



Australian Government

Department of Defence

LARRAKEYAH BARRACKS REDEVELOPMENT

Darwin, Northern Territory

STATEMENT OF EVIDENCE TO THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

Canberra, Australian Capital Territory

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LARRAKEYAH BARRACKS REDEVELOPMENT PROJECT

Identification of the Need

1. Darwin is strategically vital for supporting Australian Defence Force (ADF) operations across Australia's northern approaches, as a location from which to mount, deploy and sustain military operations and will continue to be for the long term. The Larrakeyah Defence Precinct comprises Larrakeyah Barracks and HMAS *Coonawarra*. It is located on the coast, approximately two kilometres west of the Darwin Central Business District (CBD) and was established in 1932¹. A locality and site location plan for the Larrakeyah Defence Precinct is provided at Attachments 1 and 2.
2. The 2015 White Paper on Developing Northern Australia outlined the Government's commitment to a strengthened Defence presence in northern Australia. The subsequent 2016 Defence White Paper confirmed the importance of key enabling capabilities such as Defence bases and foreshadowed upgrading of Larrakeyah Barracks and *Coonawarra* to support the introduction of more capable offshore patrol vessels (OPV) and to enhance support to Australian Defence Force (ADF) operations.
3. The Larrakeyah Defence Precinct is a critical enabler and provides support to the generation and sustainment of the ADF. The precinct supports patrol vessels home-ported at or visiting *Coonawarra*. The precinct also provides forward operating support functions to Major Fleet Units to sustain significant joint or combined operations and exercises, humanitarian and disaster relief tasks.
4. The Larrakeyah Defence Precinct also sustains the North West Mobile Force (NORFORCE), part of Army's Regional Force Surveillance Group, enhancing Australia's remote-area reconnaissance and surveillance capability in the North and North-West of Australia.

¹ The Defence Estate Strategy 2016-36 identifies Larrakeyah Barracks as a Joint Facility referred to as the Larrakeyah Defence Precinct.

Existing Infrastructure Condition, Capacity and Compliance Issues

5. In late 2012, a comprehensive review of the engineering services infrastructure at Larrakeyah Defence Precinct identified significant shortcomings in the condition, capacity and compliance of these services. Working accommodation for several units is in poor condition, does not meet contemporary work or training standards or is not fit for their current purpose. In addition, the base entry does not meet contemporary Defence security standards. Together, these facilities and infrastructure shortcomings limit the overall ability of the base to support the generation and sustainment of ADF capability.
6. The proposed Larrakeyah Barracks Redevelopment project will address these current deficiencies and infrastructure risks and will allow for future growth of the precinct population.

Background

7. Larrakeyah Defence Precinct is home to over 700 personnel from the ADF (primarily Navy and Army), plus United States Marine Corps, Australian Public Service and contractors. The precinct is also utilised by up to 250 reservists during peak periods and other ADF elements during exercises that further stretch the precinct's infrastructure. It also houses Defence families in 147 Defence Housing Australia (DHA) service residences. Since its establishment, the precinct has had limited refurbishment and reinvestment, with the last major program of works undertaken in 1982 when the naval base *Coonawarra* was constructed.

Larrakeyah Barracks is an Enduring Defence Base

8. ADF units and organisations currently located at the Larrakeyah Defence Precinct include Headquarters Northern Command (HQ NORCOM), with the Deputy Commander NORCOM being the Senior ADF Officer on base. The Larrakeyah Defence Precinct also provides working and training accommodation in support of NORFORCE, one of Army's Regional Force Surveillance Units. NORFORCE conducts surveillance in the Northern Territory and Kimberley regions and maintains several manned and unmanned depots in these regions. NORFORCE is supported by specialist amphibious capabilities provided by Army's 36 Water Transport Troop located within *Coonawarra*.
9. *Coonawarra* is a key maritime support precinct and the homeport for twelve Armidale Class Patrol Boats (ACPB) and other support craft. The establishment provides administrative,

training, logistics and maintenance support for home-ported fleet units and support to visiting ships. Australian Border Protection Customs Service patrol boats also regularly utilise *Coonawarra* wharf facilities. The Navy's Patrol Boat Group is also located on Larrakeyah Defence Precinct, while the majority of the Patrol Boat Systems Program Office which provides through life support for the ACPB, is located in leased office accommodation in the Darwin CBD.

Other Training and Support Units / Services on Larrakeyah Defence Precinct

10. Other training and support units located at the Larrakeyah Defence Precinct include:
 - a. Joint Health Command – which operates the Larrakeyah Health Centre;
 - b. Capability Acquisition and Sustainment Group – comprising some elements of the Patrol Boat Systems Program Office (PBSPO) and their prime contractor Thales;
 - c. Fleet Training Advisory Cell — North (Darwin) – which manages and conducts a range of specialist and continuation courses for Navy personnel in the Darwin area; and
 - d. Headquarters Northern Territory Australian Army Cadets Battalion and 70 Australian Army Cadet Unit.
11. A wide range of administrative and support functions on the Larrakeyah Defence Precinct are provided by Defence public servants and contractors. Broadspectrum is contracted for catering, cleaning, grounds maintenance, security and administration services, while Plenary Living provides support services for the living in accommodation (LIA) provided under the Single Living Environment and Accommodation Precinct (Single LEAP) contract.
12. DHA manages the 147 service residences located within the Precinct. In addition, the Precinct provides a mix of single units and bunk accommodation for over 400 service personnel.

Shortcomings in Existing Facilities and Engineering Services

13. Since its establishment in 1932, reinvestment in infrastructure at the Larrakeyah Defence Precinct has been limited. The last major program of works was undertaken in 1982 when the Darwin Naval Base (since renamed HMAS *Coonawarra*) was constructed.
14. Since 1982, new works have been limited to the construction of the following facilities:

- a. HQ NORCOM facility;
- b. Port Services Organisation and standby crew facility;
- c. DHA service residences;
- d. New living-in accommodation (under Project Single LEAP);
- e. Interim health facility;
- f. Extension of the Fremantle Wharf; and
- g. Small fuel storage facility.

