Scientific and Technical Services (\$34.8 million).

Figure 5.3 Economic Impact of Defence Infrastructure Expenditure – Indirect Gross Value Added by Industry – 2024-25



Source: ACIL Allen

Key Finding 10 Economic Impact of Defence Infrastructure Expenditure – Gross Value Added

ACIL Allen estimates that the projected defence infrastructure investment in the Northern Territory will provide a cumulative \$4.5 billion stimulus to the local economy over the five year modelling period. At peak investment in 2024-25, defence infrastructure expenditure will generate \$1.25 billion, which would account for approximately 4.7 per cent of Gross State Product in this year.

5.1.2 Employment



The impact of the projected defence infrastructure investments to employment opportunities for the Northern Territory population is measured through the number of full time equivalent (FTE) jobs directly employed on these projects each year, and indirectly throughout the economy from the resulting expenditure from the projects.

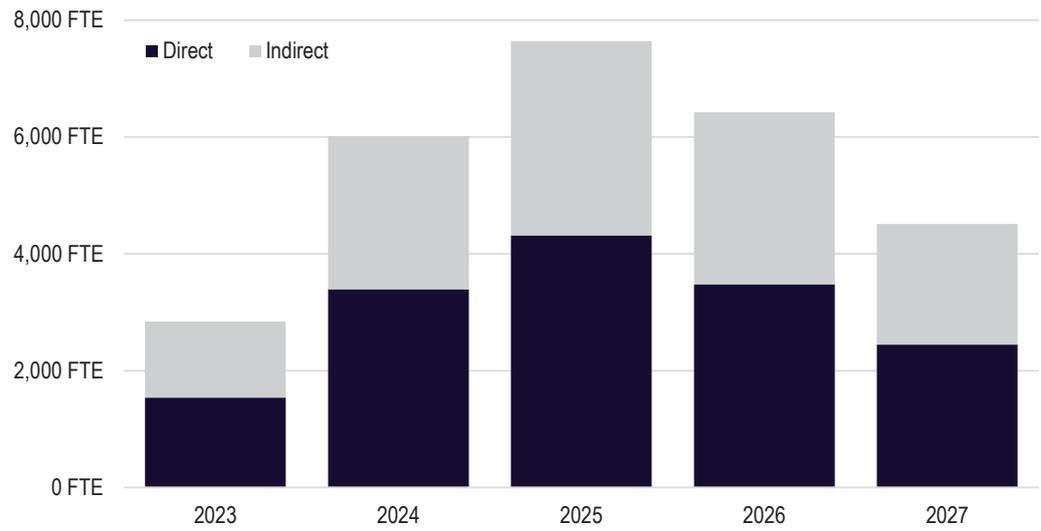
Figure 5.4 presents the economic impact of defence infrastructure expenditure in the Northern Territory to employment. ACIL Allen estimates that the economic impact of defence infrastructure expenditure in the Northern Territory to employment is expected to peak in 2024-25 at 7,640 FTE jobs, of which 4,316 FTE jobs are expected to be directly employed as a result of these

investments. ACIL Allen estimates that a further 3,324 FTE jobs will be created or supported by these investments, by virtue of the additional spending that will result throughout the economy.

To put this level of job creation into perspective, the peak incremental employment impact of 7,640 FTE jobs represents 7.4 per cent of the full time workforce in the Northern Territory in 2021-22, and is almost twice the total number of full time jobs created in that year.

It is estimated that that for every FTE job directly created in the Northern Territory as a result of defence infrastructure expenditure, there are a further 0.8 FTE jobs created or supported across the economy. This implies an employment multiplier of 1.8.

Figure 5.4 Economic Impact of Defence Infrastructure Expenditure – Employment

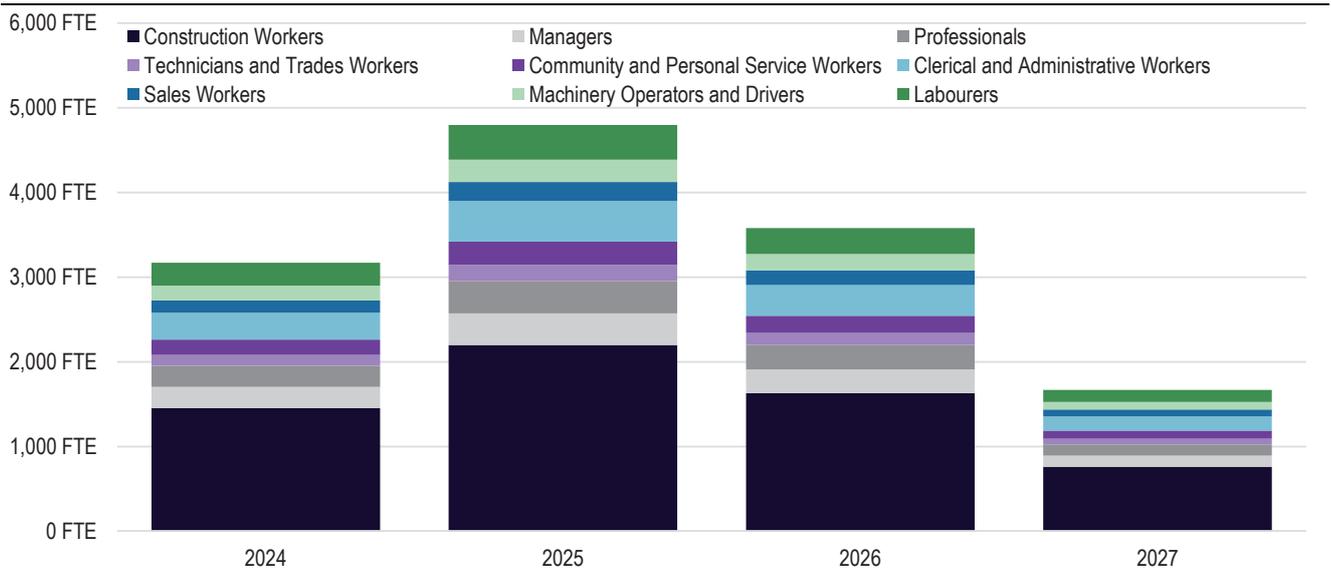


Source: ACIL Allen

For the purposes of this study, ACIL Allen has also projected the employment impacts of the projected defence infrastructure investments by occupation classification, which has been presented in **Figure 5.5** below as incremental jobs over and above 2022-23 levels.

ACIL Allen estimates that the incremental workforce requirement stimulated by defence infrastructure expenditure is projected to peak in 2024-25 at 4,797 FTE jobs. On an occupation category basis, the largest share of the workforce requirement in the peak year of 2024-25 is projected to be construction workers at 45.8 per cent, or 2,198 FTE. Following construction workers, the next three largest categories in the peak year of 2024-25 are projected to be clerical and administrative workers (478 FTE, 10 per cent), labourers (305 FTE, 8.6 per cent) and professionals (381 FTE, 8 per cent).