15. In the absence of significant re-investment, substantial parts of the engineering services infrastructure at the precinct are now over 35 years old and many working and support facilities, including the base entry precinct, fail to meet contemporary standards. These shortcomings limit the overall effectiveness and efficiency of the operational support and training activities and the operational capability at the precinct. This redevelopment proposal will focus on addressing the following problems:

- a. **NORFORCE facilities.** The NORFORCE working accommodation is aged and in very poor condition with work health and safety issues. NORFORCE facilities and its functions are currently widely distributed through the precinct, resulting in inefficiencies in capability. The current NORFORCE vehicle maintenance workshops are inadequate and not fit for purpose for the current and future fleet of Army vehicles.
- b. **Engineering Service Infrastructure.**
 - (1) **Electrical Infrastructure.** The incoming electricity supply lacks redundancy and does not have sufficient capacity to support planned developments. The high voltage (HV) distribution system also lacks capacity and redundancy.
 - (2) **Potable Water Infrastructure.** The potable water infrastructure does not meet the supply authority's standards. This is due to the lack of reduced pressure zone devices and also the presence of low flow mains with a potential risk of a contaminated water supply. Much of the underground infrastructure is aged in poor condition and requires upgrading.

- (3) **Fire Fighting Infrastructure.** The firefighting infrastructure is non-compliant due to the lack of a dedicated firefighting network. The existing fire booster pumps and the non-connection of reduced pressure zone devices also do not comply with current standards.
 - (4) **Sewerage Infrastructure.** The existing sewerage infrastructure is aged, blocked in areas and does not comply with local authority standards.
 - (5) **Stormwater Infrastructure.** Stormwater currently overflows into adjoining residences in Cullen Bay.
 - (6) **Information and Communications Technology (ICT) Infrastructure.** Key parts of the ICT infrastructure do not comply with relevant design guidelines, Australian Standards and /or Defence policy requirements. The pits, conduit and cabling infrastructure require upgrading to meet current standards and to improve service capacity.
- c. **Base Working Accommodation.** Five buildings on the site require replacement as they have reached the end of their economic life, are not fit for purpose, are in poor condition, and have work health and safety issues.
- d. Currently Navy personnel on the base who conduct the raise, train and sustain functions associated with the patrol boat capability are physically dislocated in facilities that are not fit for purpose. The Patrol Boat Specialist Program Office is currently accommodated in leased premises in the Darwin CBD. There are also no dedicated training or conference facilities on the base with some training activities currently undertaken in aged non-permanent transportable buildings.
- Base Entry Precinct.** The existing base entry precinct does not provide an integrated security approach and has a number of significant shortcomings including vehicle flow/congestion, lack of inspection space, limited temporary parking, and location of the pass issue facilities are located inside the secure perimeter.
- e. **Landing Craft Tank Ramp.** The existing Landing Craft Tank boat ramp is in poor condition limiting its effectiveness.
- f. **Car Parking.** There is a shortfall of car parking across the base, particularly around *Coonawarra* to accommodate parking demands for existing staff levels.

Description of Proposal

16. The proposed redevelopment comprises the following project elements:
- a. construction of a new facility for NORFORCE (Project Element 1) ²;
 - b. the upgrading of the electrical (2), potable water (3), fire fighting (4), sewerage (5), stormwater (6) and ICT (7) infrastructure;
 - c. refurbishing the Landing Craft Tank boat ramp (8);
 - d. constructing a new Shared User Facility (9);
 - e. constructing a new base entry precinct (10); and
 - f. car park upgrades (11).
17. Proposed project elements that are currently unable to be incorporated under the approved project budget will be considered for later inclusion should there be financial efficiencies gained in the delivery of the higher priority elements. The following project elements are considered to be *‘below the line’*:
- a. construction of new Living In Accommodation (12);
 - b. upgrade to Other Ranks’ Mess (13); and
 - c. gymnasium (14).
18. Key parts of the proposed facilities and infrastructure scope of work included in this redevelopment are also key enablers for the Facilities to Support Naval Operations in the North project³ (FSNON), which is currently the subject of a separate referral to the Joint Parliamentary Standing Committee on Public Works (PWC).
19. Plans showing the proposed building and infrastructure works are provided at Attachments 3 and 4.

² The project element number is shown in brackets for easy reference.

³ The Facilities to Support Naval Operations in the North project was approved by the Government in November 2017 and is the subject of a separate referral to the PWC.

Options Considered to Fulfil the Identified Need

20. To determine the most appropriate infrastructure solutions, Defence undertook master planning and design activities that included extensive user consultation meetings and investigations to establish the functional requirements for each work element of the proposed redevelopment.
21. A ‘Do Nothing’ option was rejected as it did not meet the requirements of the project to ensure the base can maintain its role in supporting ADF capability. A ‘Do Nothing’ option does not address the current significant business continuity, compliance, and work health and safety risks.
22. Adaptively re-using existing infrastructure and buildings was considered, however, many existing facilities and engineering services were found to be unsuitable for cost-effective refurbishment or upgrading to meet user requirements, contemporary building codes and Defence engineering compliance requirements. The NORFORCE facilities requirement is a primary example of the need for new construction. Similarly, the poorly performing engineering services required major re-design, re-routing and capacity increases that could not be provided by augmenting the existing networks.

Environment and Heritage Assessment

Environmental Impact of the Proposed Works

23. An Environment Report (ER) has been completed for the project to consider the proposed activities against the obligations of the Commonwealth’s *Environmental Protection and Biodiversity Conservation Act 1999* (Cth). The ER identifies and assesses the environmental and heritage factors of the project and identifies the risks and recommendations for pragmatic risk mitigation measures. The ER has been prepared consistent with the *Guidance on the Preparation of an Environmental Report* (Department of Defence, version 1.4, July 2014).
24. The assessment concluded that with the application of the recommended mitigation measures, the action of the project will not have a significant impact under the *EPBC Act*, therefore a referral under the *Act* would not be required.

25. The ER identified that the environmental and heritage risks, including indigenous and non-indigenous heritage considerations, are generally low, and are manageable through the development of a site-specific Construction Environmental Management Plan (CEMP).
26. Detailed environmental and heritage site investigations, along with detailed environmental and heritage reporting requirements, have been undertaken to facilitate the likely required government and/or stakeholder approvals (i.e. Commonwealth and/or Territory) and this information has been consolidated in the ER.

Heritage

27. **Indigenous Heritage.** The Larrakia people have two culturally important sites within the precinct: a ceremonial site situated towards the western end of Emery Point and a landmark site comprising a section of beach along the southern side of the peninsula. These sites are recognised in the Larrakeyah Defence Precinct Heritage Management Plan as the Sacred Site Precinct. The Northern Territory's *Aboriginal Sacred Sites Act* protects both known and currently unrecorded sacred sites. The area is divided by the Aboriginal Areas Protection Authority Plan into six zones, which are assigned various work restrictions levels. As part of the NORFORCE redevelopment and some other minor infrastructure works to be undertaken as part of the project, approval was sought from the Aboriginal Areas Protection Authority (AAPA) to undertake temporary construction works in the southern portion of the Sacred Site Precinct. AAPA approval has been achieved and the project will implement management controls specified in the AAPA certificate and provide cultural heritage training to ensure workers are aware of the restrictions within the Sacred Site Precinct.
28. **European Heritage.** Larrakeyah Defence Precinct is registered on the Commonwealth Heritage List. The transit accommodation buildings, current NORFORCE Headquarters building and the Other Ranks' Mess are included in the Larrakeyah Defence Precinct Heritage Precinct, as well as three symmetrical pairs of barracks buildings. The current NORFORCE Headquarters building is the only building that is listed on the Commonwealth Heritage List. Other buildings in the precinct are not individually named as having heritage values, but are named as contributing to its heritage value, principally as examples of 1930's barracks accommodation that includes responses to the tropical climate. The citation for the precinct notes the survival of these buildings through both the bombing of Darwin during WWII and Cyclone Tracy.

29. Defence proposes to undertake refurbishment of the current NORFORCE Headquarters building for alternate use for Army Cadets. The Heritage Impact Assessment for the proposed works has determined that the activities are not expected to impact significantly on the building's heritage values. The building has already undergone extensive internal remodelling since its construction, and the proposed remodelling will not impact on its Commonwealth Heritage significance.
30. Should the transit accommodation buildings be replaced as part of the project (Project Element 12), the proposed design will seek to maintain the heritage values of the precinct. Similarly, should any refurbishment of the Other Ranks' Mess be included in the project (Project Element 13), the proposed works will complement the heritage values of the building and may improve its visual amenity by relocating mechanical plant to a less obtrusive location.

Flora and Fauna

31. Larrakeyah Defence Precinct is a highly modified environment. The precinct is surrounded on two sides by a small area of natural and high quality coastal vine thicket, a form of dry rainforest native to the area. The remainder of the precinct is composed of manicured landscapes, derived and maintained lawns and an abundance of feature trees, palms and garden beds.
32. Fauna habitat within Larrakeyah Defence Precinct is depleted and the likelihood of occurrence of protected fauna species inhabiting the region is low, as outlined in the ER.

Asbestos and Other Hazardous Materials

33. Due to the age of some of the buildings and underground engineering services on the precinct, there is potential for project works to encounter hazardous materials such as asbestos, lead based paints, polychlorinated biphenyls and synthetic mineral fibre materials. An intrusive hazardous material assessment will be required prior to demolition and refurbishment activities to manage the risk of encountering hazardous materials.
34. The removal of asbestos and other hazardous materials from buildings earmarked for refurbishment or disposal, or asbestos cement pipes disturbed during construction, will be undertaken in accordance with the applicable Territory legislation and addressed in the project CEMP. The CEMP will require the site/region asbestos containing material (ACM)

management plan to be updated to manage ACM risks associated with subsurface services infrastructure left in-situ or within refurbished buildings as part of the project.

Contamination

35. The Contaminated Sites Register (CSR) for the precinct identifies six sites that are located within, or adjacent to, the footprint of the project elements 1, 9, 10 and 14. The sites registered on the CSR that have the potential to be impacted or disturbed as part of the project are associated with existing above and underground petroleum storage systems and petrol, oil and lubricant (POL) stores. CSR risk ratings include one site as high, four sites as medium and one site as low.
36. In addition to the sites identified in the CSR, further consideration was given to the historical and current activities in the proposed redevelopment areas, particularly the existing NORFORCE site (project elements 9 and 14) and the potential for site wide ACM contamination of near-surface soils arising from damage during Cyclone Tracy.
37. An intrusive soil contamination investigation was completed in the footprint for the project areas. The laboratory analysis collected from boreholes and test-pits indicated that the concentrations of contaminants of concern were below the adopted investigation levels.
38. Provisions for the management and or removal of contaminated soils and materials have been included in the construction program and cost estimates for the redevelopment.

Per and Poly-Fluoroalkyl Substances

39. No evidence of Per and Poly-Fluoroalkyl Substances (PFAS) has been found during the site investigation works. However, the most recent groundwater sampling event identified low concentrations of Perfluorooctane Sulfonic Acid (PFOS). The concentrations are below the trigger values for the site and are not considered a result of a new or direct source of impact within the last twelve months (GHD 2016).
40. Provisions for the management and or removal of any material identified to contain of Perfluorooctane Sulfonic Acid (PFOS) and of Perfluorooctane Acid (PFOA) will be managed in accordance with the Commonwealth Environmental Management Guidance on PFOS and PFOA (DRAFT), Department of Environment and Energy, October 2016.

Sediment and Water Quality

41. The proposed construction activities have a potential to impact on water quality and marine habitats. Marine investigations have measured sediment and turbidity to assist in assessing sediment transport and water quality issues.
42. The mitigation measures proposed in the ER will treat stormwater runoff from areas under construction to reduce the amount of sediment entering the stormwater system.

Hydrocarbon Pollution

43. The removal of an existing diesel and unleaded petrol refuelling point and vehicle and boat workshop facilities presents a risk of encountering hydrocarbon pollution. Likely areas and volumes of contaminated soil / material have been estimated and a provision made in the project cost plan and schedule for remediating the sites. Further investigations will be undertaken to confirm the volumes and concentrations of any potential contaminants, to enable a contamination management strategy to be implemented during the construction phase of the project.

Unexploded Ordnance

44. A review was undertaken on the available information relating to the Japanese bombing of Darwin, and military activity at the precinct during and after WWII. Based on this review the likelihood of unexploded ordnance being present on the proposed project sites is considered to be negligible.