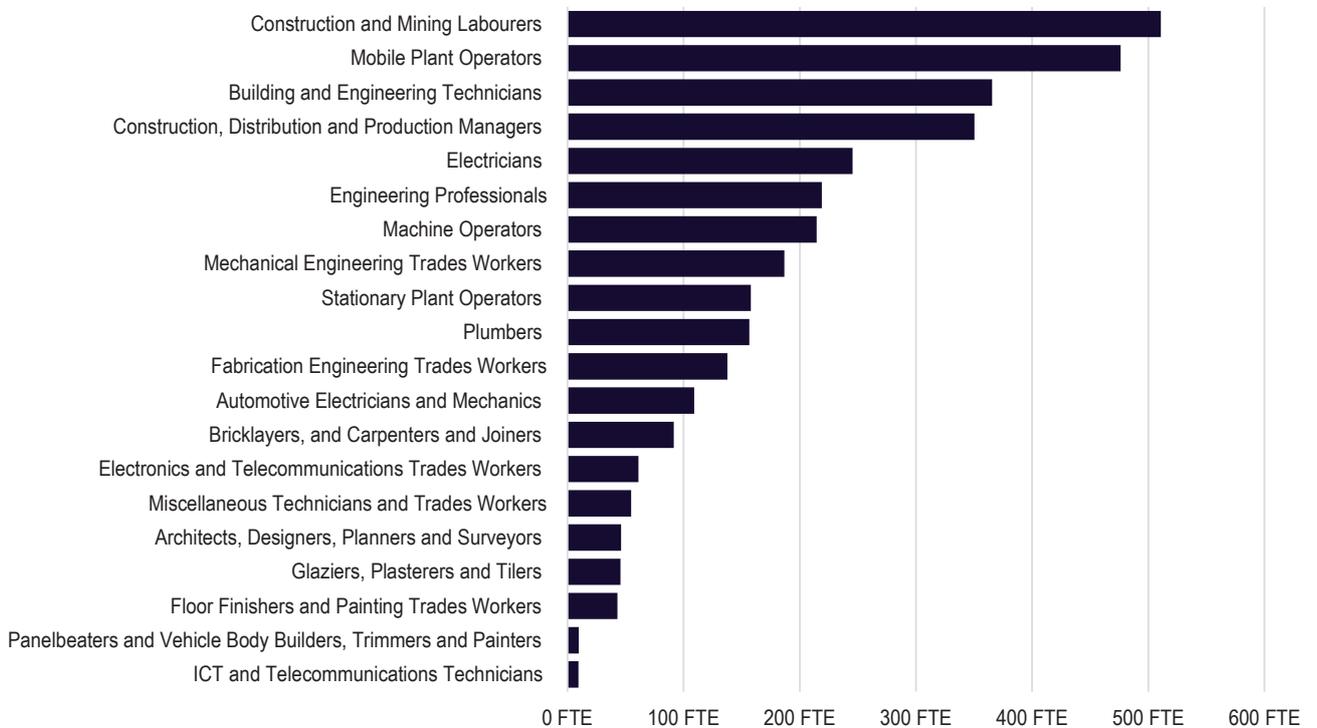
Figure 5.5 Economic Impact of Defence Infrastructure Expenditure – Employment by Occupation Category (Direct and Indirect) – Incremental to 2022-23



Source: ACIL Allen

Figure 5.6 presents the number of construction workers required by occupation as a result of defence infrastructure expenditure in the Northern Territory in the peak year of 2024-25.

Figure 5.6 Economic Impact of Defence Infrastructure Expenditure – Number of Construction Workers Required by Occupation in 2024-25 (Direct and Indirect)



Source: ACIL Allen

The top five construction occupation categories are projected to be construction and mining labourers (511 FTE), mobile plant operators (476 FTE), building and engineering technicians

(366 FTE), construction, distribution and production managers (350 FTE) and electricians (245 FTE).

To complement the analysis provided in **Figure 5.6**, outlined below is the number of construction workers required by occupation (direct and indirect) over the modelling period (**Table 5.1**). The rows highlighted below correspond to the ten construction industry occupations with the highest demand stemming from defence infrastructure expenditure in the peak year of 2024-25.

Table 5.1 Economic Impact of Defence Infrastructure Expenditure – Number of Construction Workers Required by Occupation (Direct and Indirect)

Occupation	2023	2024	2025	2026	2027
Construction, Distribution and Production Managers	129.4	275.9	350.5	292.5	205.5
Architects, Designers, Planners and Surveyors	17.1	36.4	46.3	38.7	27.2
Engineering Professionals	79.2	172.4	219.1	179.0	125.8
Building and Engineering Technicians	132.3	287.7	365.6	299.1	210.2
ICT and Telecommunications Technicians	3.7	7.5	9.5	8.3	5.8
Automotive Electricians and Mechanics	40.7	85.8	109.0	91.9	64.6
Fabrication Engineering Trades Workers	51.4	108.4	137.6	116.2	81.6
Mechanical Engineering Trades Workers	68.0	146.9	186.7	153.7	108.1
Panelbeaters, and Vehicle Body Builders, Trimmers and Painters	3.8	7.7	9.8	8.6	6.0
Bricklayers, and Carpenters and Joiners	37.3	72.2	91.5	84.1	59.0
Floor Finishers and Painting Trades Workers	17.9	33.9	42.9	40.3	28.2
Glaziers, Plasterers and Tilers	19.0	36.0	45.6	42.8	30.0
Plumbers	59.8	123.2	156.5	134.9	94.7
Electricians	95.0	193.3	245.4	214.4	150.5
Electronics and Telecommunications Trades Workers	24.2	48.1	61.1	54.5	38.2
Miscellaneous Technicians and Trades Workers	20.3	43.2	54.9	45.8	32.2
Machine Operators	77.5	168.9	214.6	175.2	123.1
Stationary Plant Operators	58.1	124.3	157.9	131.3	92.3
Mobile Plant Operators	171.7	374.7	476.2	388.2	272.9
Construction and Mining Labourers	187.6	402.1	510.9	423.9	297.9

Source: ACIL Allen

Key Finding 11 Economic Impact of Defence Infrastructure Expenditure – Employment

ACIL Allen estimates that the incremental employment impact of defence infrastructure expenditure in the Northern Territory is expected to peak in 2024-25 at 7,640 FTE jobs, of which 4,316 FTE jobs are expected to be directly employed as a result of these investments. ACIL Allen estimates that a further 3,324 FTE jobs will be created or supported by these investments, by virtue of the additional spending that will result throughout the economy.

To put this level of job creation into perspective, the peak incremental employment impact of 7,640 FTE jobs represents 7.4 per cent of the full time workforce in the Northern Territory in 2021-22, and is 1.84 times the total number of full time jobs created in that year.

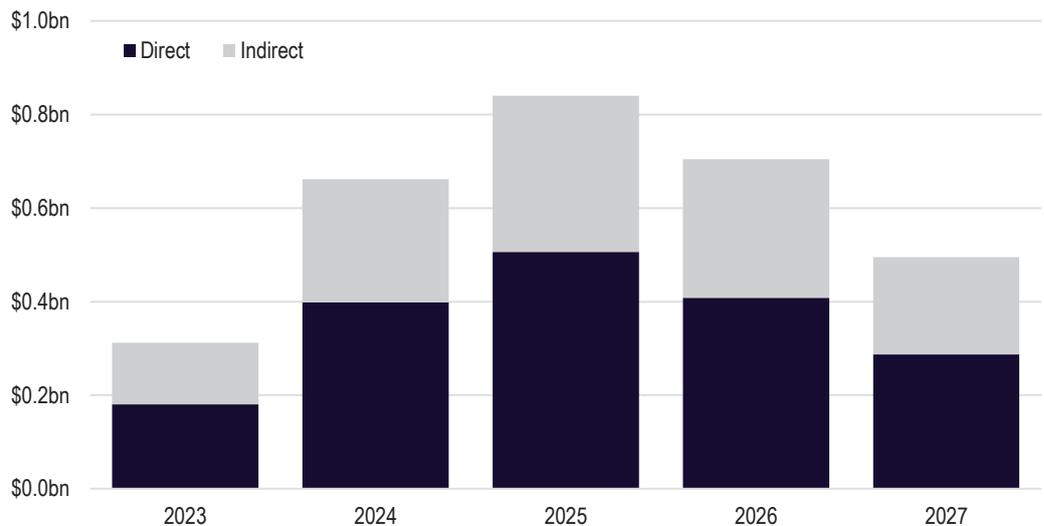
5.1.3 Income



The impacts of the defence infrastructure investment to the incomes of the Northern Territory population is measured through the estimated wages and salaries earned through direct employment the projects, and indirectly throughout the economy through the employment that is created as a result of the expenditure from the defence infrastructure projects.