Key Legislation

45. The following key legislation is relevant to this project:
 - a. *Environment Protection and Biodiversity Conservation Act 1999 (Cth)*;
 - b. *Building and Construction Industry (Improving Productivity) Act 2016 (Cth)*;
 - c. *Work Health and Safety Act (WH&S) 2011 (Cth)*;
 - d. *Work Health and Safety (National Uniform Legislation) Act (NT)*;
 - e. *Work Health and Safety (National Uniform Legislation) Regulations (NT)*; and

- f. *Disability Discrimination Act 1992 (Cth)* (DDA Act).

Applicable Codes and Standards

46. The design of the proposed works will comply with all relevant and current Defence standards, Australian standards, codes and guidelines including, but not limited to:
- a. National Construction Code – 2016 Building Code of Australia (NCC 2016);
 - b. Defence Manual of Infrastructure Engineering – Electrical (MIEE);
 - c. Defence Manual of Fire Protection Engineering (MFPE);
 - d. Defence Estate Quality Management System; and
 - e. Defence Security Manual.
47. An accredited building certifier has been engaged to certify the compliance of the design and will be engaged to certify compliance of the completed works.

Consultation with Key Stakeholders

48. To develop the requirements and proposed solutions for this redevelopment, extensive consultation has been undertaken with the relevant Defence users and technical authorities.
49. Defence has developed a comprehensive consultation and communications strategy that recognises the importance of providing local residents, statutory authorities and other interested stakeholders, including special interest groups, an opportunity to provide input into, or raise concerns relating to the proposed works.
50. As part of this strategy, the following communication methods have been or will be adopted:
- a. letterbox drops to neighbouring residential areas confirmed as affected by the construction works;
 - b. community information sessions; and
 - c. local newspaper advertisements.

51. In implementing this strategy, consultation has occurred or will occur, with the following key external stakeholders:
- a. Federal Member for Solomon, Mr Luke Gosling OAM, MP;
 - b. Northern Territory Senator, the Hon Nigel Scullion;
 - c. Northern Territory Senator, Malarndirri McCarthy;
 - d. Territory Member for Port Darwin, Mr Paul Kirby MLA;
 - e. Northern Territory Chief Ministers Department;
 - f. Northern Territory Department of Transport;
 - g. Northern Territory Department of Trade, Business and Innovation;
 - h. City of Darwin;
 - i. Aboriginal Areas Protection Authority;
 - j. Local Indigenous Group (Larrakia people);
 - k. Larrakeyah Primary School;
 - l. Cullen Bay Marina Management Corporation;
 - m. Power and Water Corporation (P&WC);
 - n. NT Chamber of Commerce;
 - o. Larrakeyah Terrace residents; and
 - p. Master Builders Association
52. Defence plans to conduct two community information session prior to the PWC hearing.

Purpose of the Works

Project Objective

53. The objective of this project is to provide reliable, flexible and sustainable infrastructure and facilities at Larrakeyah Defence Precinct to address current deficiencies and infrastructure risks and to provide for future growth of the precinct population.
54. To achieve this objective, the proposed redevelopment will:
- a. improve the efficiency and effectiveness of the infrastructure that directly supports ADF capability and operations;
 - b. improve business continuity and operational support by increasing capacity and providing redundancy in critical infrastructure;
 - c. improve work health and safety and productivity for ADF personnel and contractors by replacing or upgrading temporary/demountable and aged facilities which are not effectively meeting the users' requirements, and by addressing non-functional, ineffective, or unsafe aspects of existing workplaces;
 - d. improve compliance with the NCC 2016 and DDA Act by addressing existing sub-standard conditions;
 - e. improve compliance with Defence standards related to security, fire protection, and electrical engineering infrastructure;
 - f. maintain Defence's reputation for conserving and adaptively re-using heritage buildings where possible;
 - g. adopt eco-friendly design principles in proposed facilities that reduce energy use, water consumption, waste generation and maintenance costs to minimise Defence's environmental impact and operating costs;
 - h. minimise Defence's footprint by consolidating like functions into one facility to reduce maintenance costs, removing redundant facilities, and by replacing existing non-effective facilities with fewer facilities that meet Defence's functional requirements to reduce operating and maintenance costs; and

- i. provide facilities and infrastructure that are consistent with the long-term estate planning objectives for Larrakeyah Defence Precinct.

Detailed Description of the Proposal

Project Element 1 - Construct New NORFORCE Facilities

55. New modern facilities are proposed to be consolidated in the central zone of the precinct for NORFORCE. A plan and elevation drawing of the proposed NORFORCE development is at Attachment 5.
56. **Headquarters and Training Facility.** The NORFORCE Regimental Headquarters, Darwin Squadron Headquarters, Training Squadron Headquarters and the Training Squadron facilities are proposed to be collocated in a single, two-storey building. The Headquarters functions are proposed to be located on the upper level of the building in a predominately open plan environment, but with shared ablutions, brew areas, meeting rooms, and support services. Spaces requiring additional levels of physical security, such as an operations room, are proposed to be located within a secure zone. The ground floor is proposed to provide two large classrooms that can be opened into one larger briefing space and a large undercover training space which adjoins the grassed external training area. Showers and locker areas and personal field equipment storage is proposed to be located at the eastern end of the ground floor.
57. **Operational Support Squadron.** All Operational Support Squadron (OSS) functions are proposed to be collocated in a separate two-storey building. OSS headquarters, Technical Support Troop, Transport and Marine Troops, and Logistics Troop and Medical Section functions will be collocated in a flexible open plan office on the upper level of the building.
58. The vehicle and marine technical support workshop is proposed to be a large, high-roofed area. Service and repair bays are proposed to be arranged to enable vehicles and trailers to drive through the workshop area, with roller shutters providing vehicle access. Large cantilevered awnings will provide protection from rain and sun. Support and ancillary spaces, including the repair parts store, the marine repair space, the unit armoury, the Signals Section store and the Caterer Section kitchen space will be located on the lower level of the building. Shared ablutions, showers and lockers, and mission specific equipment storage will be centrally located on this level.