These incremental impact on wages and salaries in the Northern Territory is presented in **Figure 5.7** below. ACIL Allen estimates that the projected defence infrastructure expenditure in the Northern Territory will boost wages and salaries by \$3.01 billion over the modelling period.

Figure 5.7 Economic Impact of Defence Infrastructure Expenditure – Income



Source: ACIL Allen

At peak investment in 2024-25, it is estimated that incomes across the Northern Territory will be boosted by \$840.3 million, of which \$506.5 million (60.3 per cent) is linked to those directly employed on these projects, with the remaining \$333.8 million (39.7 per cent) in wages and salaries indirectly generated across other sectors of the economy.

The boost to Northern Territory incomes aligns closely with the employment projections, with the majority of the wages and salaries earned associated with workers directly employed on the defence infrastructure projects. Importantly, however, this activity does generate additional income benefits for workers indirectly employed across a number of other sectors of the Northern Territory economy.

Key Finding 12 Economic Impact of Defence Infrastructure Expenditure – Income

ACIL Allen estimates that the stimulus created by the defence infrastructure investments over the modelling period will provide a \$3.01 billion boost to the incomes of Territorians. Of this amount, almost 40 per cent is expected to be incomes earned by workers not directly employed on the defence infrastructure projects, highlighting the important role that investments of this nature and scale can have on a local economy.

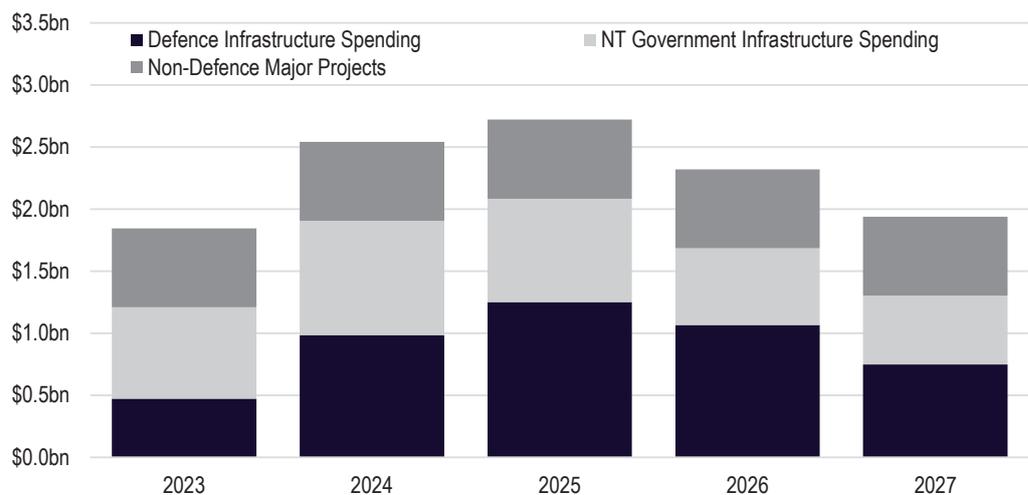
5.2 Economic impact of the Northern Territory’s overall investment pipeline

Although this study is focussed on the economic impacts of defence infrastructure investments on the Northern Territory economy, in reality the development of these projects needs to be considered in the context of the broader pipeline of investment activity that is expected to occur. In this regard, ACIL Allen also modelled the impacts of this broader pipeline of work, which not only includes the defence infrastructure investments, but also the projected investments that are expected to be undertaken by the Northern Territory Government in the general government sector and private sector non-defence major project expenditure (see Section 4.2 for further details on this expenditure breakdown and projections).

Figure 5.8 presents the economic impact of the overall investment pipeline in the Northern Territory to Gross Value Added. The cumulative increase to Gross Value Added (direct and indirect) over the projection period is estimated to be \$11.36 billion. Of the total cumulative increase to Gross Value Added, the largest share, of approximately 39.8 per cent, is accounted for by defence infrastructure expenditure. NT Government infrastructure expenditure in the general government sector is projected to account for 32.2 per cent of the cumulative increase to Gross Value Added from the overall investment pipeline, while private sector non-defence major project expenditure accounts for a share of 28 per cent.

The economic impact of the overall investment pipeline to the Northern Territory is projected to peak in 2024-25 at \$2.72 billion, of which \$1.25 billion (45.9 per cent) is projected to be stimulated by defence infrastructure expenditure.

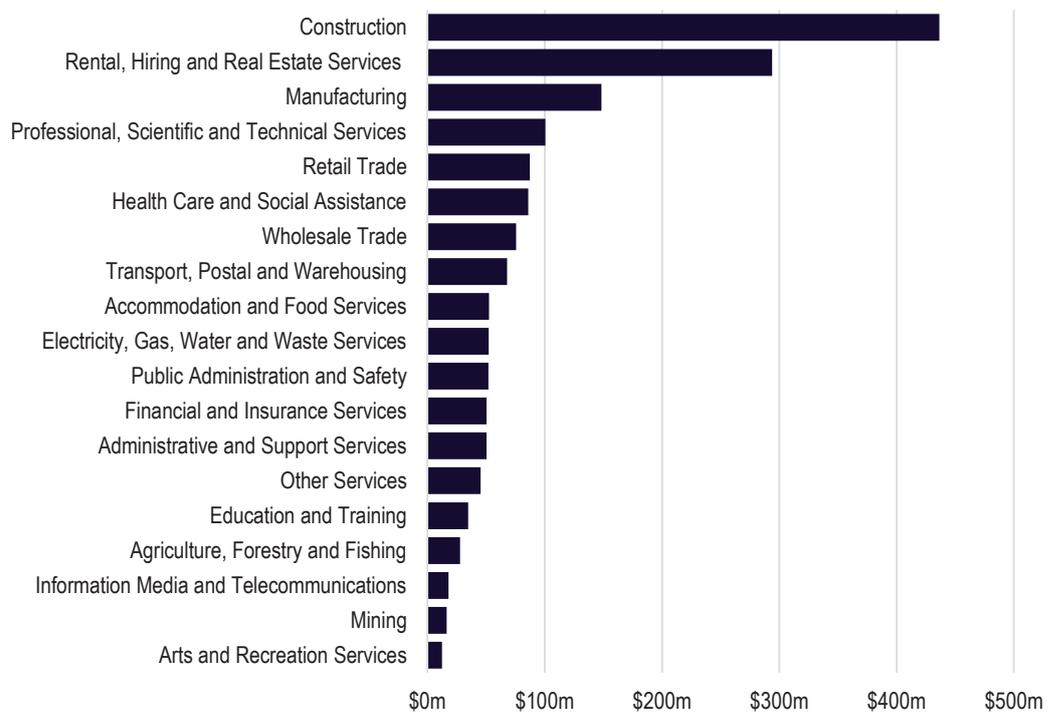
Figure 5.8 Overall Investment Pipeline – Gross Value Added (Direct and Indirect)



Source: ACIL Allen

Figure 5.9 presents a breakdown by industry of the contribution to GVA on an indirect basis (supply chain plus consumption induced) made by the overall investment pipeline in the Northern Territory in 2024-25. Aside from the additional indirect contribution to the construction industry, the five industries projected to receive the largest indirect contribution from the overall investment pipeline in 2024-25 are Rental, Hiring and Real Estate Services (\$293.4 million), Manufacturing (\$148.4 million), Professional, Scientific and Technical Services (\$100.6 million), Retail Trade (\$87.3 million), and Health Care and Social Assistance (\$85.8 million).