59. The Quartermaster Store (Q-Store) will be a large, high-roofed space, with caged areas, and modern flexible racking systems. A forklift accessible, drive-through space will enable goods to be loaded and unloaded.
60. **Compound and vehicle shelters.** Detached vehicle shelters will be located adjacent the compound to accommodate the unit's vehicles and boat storage. Each vehicle bay is provided with a separate locker to secure the vehicles loose equipment and a wheel stop. The size of each bay is based upon dimensions developed for the Land 121 Unit Sustainment Facilities project⁴ for comparable vehicle variants.
61. A higher two-sided shelter structure will also be provided enabling Regional Patrol Boat Craft to be stored on trailers with the medium variant vehicles that tow them.
62. The compound layout enables Darwin Squadron vehicles that are prepared and ready to deploy to be stored in a secured area.
63. **Consequential Works for Cadets.** The existing Headquarters Northern Territory Australian Army Cadets Battalion Facility Q-Store and 70 Army Cadet Unit's building is proposed to be demolished as part of the NORFORCE project works. The unit will be relocated to the existing Headquarters NORFORCE building, which is proposed to be refurbished. The Q-Store will be replaced with a new 120m² facility.

Project Element 2 - Upgrade the Electrical Services Infrastructure

64. A major upgrade of the Precinct's electrical supply and distribution system is proposed as a key part of the redevelopment. A plan of the proposed electrical services infrastructure is at Attachment 6. Key features of the proposed upgrade include:
- a. **Incoming Supply.** The HV incoming supply will be upgraded to a firm capacity of 10 MVA, to meet the forecast load for the next 25 years, by constructing two new dedicated underground 11kV incoming supply cables from the Power and Water Corporation (P&WC) distribution system, to supplement the existing dedicated

⁴ Project Land 121 was referred to the PWC in Sep 2015 and Parliamentary Approval, 'expediency motion' in Feb 2016.

underground incoming supply cable supplying the precinct. The existing backup overhead incoming supply will be decommissioned from the precinct;

- b. Two new P&WC intake switch rooms will be established within new Defence Intake Switching Stations constructed inside the secure zone. The proposed locations for the Switching Stations meet the project objectives of efficient and effective planning with regards to the precinct master planning and zone planning, and they comply with the precinct heritage and environmental requirements;
- c. **HV Distribution Network.** The existing single ring feeder HV network will be reconfigured and upgraded to an MIEE compliant multiple ring feeder network between the switching stations, comprising a dedicated underground interconnector cable and three separate ring feeders.
- d. The existing electric cable supplying *Coonawarra* is at the end of its functional life and will be replaced with a new cable rated for a minimum capacity of 6 MVA.
- e. **Complementary Works.** Complementary electrical works proposed will include:
 - (1) Two substations will be physically displaced by the project and will be replaced. A third substation will also be replaced due to condition / compliance issues, and a fourth substation will be relocated as part of the Facilities to Support Naval Operations in the North project;
 - (2) Repairing / replacing existing low voltage (LV) distribution switchboards in buildings directly impacted by the redevelopment. The existing overhead feeder to Emery Point will be retained due to constraints associated with undergrounding this feeder within the Sacred Site Precinct.
 - (3) Providing a new Local Emergency Generator to the new Pass Office and relocating an existing unit to serve the new ICT Node;
 - (4) Installing a monitoring system using Supervisory Control and Data Acquisition technology to monitor the HV/LV systems;
 - (5) Installing LV power factor correction units for any new facilities where the expected load power factor is less than 0.9 lagging; and

- (6) Providing new consistent street and pedestrian lighting along Allen Avenue including the new Base Entry Precinct, along the road in front of the new NORFORCE precinct, and along the new Nurses Walk Link Road.

Project Element 3 – Construct New Potable Water Infrastructure

- 65. The proposed new potable water services infrastructure will replace the existing service across the whole of the precinct, with the exception of the service residences and the Plenary (Single LEAP) LIA precinct. A plan of the proposed potable water infrastructure is at Attachment 7.
- 66. Complementary ancillary works will include:
 - a. Provision of smart meters and backflow prevention to new and existing facilities; and
 - b. Provision of backflow prevention to irrigation offtakes.

Project Element 4 – Upgrade the Fire Fighting Infrastructure

- 67. The proposed new fire fighting water supply includes dedicated fire water main, pumps, water storage tanks and fire brigade suction boosters. A plan of the proposed firefighting water supply is at Attachment 8. Key features of the proposed upgrade are detailed below.
- 68. **New Dedicated Fire Water Ring Mains.** The current arrangement of a combined fire and potable mains is not compliant with the P&WC standards. To achieve a compliant potable water system, a dedicated fire main is being provided within the precinct area. This fire main will connect to all new buildings and provide new fire hydrants as required by the relevant standards.
- 69. **New dedicated fire water suction booster, pumps and tanks.** New fire water tanks suction boosters and pump house are located at the new base entry precinct. Access to the tanks, pumps and suction boosters will be via Allen Avenue off the precinct in a position commensurate with the operational requirements of the Northern Territory Fire and Rescue Service (NTFRS).
- 70. **Fire Detection and Alarm System.** The existing fire detection and alarm system fibre communications network will be extended.

Project Element 5 – Upgrade the Sewerage Infrastructure

71. A plan of the proposed upgraded sewerage infrastructure is at Attachment 9. The new gravity and rising mains will include replacement of the gravity sewerage network where they are currently deficient in capacity, condition or compliance;
72. Any asbestos cement pipework found during the works will be disconnected and removed from the site in accordance with the CEMP.

Project Element 6 – Upgrade the Stormwater Infrastructure

73. The proposed stormwater network will be configured as two defined catchment areas: eastern and western. A plan of the proposed upgrading of the stormwater infrastructure is at Attachment 10.
74. The proposed design provides additional stormwater pipes and increases the number of inlet pits. The new stormwater upgrade works is contained within two defined catchment areas:
 - a. **Eastern network:** This network will increase the capture of the overland flow in a new open unlined drain (OUD). This drain will discharge into the existing City of Darwin (CoD) outfalls.
 - b. **Western network:** While also providing additional inlet pits, this network will provide connection to the existing piped systems that discharge into Cullen Bay. This stormwater will be diverted to the south into the main trunk line that is located adjacent to the Oval. This trunk will be extended along the eastern kerb of Steele Street until it enters a drop structure which transfers the stormwater down to the hardstand area. The stormwater is then discharged into Darwin Harbour in the north-western corner of the hardstand. The NORFORCE facility will also connect into this system through a new main along Allen Avenue.
75. Gross pollutant traps will be installed at the existing and new outfalls and additional stormwater controls will be installed at facilities that have higher risk discharges such as oily wastes.