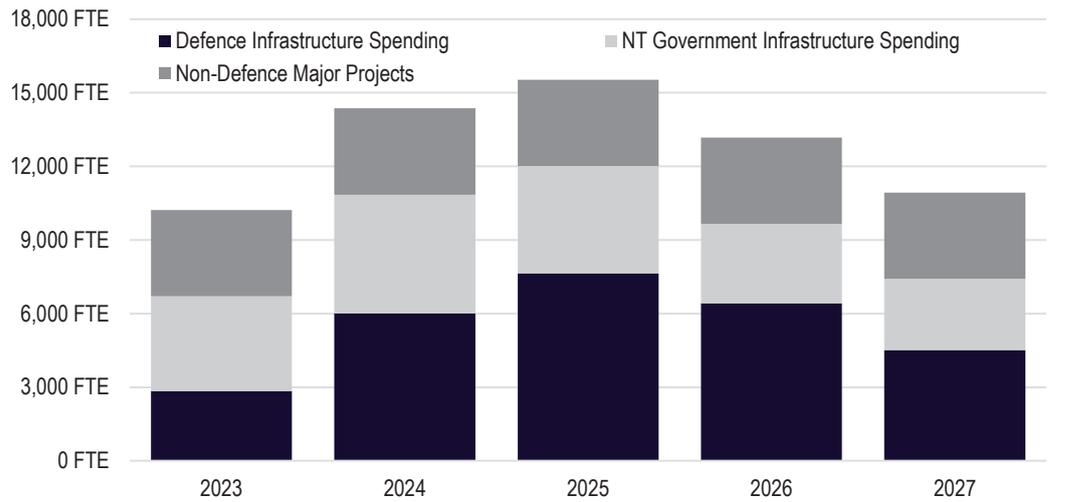
Figure 5.9 Overall Investment Pipeline – Indirect Gross Value Added by Industry – 2024-25



Source: ACIL Allen

Figure 5.10 presents the employment impact of the overall investment pipeline in the Northern Territory. The stimulus from the overall investment pipeline in the Northern Territory is expected to peak in 2024-25, with 15,533 FTE jobs directly or indirectly resulting from this significant investment pipeline. In the peak year, the largest share, of approximately 49.2 per cent, is accounted for by defence infrastructure expenditure at 7,640 FTE jobs. NT Government infrastructure expenditure in the general government sector is projected to account for 28.2 per cent of employment generated by the overall investment pipeline in 2024-25, while private sector non-defence major project expenditure is projected to account for a share of 22.7 per cent.

Figure 5.10 Overall Investment Pipeline – Employment (Direct and Indirect)



Source: ACIL Allen

Figure 5.11 presents the incremental economic impact of the overall investment pipeline in the Northern Territory to employment by occupation category (direct and indirect) on the projection for 2022-23. The incremental workforce requirement stimulated by the overall investment pipeline is projected to peak in 2024-25 at 5,312 FTE. On an occupation category basis, the largest share of the workforce requirement in the peak year of 2024-25 is expected to be construction workers at 45.3 per cent, or 2,405 FTE. Following construction workers, the next three largest categories in the peak year of 2024-25 are projected to be clerical and administrative workers (537 FTE, 10.1 per cent), labourers (449 FTE, 8.5 per cent) and professionals (439 FTE, 8.3 per cent).

Figure 5.11 Overall Investment Pipeline – Employment by Occupation Category (Direct and Indirect) – Incremental to 2022-23



Source: ACIL Allen

Key Finding 13 Northern Territory's overall investment outlook presents significant opportunities and challenges

The proposed pipeline of defence infrastructure projects slated for construction over the next five years is likely to have to compete with other infrastructure investments being undertaken by the Northern Territory Government and the private sector.

Collectively, the delivery of this significant investment pipeline has the potential to deliver \$11.4 billion to the Northern Territory economy over the five years to 2027-28, and require a peak workforce of 15,533 FTE jobs in 2024-25.

While this presents a significant opportunity for the local construction industry, it does present a significant challenge for industry to the extent that the workforce requirements will need to be sourced from outside of the Northern Territory.

Industry Perspectives and Policy Considerations

6

This section provides a summary of the issues and perspectives of the Northern Territory construction industry on its capacity and capability to undertake the large program of defence infrastructure work over the next five years and beyond. Industry representatives were also asked to provide their perspective on the key issues and challenges that are impacting, or will impact, on their ability to capture these opportunities.

6.1 Approach

This report has provided a quantitative basis to analyse and assess the capacity and capability of the Northern Territory construction industry to be able to undertake the large program of defence projects over the next five years and beyond. This analysis was undertaken in the context of tight labour markets, and increased demands on the construction industry from the combination of private sector and public sector infrastructure projects under construction and in the pipeline in the Northern Territory.

Alongside this analysis, ACIL Allen also consulted with key representatives in the construction industry in order to gather qualitative information and insights into the key question as to whether the industry has the capacity and capability to meet the multi-billion dollar program of defence projects over the coming years. ACIL Allen also sought to gather perspectives on the key policy considerations for governments at a Commonwealth and Territory level to ensure that the local construction industry has every opportunity to capture these opportunities that will benefit the Northern Territory economy longer term.

ACIL Allen met with the following industry and government representatives during May 2023:

- Dick Guit, Past President of the Master Builders NT, and former Regional Director at Liang O'Rourke
- Steve Shenfield, recently retired Regional Director of Liang O'Rourke and Past President of the Master Builders NT
- Mick Laidlaw, State Manager – Northern Territory, McMahon Services
- Chris Wynn, Bearclaw Concreting
- Damien Collis, HB Group
- Jason Schoolmeester, Major Projects Commissioner, Northern Territory Government
- Steve Margetic, Managing Director, Sitzler
- Shane Dignan, Managing Director, Halikos Group

Feedback from the stakeholder consultation process has been grouped into the sections below.

6.2 Planning for Growth

From the perspective of industry stakeholders, there was a strong **belief that the local construction industry had the capacity and capability to meet the future demand** from Defence. This confidence reflects the surge capacity of the construction industry in the Northern Territory and the many years of being able to deliver on the investment needs of government, industry and Defence.

Industry stakeholders acknowledged that the capacity and capability of the construction contractors will be tested however as the strong pipeline of investment projects materialise during a period of historically tight labour market conditions across Australia.

However, stakeholders believed that this **risk posed by labour shortages and the opportunity posed by the pipeline of investment projects could be managed through market signalling and scheduling** of these projects, and providing industry with visibility of these plans to assist them in their planning. A number of industry stakeholders spoke of this need, suggesting that a “five year look ahead” would provide them with the confidence to build up their capacity to meet future demand for their services.

Industry stakeholders lamented that the **lack of market signalling limits the ability of industry to right size their operations** for what’s ahead. As described by one stakeholder: “when we don’t see anything, we are not able to do anything”. It was perceived by stakeholders that the Department of Defence keep a tight hold over information relating to upcoming projects and can at times ‘drop’ projects on the market. Releasing individual, discrete projects to the market, as opposed to a ‘program’ approach, is a model that can often work in a large market where the client is a small demander, however it is less effective in a market such as the Northern Territory where Defence is a client that is a large demander in a smaller market. It was expressed that large resource sector investors in the Northern Territory have been effective in their own market signalling activities, and this signalling has encouraged a market response from the construction industry.

Another risk that was cited by industry stakeholders was around “**program slippages**”, which **carries with it risks to construction contractors of carrying costs** in the form of labour and materials that were purchased specifically for that project. In this regard, industry stakeholders felt that Defence did not understand the risks being carried by industry, and that program slippages ultimately impact on the ability of industry to be responsive of the needs of Defence.

Greater visibility of the future program of works associated with Defence projects would not only enable local industry to be prepared for this work – and thereby reducing the risk associated with building capacity – but also help to **maximise the local industry participation**. Stakeholders expressed that Local Industry Participation Policy (LIPP) procurement changes brought about in 2017 which focused on local firm participation in Defence infrastructure programs has been a success, and has shown that designing a program of works around capability and capacity can bring dividends. ACIL Allen understands the success of the LIPP procurement changes are reflected in ICN NT data showing local participation has moved from around 30 per cent to 70 per cent, with a continued upwards trajectory, since the changes were put in place.

Industry stakeholders also suggested that improved planning and scheduling of major defence works should also be coordinated with the Northern Territory Government, given the strong pipeline of infrastructure projects that it is looking to develop over the coming years. **Improved coordination and formal structures between Defence and the Northern Territory Government** will not only assist local industry to prepare for the future works, but also reduces the risks of crowding out each other, as both levels of government try to compete for the services of local industry. Improved coordination extends to the important role of consultative structures, specifically in the form of industry liaison roles based in the Northern Territory, that allow Defence to collect

local information from key stakeholders in the construction industry, specifically in relation to the overall level of construction activity in the Northern Territory economy at any one time, and the level of construction activity projected over the short to medium term. Industry liaison roles also provide stronger visibility to Defence of the entry and exit of construction industry businesses in the Northern Territory, in particular businesses in specialised construction trades.

A “five year look ahead” would also provide industry with the opportunity to **invest in the local workforce, through apprenticeship and traineeship programs**, knowing that the benefits of this investment will pay off if these trained workers can be deployed onto projects following the completion of their apprenticeship or traineeship.

Effective planning of major projects provides a sensible and tangible means by which the demands placed on local industry can be managed. It is through transparency and addressing information asymmetry that efficient market outcomes can result – smoothing out the negative impacts of large swings in the investment cycle, and the cost pressures that can arise from poor scheduling of major investment projects.

Key Finding 14 Planning for Growth

The Northern Territory construction industry has proven over time to have the capacity and capability to deliver on large programs of work for Defence, the Northern Territory Government and for the resources industry. With a large program of works required to be delivered over the coming years, industry stakeholders see an important role in Defence and the Northern Territory Government more effectively undertaking market signalling activities to provide industry with the knowledge that it needs to make informed resourcing decisions.

This investment plan should also consider ways in which both levels of government can coordinate their respective programs of work to maximise local industry participation, and address the risks of crowding out.

6.3 Building Industry Capacity and Capability

The first stakeholder theme that emerged from industry consultation concerned the need for the Northern Territory Government and Defence to manage their respective programs of works to maximise local participation by the construction industry. The second key theme that emerged from stakeholders, however, discussed the issues that needed to be addressed to enable industry to efficiently build its capacity and capability over time.

In order to enable industry to efficiently build its capacity and capability over time, stakeholders raised a number of policy considerations for government to address the “supply side constraints” that limit the ability of the local construction industry to be able to respond to the strong pipeline of Defence projects over the coming years. At centre of this issue is the ability for the local construction industry to be able to source a **skilled and available construction workforce**. This is not only a present challenge for the industry, but a long term challenge that confronts the key industries in the Territory. It was expressed that apprentices and trainees make a critical contribution to the construction industry, however these workers are a long-term proposition and do not help with skill shortages in the immediate term.

A consistent theme through stakeholder engagement was the challenges associated with accessing skilled and semi-skilled labour for construction projects, particularly contractors are required to scale up their workforce at relatively short notice. This is understandable given that at the time this study has been prepared, the Northern Territory’s unemployment rate had hit a low of 3.3 per cent in May 2023 – the lowest rate of unemployment recorded in the Territory in more than a decade, and the lowest rate of unemployment of any State or Territory in Australia.

Feedback from stakeholders suggests that there is a clearly defined pool of labour which is required to work on defence construction projects. In order to ensure that the industry isn't simply competing with itself for scarce labour as the requirements of industry increase in the coming years, there is a need for a **workforce strategy** to be developed. This strategy should provide a long term view on the skills expected to be required by the construction industry. In better understanding this need, the strategy can then be framed towards policy reforms that will address the short, medium and longer term needs of industry.

Key Finding 15 A Workforce Strategy for the Construction Industry

A workforce development strategy for the Northern Territory construction industry will provide the framework from which policy settings can be calibrated to enable industry to build its workforce capacity and capability to capture the future pipeline of infrastructure projects.

Stakeholders expressed the **'actual' capability and capacity available to Defence is as much a function of 'how Defence does business', as it is the resident capacity in a market.** As such, it is factors such as the shape of procurement, the commerciality of projects (risk) and contractual terms that can either enhance or diminish how much of the construction market is attracted to a works package for a defence project. More specifically, stakeholders expressed that punitive contractual terms (relating to areas such as insurance, liquidated damages and design risk) which over extend on risk can drive capacity and capability away.

However, reflecting the current concerns facing industry in attracting and retaining a workforce, the focus of industry for this study was on addressing the most pressing challenges facing industry. Not surprisingly, stakeholders believed that there needed to be a focus on: (1) addressing barriers to temporary and permanent migration; (2) boosting interstate migration; and (3) addressing acute accommodation shortages in the Territory. These specific issues are discussed further below, and should be explored as part of the development of the workforce strategy for the construction industry.

6.3.1 Overseas migration

The Northern Territory has historically relied on overseas migration in order to address the labour and skill needs of industry. However, the support provided by overseas migration to the local construction labour force, relative to long-term historic trends, has been in decline for more than five years. While the COVID-19 pandemic has been a factor in this situation, the support provided by overseas migration to the construction labour force was in decline prior to 2020. The Northern Territory's share of national construction skilled migrants peaked at 5 per cent in March 2016, before steadily declining over the following period to a share of 1.3 per cent in December 2019 (see **Section 3.1.4**).

In an environment of acute labour shortages in the local construction industry, and more broadly across the Territory and Australia, industry stakeholders believed that the policy settings that underpin Australia's migration system needed review. The size and scale of the opportunity that is presenting for the local construction industry requires the combination of short term, targeted migration strategies and long term permanent migration strategies.

As noted by one industry stakeholder:

"We need to make it easier for people to get the Northern Territory, and to stay here. The migration system needs to be streamlined, as it is very difficult to navigate."

In March 2023, the Department of Home Affairs released the *Review of the Migration System*, a report from an expert panel which outlined a series of directions and options for the future of Australia's migration system for the Commonwealth Government's consideration. A measure

supporting possible reform directions identified in the Review is for the Commonwealth Government to lead the development of a strategy to oversee efforts to streamline skills recognition, particularly for those occupations that can deliver the most benefit to Australia.

The Review also explored options relating to simplifying legislation and improving users' interaction with the migration system. Assistance is often needed to navigate the migration system's processes, with the high use of migration agents a clear indication of the level of difficulty. Issues flowing from the complexity of the migration system also impacts on the level of engagement from businesses.

Skills recognition of overseas migrants and the complexity of the migration system for both prospective migrants and businesses, were identified by stakeholders as barriers to achieving an uplift in the level of overseas migration in the Northern Territory.