Project Element 7 – Upgrade the ICT Infrastructure

76. The proposed upgrading of the ICT infrastructure will feature a new ICT Core Node building, which is then connected via a new fibre based infrastructure to the various buildings on the precinct. The existing pit and conduit system will be upgraded to accommodate the new cabling and to provide capacity for growth. A plan of the proposed ICT infrastructure is at Attachment 11.
77. **ICT Core Node.** The proposed new ICT Core Node replaces the existing ICT Core Node facility which has reached the end of its economic life. The new ICT Core Node will be centrally located to improve connectivity to all users, will consolidate key ICT equipment in one building, provide space for growth and improve the workplace health and safety of maintenance activities. Classified and unclassified systems will be separated. Building services will be separately accessible by tradespersons and electronic access control will restrict access. Physical and electronic security will comply with the relevant Defence security standards.
78. **Pits and Conduits.** New sections of pits and conduit will be installed as indicated in Attachment 11. Two pathways along Allen Avenue will provide diversity between Core Nodes and provide connectivity to all users across the Larrakeyah Defence Precinct. Some sections of the existing in-ground infrastructure are in good condition and have sufficient spare capacity in accordance with current policy. These sections will be reused, while new infrastructure will be provided to replace sub-standard infrastructure. All new conduits will have spare capacity in accordance with current policy.
79. **Cabling:** New Single Mode Optical Fibre cabling, suitable for underground installation, will be reticulated from the new ICT Core node to all buildings on Larrakeyah Defence Precinct via this infrastructure.
80. The notable exception to the intended ‘all fibre’ infrastructure is the section of existing copper cabling along the southern side of Allen Avenue from the site of the new ICT Core Node up into the Service Residences. These particular cabling runs will be retained for reuse by NBN Co, as their equipment relies on copper final connections.
81. The majority of existing communications cabling will become redundant once the new ICT Core Node is activated and the existing communications node is decommissioned. The intention is to remove such cabling where possible, subject to the condition and proximity to

other services. However, cabling will be left in-situ and abandoned if it is unable to be removed without damaging newly installed cabling.

82. **Defence Engineering Services Network (DESN).** The DESN will be re-cabled and connected to all existing and new buildings. Network switches for each individual building service will be provided and configured to operate over the DESN. Services plant that is located remote from buildings and which is unable to be readily re-cabled will be reconnected using wireless means. Energy metering applications such as substations, meters, radios, and antennae will meet the requirements of the Defence National Sub-Meter Program.

Project Element 8 – Refurbish the Landing Craft Tank Ramp

83. The proposed refurbishment of the Landing Craft Tank boat ramp includes repairing the rock revetment, repairing the concrete ramp and joints (or replacing the existing cracked concrete panels as required) and providing additional scour protection at the ramp toe. The location of this element is shown in Attachment 4

Project Element 9 – Construct a Shared User Facility

84. The proposed shared user facility will be a compact two storey building providing flexible office accommodation for approximately 112 personnel plus classrooms and training rooms for use by the Precinct. Plans of the proposed shared user facility are at Attachment 12.
85. The proposed units and occupants relocating to the shared user facility include:
- a. *Coonawarra* command elements;
 - b. Fleet Support Unit;
 - c. Patrol Boat Group;
 - d. Fleet Training Advisory Cell;
 - e. Base Services - Defence and EMOS staff;
 - f. Navy Personnel Career Management Authority; and
 - g. Customer Service including Registry.

86. The foyer is accessed from the Junior Sailors' Car Park (as shown in Attachment 14) to the north and includes a staircase that provides access to the centre of the office floor above.
87. Training Room Facilities, the Customer Service Centre and Registry are located at ground level, easily accessed from the foyer area. Service and plant spaces, as well as amenities, showers and lockers, are located on the north side of the building, providing a buffer to adjacent Service Residences.
88. Office areas are located on the upper level. These are arranged as a flexible open plan configuration with views to the south over the wharf. A breakout area is centrally located and breaks up the larger open plan area. Enclosed spaces, such as individual offices, meeting and quiet rooms, and utility rooms, are located on the north side of the open plan area.

Project Element 10 – Upgrade the Base Entry Precinct

89. Significant changes to the base entry precinct are proposed to meet Defence security standards. A plan of the proposed base entry precinct is at Attachment 15.
90. A new Pass Office will be provided on the south side of Allen Avenue. A new roundabout will provide access to the Pass Office car park, a future connection to Stevens Terrace and to two queuing lanes for the new base entry point, as well as a truck parking and vehicle inspection bay. One queueing lane will have automatic electronic card access for Defence card holders. Two sets of entry and exit boom gates will be provided, with one set at the guardhouse, and the second further west along Allen Avenue, allowing rejected vehicles to be monitored as they turn around. A pedestrian access gate will control pedestrian access. The existing footpath and bike path to the north of Allen Avenue will be upgraded to provide safe access for children and their carers travelling between the base and the primary school, as well as base personnel accessing the site on foot or by bicycle. Bicycle storage will be provided adjacent to the pedestrian gate. A new connection road will link Allen Avenue and Nurses Walk to the west of the interim Larrakeyah Health Centre.
91. **Roadworks Augmentation:** Extensive modifications to the existing vehicular entrance are required to address significant deficiencies in the existing base entry precinct. These include:
 - a. A new roundabout located inside the Defence property line, providing base entry and a means for those who do not need to enter the base to turn around without having to pass through the security checkpoint;

- b. A connection into Stevens Terrace is provided through double gates in the new security fence to allow for alternate controlled access should it be required;
- c. A connection to Nurses Walk is provided through the new Pass Office car park through double gates in the security fence to allow for controlled alternate or emergency access;
- d. Accommodation for B-double heavy vehicle access;
- e. Off-street parking area for passenger vehicles, facilitating access to the Pass Office via pedestrian paths;
- f. On-street layby area on the southern side of Allen Avenue for heavy vehicles to park and obtain their passes or to be security inspected; and
- g. Two entry lanes, including the facility to reject vehicles via a return road at the first guard post / boom gate, with gates in the security fence at the exit of the rejected vehicle turnaround area.