In relation to short term or temporary migration programs, industry stakeholders expressed concern that the needs of the construction industry were not a priority for the Northern Territory Government. Industry stakeholders saw the effort that the Government was putting in to address the labour needs of the tourism industry, and believed that the needs of the construction industry should be similarly prioritised.

In this regard, some stakeholders pointed to the success of the "Pacific Island Solution" for the tourism and hospitality industry as something that should be broadened to the construction industry. Others suggested that could go beyond sourcing workers from Pacific Islands, with the program also extended to higher skilled nations such as the Philippines.

Stakeholders indicated that the Commonwealth Government was aware of the issues and challenges that industry was being confronted with in relation to Australia's migration system. Their concern, however, was that this was a lower order priority for the Commonwealth relative to other policy challenges.

Key Finding 16 Addressing barriers to temporary and permanent migration

Australia's migration program needs to account for the acute labour need of high growth, low population regions, such as the Northern Territory. Without access to a supply of skilled and semi-skilled workers from overseas, this will put at risk the timely delivery of the large program of defence infrastructure projects in the Territory.

6.3.2 Interstate migration

Historically, the Northern Territory has experienced a net migration of people out of the Territory to live in other parts of Australia. Industry stakeholders acknowledged this was a longer term challenge for the Northern Territory Government, and has been part of the cost of doing business in the Territory.

It was noted that there were both economic and social factors that influenced a person's decision to leave the Territory. Employment opportunities are the most important influence on a person's decision to live and work in the Territory, and stakeholders believed that the economic growth and development objectives should remain a priority focus for the Government.

However, stakeholders were also quick to highlight the need for Government to also be focussed on addressing the liveability factors that influence a person's decision choose to live in the Territory. Social challenges, such as community safety, housing availability, and improved connectivity with the rest of Australia through the cost and frequency of airline connections, were all cited as material influences on a person's decision to make the Territory a temporary or permanent place to live and work.

Stakeholders also believed that more could be done to incentivise people to relocate from other parts of Australia to take advantage of the economic opportunities that exist in the Territory. In this regard, stakeholders cited options such as relocation incentives and tax incentives as options that could be considered to address the challenge of recruiting workers and their families from other parts of Australia.

In this regard, stakeholders spoke to the need for the permanent population of the Northern Territory to grow, and for it be more than a temporary home. As cited by one stakeholder:

“We need the next generation of workers to see the Northern Territory as a place in which they can build a career and raise a family. However, the economic opportunities that the Territory can bring is not enough. We need to address the perceptions about living in the Territory, and look at ways of boosting liveability.”

And by another stakeholder:

“The Northern Territory Government has been focussed on investment attraction, but this cannot be realised without an accompanying strategy that is focussed on workforce attraction.”

Stakeholders believed that these types of solutions needed to be considered holistically by governments as part of a broader strategy to support the development of Northern Australia. Such a strategy could then consider a broad range of policy solutions to support long term population growth in the Territory.

In 2015, the Australian Government released *Our North, Our Future*, a white paper on developing Northern Australia. This white paper outlines the importance of laying the foundations for rapid population growth and putting Northern Australia on a trajectory to reach a population of four to five million by 2060. Aside from this target, the white paper is limited in the extent to which it explores the levers that could be used to increase population growth through new arrivals from both interstate and overseas destinations, as well as increase retention of people from Northern Australia, in particular for the 18-30 year old demographic. Putting in place the levers to stimulate population growth through the lens of Northern Australia acknowledges the existing strong relationship the Northern Territory has with Queensland and Western Australia, as the two interstate jurisdictions where anecdotally the retention of the migrants from the southern regions of these states is strongest, relative to New South Wales and Victoria.

The *Our North, Our Future* white paper did not include defence as one of the five industries with ‘bright growth prospects’. Stakeholder feedback received by ACIL Allen, in combination with the investment outlook presented in this report and the growing strategic significance placed on Northern Australia since 2015, would suggest that a renewed economic development strategy for Northern Australia, which gives greater focus on the levers to support population growth and the economic impact of the defence industry, is required.

In the absence of a longer term strategy to grow the permanent population of the Northern Territory, industry stakeholders indicated that there would continue to be a reliance on overseas migration, the recruitment of workers from outside of the Territory on a temporary basis, and Fly-In-Fly-Out (FIFO) arrangements, as opposed to its preference to “recruit locally”.

A challenge for interstate migration however is that while for many years the Northern Territory has been counter cyclical to the rest of Australia and has been able to draw resources from interstate, at present all states and territories are experiencing significant skill shortages at the same time.

Key Finding 17 Northern Territory Population Strategy

While the Northern Territory has unique lifestyle factors that make it an attractive place to visit and live, and there is a strong pipeline of economic opportunities (including in relation to future defence infrastructure commitments) that will provide job opportunities for thousands of people, the Territory still faces the challenges of building its permanent population due to a range of economic and social factors. Failure to address these issues will mean that industry will need to rely on overseas migration, the recruitment of workers from outside of the Territory on a temporary basis, and FIFO arrangements. Industry stakeholders noted a strong preference to “recruit locally”, but this will be difficult without a longer term population strategy for the Territory.

6.3.3 Addressing accommodation shortages

The most commonly cited challenge that industry stakeholders spoke to in relation to being able to recruit and retain key workers in the Territory was in relation to accommodation shortages. Stakeholders noted that while there was a pressing need to progress initiatives that made it easier for industry to recruit workers on a temporary or permanent basis from overseas or interstate, the numbers that could be recruited would be limited due to the significant shortage of accommodation options in the Territory, in particular in Katherine.

Stakeholders cited concerns that this challenge was not being prioritised by the Northern Territory Government, with one stakeholder noting that no new funding had been allocated to addressing accommodation shortages in the Territory. For major construction projects that are in the pipeline, industry stakeholders noted that large workers camps would need to be built into the overall project. These workers camps have typically been tied to single projects, but there were industry stakeholders that suggested this model could be expanded so that they could be linked to multiple projects.

Industry stakeholders indicated that they wanted to see a more proactive approach to building a pipeline of housing stock in the Territory, given the large pipeline of work in areas such as defence, economic and social infrastructure and future resource industry projects. As cited by one stakeholder:

“Government needs to invest in new housing ahead of the future pipeline of infrastructure work. If it waits until the demand is here, it will exacerbate current shortages. Building the stock of housing may require repurposing of current facilities – such as the Howard Springs facility – in the short term, and the introduction of incentives to stimulate housing developments longer term.”

Key Finding 18 Accommodation shortages must be addressed to build a local workforce

Addressing accommodation shortages in the Territory was universally cited by all stakeholders as a priority focus area for the Government to assist industry in being able to build a local workforce to be able to deliver on the large pipeline of infrastructure projects in the Territory.

Construction Industry Capacity and Capability Assessment

7

This section provides an overall summary of the key findings emerging from this study.

7.1 Overall Finding 1: The NT construction industry has a track record of delivering on industry needs

Through the research and insights presented in this report, ACIL Allen has found clear evidence that the Northern Territory construction industry has capacity and capability to meet the requirements associated with the proposed defence infrastructure projects.

Northern Territory's construction industry is currently experiencing the tightest labour market conditions on record, with ACIL Allen estimating a construction industry unemployment rate of just 2.7 per cent in 2022-23. Tight labour market conditions are a reflection of both rising demand for construction workers, and constrained supply stemming from lower levels of skilled migrants since the end of the COVID-19 pandemic.

The analysis also highlights, however, that the construction industry has shown the capacity and capability to be able to adjust to the needs of the broader economy during peak investment cycles. This reflects the ability for the industry to be able to source skilled construction industry workers from other parts of Australia, and overseas.

ACIL Allen has conservatively estimated that there is over \$6 billion in future defence infrastructure projects that will need to be built over the period from 2022-23 to 2026-27, with more than three-quarters of this expenditure expected to be sourced from the Northern Territory in the form of labour and materials purchased from other industries.

This investment activity is estimated will provide a cumulative \$4.5 billion stimulus to the local economy over the five-year modelling period. At peak investment in 2024-25, defence infrastructure expenditure will generate \$1.25 billion, which would represent a five per cent boost to Northern Territory's economy in that year alone.

In order to facilitate such activity, ACIL Allen estimates that the incremental employment impact of defence infrastructure expenditure in the Northern Territory will peak in 2024-25 at 7,640 FTE jobs, of which 4,316 FTE jobs are expected to be directly employed as a result of these investments.

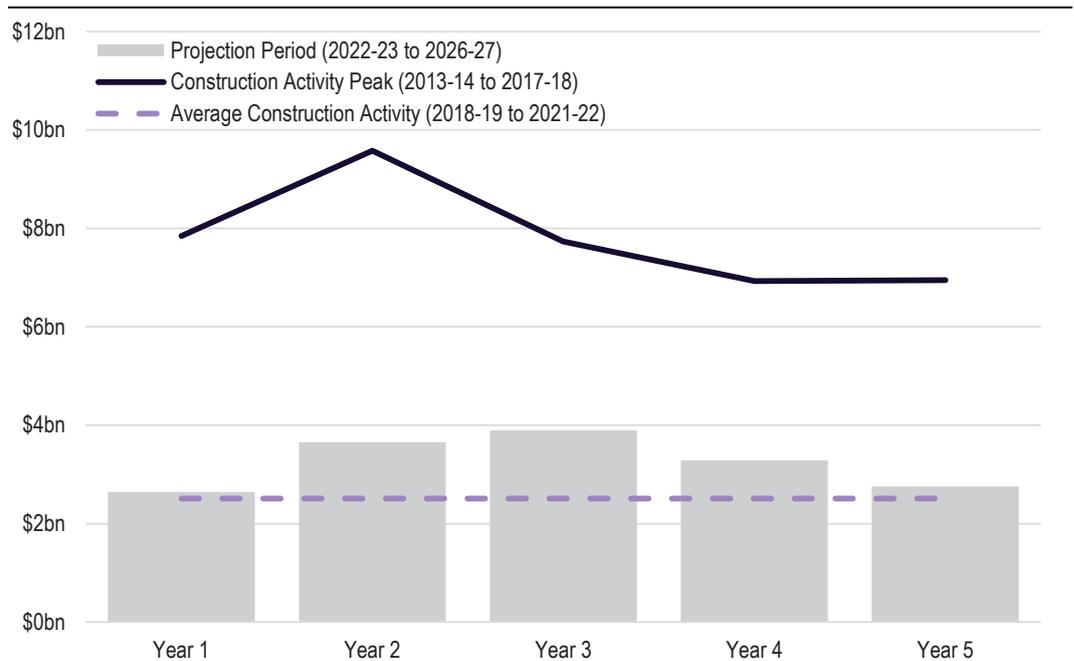
To put this level of job creation into perspective, the peak incremental employment impact of 7,640 FTE jobs represents 7.4 per cent of the full-time workforce in the Northern Territory in 2021-22, and is 1.84 times the total number of full time jobs created in that year.

While this level of stimulus presents a significant challenge for the Northern Territory construction industry, history shows that it has been able to meet these demands. **Figure 7.1** presents ACIL Allen's comparison of the projected economic impacts of the future defence infrastructure projects, NT Government infrastructure expenditure and private major project expenditure, against the most

recent construction boom during the development of the INPEX operated Ichthys LNG project during the middle of last decade.

ACIL Allen's analysis found that at the projected peak in the defence-led investment cycle in 2024-25, there will be \$3.89 billion in construction activity in the Northern Territory. While the cumulative construction activity peak is 55 per cent higher than the average annual construction activity recorded in the Northern Territory over the period between 2018-19 and 2021-22, this needs to be balanced against the fact that it is still some 60 per cent below the peak of \$9.58 billion in building and engineering construction activity recorded in 2014-15.

Figure 7.1 Managing the Peak – Construction Activity over the Projection Period compared to historical levels of construction activity in the Northern Territory



Source: ABS Cat. 8752.0, Building Activity (Original), ABS Cat. 8762.0, Engineering Construction Activity (Original, ACIL Allen)

The fact that the level of construction activity in the projection period never gets close to the level of construction activity in the previous peak period between 2013-14 and 2017-18, should provide confidence to Defence, the NT Government and construction industry stakeholders in the Northern Territory that the projected demand stemming from defence infrastructure projects, and all other infrastructure projects in the investment pipeline, can be met.

Furthermore, ACIL Allen has found that the capacity of construction industry businesses in the Northern Territory has strengthened over the past three years, through growth in the overall number of construction industry businesses.

7.2 Overall Finding 2: Policy action is needed to address constraints on industry

The capacity of the local construction industry to be able to deliver on higher levels of construction activity does not, however, remove or minimise the importance of immediate action to address the capacity constraints impacting on industry today.

Through the research, analysis and stakeholder insights presented in this report, ACIL Allen identified a number of clear policy directions that will ensure the construction industry is able to meet the future needs of the defence industry specifically, but also of government and industry more broadly.

With a large program of works required to be delivered over the coming years, industry stakeholders see an important role in Defence and the Northern Territory Government more effectively undertaking market signalling activities to provide industry with the knowledge that it needs to make informed resourcing decisions. Such planning should also consider ways in which both levels of government can coordinate their respective programs of work to maximise local industry participation, and address the risks of crowding out. Complementing market signalling are the benefits associated with releasing multiple defence projects to market in a 'program' format, as opposed to the release of individual, discrete projects.

Enhanced market signalling activities should be supported by a strategy to ensure the current and future workforce needs of the construction industry can be met. A workforce development strategy for the Northern Territory construction industry will provide the framework from which policy settings can be calibrated to enable industry to build its workforce capacity and capability to capture the future pipeline of infrastructure projects.

Specifically, the strategy will need to address the barriers to temporary and permanent migration, which is critical to addressing the long-term labour needs of high growth, low population regions, such as the Northern Territory. Without access to a supply of skilled and semi-skilled workers from overseas, this will put at risk the timely delivery of the large program of defence infrastructure projects in the Territory.

While the Northern Territory has unique lifestyle factors that make it an attractive place to visit and live, and there is a strong pipeline of economic opportunities (including in relation to future defence infrastructure commitments) that will provide job opportunities for thousands of people, the Territory still faces the challenges of building its permanent population due to a range of economic and social factors. Failure to address these issues will mean that industry will need to rely on overseas migration, the recruitment of workers from outside of the Territory on a temporary basis, and FIFO arrangements.

However, measures to boost the local population in the Territory must look at addressing accommodation shortages, which have been universally cited by all stakeholders as a priority focus area for the Government to assist industry in being able to build a local workforce to be able to deliver on the large pipeline of infrastructure projects in the Territory.

7.3 List of report findings

For completeness, this section lists all the key findings presented throughout this report.

Key Finding 1 Economic trends and prospects

The Northern Territory economy has benefited from the development of a succession of major projects, which have leveraged off the Territory's natural resources and proximity to key markets. Looking ahead, the NT economy is expected to be driven by a number of major projects, including investment in a number of major defence industry projects.

Key Finding 2 Population growth a constraint on Northern Territory's economic development

The Northern Territory has recorded below average rates of population growth for more than a decade, reflecting the long term trend of net interstate migration out of the Territory to other parts of Australia. This has meant that there is an increased reliance on overseas migration to grow the local population.