92. **Vehicle Inspection and Control:** Security controls have been established through a situational approach from the integration of Crime Prevention through Environmental Design concepts and a Security-in-Depth ‘hardening’ of the base. These include:

- a. Guardhouse at the entry lanes for guards to perform vehicle and pedestrian screening, natural and CCTV surveillance, control access and egress, communication with base-wide guard forces and take refuge and activate base-wide alert systems.
- b. Vehicle inspection will be conducted at two designated locations – the first (for incoming vehicles) will use a portion of the truck lay-by area on the approach road, and the second (for exiting vehicles) will use a portion of the vehicle rejection loop prior to the guardhouse. The vehicle inspection areas will be under constant surveillance.
- c. Vehicle boom gates (although not considered barriers) will provide general traffic flow control and an opportunity for guards to halt a vehicle for greater scrutiny and identity documentation checks.
- d. A “road blocker” vehicle barrier that will be manually activated from within the guardhouse.

93. **Other Security Features.** The base will be enclosed by a standard Class 2 perimeter fence. Pedestrian gates will be integrated into the base entry and perimeter fence line for Base visitors entering by foot after being screened at the Pass Office. A second gate will also be provided in the perimeter fence to be used predominantly by children of personnel living in the DHA service residence precinct to enter and leave the Base. Lighting will be provided to complement the other security measures. The security control point within the Pass Office will control and monitor all security cameras and the proposed Electronic Access Control System. A base-wide alert system will be provided, with new sirens mounted on the street light poles around the base.
94. **Pass Office.** A new Pass Office will be constructed to provide an upgraded suite of ICT services and to accommodate a small waiting area and front counter area, a Defence pass issue office accessed directly from the waiting area, an accommodation cell office, a Duty Watch room, and a small meeting room.

Project Element 11 – Replace the Junior Sailors’ Car Park and Construct a New Fuel Point

95. **Car Park.** The proposed car park will be located adjacent to the proposed new Shared User Facility (SUF) and will provide 300 car spaces for ADF personnel, civilians and contractors working in or visiting *Coonawarra*, the new SUF, and adjacent areas of the barracks within a radius of 400 metres. The new carpark will replace 155 car parks displaced by other project elements, plus rectify the current shortfall in parking in this area, as well as accommodating the increase in visitors to the training facilities at the Shared User Facility. The car park will be sealed and include line marking, kerbs, stormwater drainage and covered walkways. Car park lighting will be provided using LED technology and will minimise spill lighting into neighbouring properties. An alternative stair access will also be provided to *Coonawarra*.
96. **Fuel Point.** It is proposed to establish a fuel point with self-contained tank, bowser, pump, and control skid positioned at the existing tanker unloading bay. This 10KL tank would be filled from the bulk tanks as required using the bunker pump system and main fuel control system.

Project Elements 12 -14 – Below the Line Project Elements

97. Project Elements that are currently unable to be incorporated under the approved project budget will be considered for later inclusion should there be financial efficiencies gained in

the delivery of the higher priority elements. The following Project Elements are considered to be '*below the line*' and have received Government approval for delivery if sufficient savings become available. They are not listed in order of priority and will be considered for inclusion on an affordability basis.

- a. **Project Element 12 – Construct new Living In Accommodation (LIA).** Two existing transit accommodation buildings were constructed in 1940, these are now aged, in poor condition and not fit for purpose. They would require significant refurbishment or construction of a new facility in order to bring them up to modern standards to meet WHS and NCC 2016 requirements. The endemic issues with concrete cancer in these buildings mean that they are intrinsically unstable and require rectification for continued occupancy. After significant value management throughout the development of the project the construction/refurbishment of new LIA fell below the in-budget line. The proposed mitigation strategies are to utilise accommodation in another location, recognising that the movement of personnel between bases will cause impact on daily training hours. The ongoing maintenance to these buildings will continue to occur under the existing maintenance contract.
- b. **Project Element 13 – Upgrade the Other Ranks' Mess.** The Other Ranks' Mess is in poor condition requiring significant works to bring it up to current compliance and WHS standards. Although useable in its current state it does not have the flexibility to meet future demand expected at Larrakeyah Defence Precinct. The ongoing maintenance to this Mess will continue to occur under the existing maintenance contract.
- c. **Project Element 14 – Gymnasium.** This facility is no longer fit for purpose, lacks capacity and requires refurbishment / replacement as it does not meet the current requirements. The gymnasium has insufficient room for the required fitness equipment, inadequate floor space and has poor equipment storage facilities. The lack of an outdoor covered training area impacts on the ability to conduct physical training and rehabilitation activities, particularly in periods of inclement weather.

Details and Reasons for Siting Selection

98. For each of the proposed new buildings, Site Selection Boards (SSB) have been completed in accordance with the approved Zone Plan and Defence Estate development guidelines. The SSB typically considers the suitability of the site for the proposed function, the locations of related functions, access to services and infrastructure, movement by vehicles and pedestrians to and from the site, and heritage and environmental management factors.

Zoning and Local Approvals

99. All elements of the proposal are located within the boundaries of Commonwealth-owned and Defence-controlled land. Accordingly, no civilian authority or design approvals are required, although the works will comply with relevant standards and regulations (where applicable).
100. The proposed redevelopment complies with the Defence approved Larrakeyah Barracks Zone Plan dated 24 June 2009.
101. **Additional Planning Considerations.** In addition to complying with the Zone Plan, the proposed redevelopment has considered the following requirements:
- a. In order to minimise the disruption to local residents during construction, a temporary entry will be constructed off Larrakeyah Terrace whilst the existing entry is being redeveloped.
 - b. Layout of the NORFORCE precinct to prevent any encroachment to the Sacred Site Precinct.
 - c. Planning of the base entry precinct needed to integrate Crime Prevention through Environmental Design concepts with security-in-depth considerations, to provide adequate surveillance, separate and provide barriers to vehicle and pedestrian traffic, and provide traffic calming.
 - d. Planning for the facilities located in or around *Coonawarra* needed to consider and complement the planning of facilities and infrastructure included in the separate proposed Facilities to Support Naval Operations in the North project. This consideration was particularly relevant for planning the routes for the proposed new underground services, the location of the proposed shared user facility, car park and vehicle fuel point.