Key Finding 3 Labour market conditions are tightening

The Northern Territory economy has historically experienced tighter labour market conditions than the rest of Australia, reflecting the smaller population base. COVID-induced border closures have exacerbated this challenge, as NT industry was unable to source skilled labour from overseas.

Key Finding 4 Strategic importance of defence in the Northern Territory

The Defence Strategic Review has identified the Defence Force's capability to operate from Australia's northern bases as a strategic priority. This will see renewed focus on the development of a number of strategic defence infrastructure projects over the coming years.

Key Finding 5 Economic importance of defence to the Northern Territory

There are a number of defence facilities spread across the Northern Territory, including major Australian Army bases, Royal Australian Navy bases, Royal Australian Air Force military air bases, land-based training areas, an air weapons range and signals intelligence-gathering facilities. Beyond their strategic importance, these facilities are also significant contributors to the Northern Territory economy.

Key Finding 6 Defence infrastructure outlook in the Northern Territory

There is a significant pipeline of defence infrastructure investment that is expected to occur in the Northern Territory in the coming years, not only from Australian Defence Force but also from proposed investments by the United States.

Key Finding 7 Importance of the construction industry to the Northern Territory economy

The construction industry is both a major contributor to the Northern Territory economy through the activity it supports and the people it employs, and is also a critical enabler for other industries through its role in the construction of major investment and capacity-enabling projects. Although well below the peaks in construction activity during the Ichthys LNG-led construction boom last decade, indicators suggest that activity is increasing.

While the industry continues to invest in training apprentices and trainees, there will be a need to supplement the local construction industry workforce with workers from outside the Territory as activity increases.

The capacity of construction industry businesses in the Northern Territory has strengthened over the past three years, through growth in the overall number of employing businesses, the number of medium-size businesses of 20-199 employees and the number of businesses with turnover exceeding \$10 million.

Key Finding 8 Construction industry workforce demand analysis

Northern Territory's construction industry is currently experiencing the tightest labour market conditions on record, with ACIL Allen estimating a construction industry unemployment rate of just 2.7 per cent in 2022-23. Tight labour market conditions are a reflection of both rising demand for construction workers, and constrained supply stemming from lower levels of skilled migrants since the end of the COVID-19 pandemic.

ACIL Allen's analysis has found that skilled vacancies exist across a number of key occupations, with the numbers proportionately higher for mobile plant operators, engineering professionals, miscellaneous technicians and trades workers, ICT and telecommunications technicians, and machine operators.

The analysis also shows, however, that the construction industry has shown the capacity and capability to be able to adjust to the needs of the broader economy during peak investment cycles. This reflects the ability for the industry to be able to source skilled construction industry workers from other parts of Australia, and overseas. This points to the need for governments to address the barriers to labour market mobility to assist the construction industry in being able to scale up its workforce to meet the future needs of the defence industry, government and the other industries.

Key Finding 9 Estimated defence industry investment in the Northern Territory, 2022-23 to 2026-27

Based on high level project information supplied by the Department of Defence and the Northern Territory Government, ACIL Allen estimates that the total expenditure on defence projects in the Northern Territory over the period from 2022-23 to 2026-27 equates to \$6.23 billion. Of this amount, ACIL Allen has estimated that \$4.76 billion or 76.4 per cent will be sourced from the Northern Territory, in the form of labour and materials purchased from other industries.

The economic impacts of the projected defence infrastructure investment expenditure will be considered in the context of the projected investment pipeline of the Northern Territory Government and the private sector more broadly over the same period.

Key Finding 10 Economic Impact of Defence Infrastructure Expenditure – Gross Value Added

ACIL Allen estimates that the projected defence infrastructure investment in the Northern Territory will provide a cumulative \$4.5 billion stimulus to the local economy over the five year modelling period. At peak investment in 2024-25, defence infrastructure expenditure will generate \$1.25 billion, which would account for approximately 4.7 per cent of Gross State Product in this year.

Key Finding 19 Economic Impact of Defence Infrastructure Expenditure – Employment

ACIL Allen estimates that the incremental employment impact of defence infrastructure expenditure in the Northern Territory is expected to peak in 2024-25 at 7,640 FTE jobs, of which 4,316 FTE jobs are expected to be directly employed as a result of these investments. ACIL Allen estimates that a further 3,324 FTE jobs will be created or supported by these investments, by virtue of the additional spending that will result throughout the economy.

To put this level of job creation into perspective, the peak incremental employment impact of 7,640 FTE jobs represents 7.4 per cent of the full time workforce in the Northern Territory in 2021-22, and is 1.84 times the total number of full time jobs created in that year.

Key Finding 12 Economic Impact of Defence Infrastructure Expenditure – Income

ACIL Allen estimates that the stimulus created by the defence infrastructure investments over the modelling period will provide a \$3.01 billion boost to the incomes of Territorians. Of this amount, almost 40 per cent is expected to be incomes earned by workers not directly employed on the defence infrastructure projects, highlighting the important role that investments of this nature and scale can have on a local economy.

Key Finding 13 Northern Territory's overall investment outlook presents significant opportunities and challenges

The proposed pipeline of defence infrastructure projects slated for construction over the next five years is likely to have to compete with other infrastructure investments being undertaken by the Northern Territory Government and the private sector.

Collectively, the delivery of this significant investment pipeline has the potential to deliver \$11.4 billion to the Northern Territory economy over the five years to 2027-28, and require a peak workforce of 15,533 FTE jobs in 2024-25.

While this presents a significant opportunity for the local construction industry, it does present a significant challenge for industry to the extent that the workforce requirements will need to be sourced from outside of the Northern Territory.

Key Finding 14 Planning for Growth

The Northern Territory construction industry has proven over time to have the capacity and capability to deliver on large programs of work for Defence, the Northern Territory Government and for the resources industry. With a large program of works required to be delivered over the coming years, industry stakeholders see an important role in Defence and the Northern Territory Government more effectively undertaking market signalling activities to provide industry with the knowledge that it needs to make informed resourcing decisions.

This investment plan should also consider ways in which both levels of government can coordinate their respective programs of work to maximise local industry participation, and address the risks of crowding out.

Key Finding 15 A Workforce Strategy for the Construction Industry

A workforce development strategy for the Northern Territory construction industry will provide the framework from which policy settings can be calibrated to enable industry to build its workforce capacity and capability to capture the future pipeline of infrastructure projects.

Key Finding 16 Addressing barriers to temporary and permanent migration

Australia's migration program needs to account for the acute labour need of high growth, low population regions, such as the Northern Territory. Without access to a supply of skilled and semi-skilled workers from overseas, this will put at risk the timely delivery of the large program of defence infrastructure projects in the Territory.

Key Finding 17 Northern Territory Population Strategy

While the Northern Territory has unique lifestyle factors that make it an attractive place to visit and live, and there is a strong pipeline of economic opportunities (including in relation to future defence infrastructure commitments) that will provide job opportunities for thousands of people, the Territory still faces the challenges of building its permanent population due to a range of economic and social factors. Failure to address these issues will mean that industry will need to rely on overseas migration, the recruitment of workers from outside of the Territory on a temporary basis, and FIFO arrangements. Industry stakeholders noted a strong preference to "recruit locally", but this will be difficult without a longer term population strategy for the Territory.

Key Finding 18 Accommodation shortages must be addressed to build a local workforce

Addressing accommodation shortages in the Territory was universally cited by all stakeholders as a priority focus area for the Government to assist industry in being able to build a local workforce to be able to deliver on the large pipeline of infrastructure projects in the Territory.

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