Planning and Design Concepts

102. The general design philosophy for the proposed facilities incorporates the following considerations:

- a. provision of cost effective and functional facilities of energy efficient design suitable for the climate and of a style compatible with the existing Larrakeyah Defence Precinct aesthetics;
- b. adoption, where possible, of conventional construction techniques and materials, in particular those commonly used by the construction industry and consistent with those already utilised on the Larrakeyah Defence Precinct;
- c. design that maximises the opportunity for local industry to participate;
- d. maximum use of existing infrastructure and facilities to minimise capital costs;
- e. use of readily available and durable materials that combine long life while minimising maintenance;
- f. infrastructure services planning and structure design taking into account future flexibility, projected demand and Defence policies for reliability and redundancy;
- g. recognition of site constraints, security requirements, the established Zone Plan, and functional relationships to existing facilities; and
- h. planning services and structural design to accommodate flexibility.

Structural Design

103. The structural design for any new construction, upgrading or refurbishment will be consistent with the Larrakeyah Defence Precinct environmental and geotechnical conditions. Where appropriate, industrial-type solutions have been developed, including portal frames, precast dado panels, insulation panelling or lightweight metal cladding.

Materials

104. External walls for new and extended buildings will be a mixture of precast concrete, metal cladding, masonry and glazing, consistent with surrounding Larrakeyah Defence Precinct environs and if required, the Heritage Management Plan. Metal deck roofing will be used on

all proposed new buildings. The external materials have been selected for their resilience to the harsh coastal environment.

Mechanical Services

105. The mechanical services for each proposed new building have been designed according to the function and needs of each building. The proposed mechanical services will meet specific user needs, relevant ventilation, thermal comfort and air quality requirements, and the mandatory requirements of the NCC 2016.

Hydraulic Services

106. All new stormwater pits and modifications to existing pits will be constructed in steel reinforced concrete to the relevant standards to meet a 100-year design life. Where new stormwater quality treatment devices are required to prevent pollution of local water catchments, appropriate devices will be designed or selected from standard units, to meet local site constraints, flow rate requirements, and to manage the potential pollutants.

Electrical Services

107. Lighting, power and lightning protection works will be provided in accordance with Australian Standards and Defence engineering requirements.
108. Electrical infrastructure and switchboards will have spare capacity in accordance with Defence policy to allow for future growth. Sub-metering will be included in new buildings and where deemed appropriate in refurbished buildings. The meters will be monitored by the Building Management System, which will support an active energy management program on site.

Acoustics

109. The new facilities will comply with the NCC 2016 and Australian Standards for noise and acoustics. Acoustic separation has been considered between rooms, and walls and partitions are being designed to meet the occupants' functional requirements.

Fire Protection

110. All construction and fire protection requirements will, as a minimum, be in accordance with the provisions of the NCC 2016, Defence MFPE, and all other applicable codes and Australian Standards.

Security

111. Advice from designated security authorities has been incorporated in the design solutions for the proposed facilities when appropriate. The proposed security features will comply with Defence's Security Manual.

Environmental Sustainability of the Project

112. The Commonwealth is committed to Ecologically Sustainable Development (ESD) and the reduction in greenhouse gas emissions. Defence reports annually to Parliament on the energy efficiency targets, established by government, as part of its commitment to ESD. Defence also implements policies and strategies in energy, water and waste to improve natural resource efficiency and to support its commitment to the reduction of energy consumption, potable water consumption and waste diversion to landfill.
113. The project has adopted cost effective ESD measures as a key objective in the design and development of project elements. These measures have been incorporated into the design of most aspects of the proposed works and include:
- a. **Minimising Energy and Greenhouse Gas Emissions.** Strategies to minimise energy and greenhouse gases include adopting passive building design principles for new facilities, using energy efficient heating, ventilation, and air conditioning systems, lighting and control systems, maximising natural ventilation, and installing energy management systems.
 - b. **Reducing Water Use.** Specifying water efficient fixtures and fittings will reduce potable water use. Where landscaping works are proposed, the irrigation systems and urban design will be water efficient.
 - c. **Improving Indoor Environment to Maximise Occupant Comfort.** Improving daylight in occupied spaces, providing shading for privacy and glare control, optimising building orientation, and using low volatile organic compound paints,

carpets and adhesives, as well as low emission wood products will improve air quality and occupant comfort levels.

- d. **Smart Metering.** Smart meters will be installed in accordance with the requirements of the Defence National Sub-Meter Program and will be suitable for connection to Defence National Resource Data Management System; and
- e. **Pollution Control Measures.** Interceptors / separators to collect and treat contaminants such as oil, grease, litter and sediment will be provided in all new facilities. Spill containment will be provided for fuel services.

Energy Targets

- 114. The requirements of Defence's SMART Infrastructure Manual and Building Energy Performance Manual (BEPM) have been adopted for the proposed new and substantially refurbished buildings.
- 115. Sub-metering will be installed to new buildings and infrastructure in accordance with the requirements of the NCC 2016 Section J, and Defence's SMART Infrastructure Manual and BEPM.

Landscaping

- 116. Landscaping works will be completed to restore areas disturbed during construction and provide general improvement to the built environment. Landscaping design will focus on the functional, low maintenance and water sensitive approach using plants that are indigenous to the area
- 117. Landscaping practices will be adopted to be sympathetic with local environmental conditions. Planting will be undertaken to compensate for trees removed as part of the construction activities. Appropriate planting will be undertaken in consultation with Defence's Regional Environmental Officer who has assisted in identifying appropriate species and locations.

Compliance with Local, State/Territory and Commonwealth Water and Energy Policies

- 118. All buildings will be designed, constructed, operated and maintained in order to use energy and water as efficiently as possible and to comply with the following statutory and Defence requirements:

- a. Section J of the NCC 2016;
- b. Commonwealth Energy Efficiency in Government Operations Policy 2007;
- c. Department of Defence Building Energy and Performance Manual, Version 4 – December 2012;
- d. Department of Defence SMART Infrastructure Manual, Version 1 – May 2015;
- e. Department of Defence Water Management Strategy 2006-2009; and
- f. Department of Defence Waste Minimisation Policy 2007.

Workplace Health and Safety Measures

- 119. The Australian Government is committed to improving work health and safety outcomes in the building and construction industry. This proposed redevelopment will comply with the requirements of the *Work Health and Safety Act 2011(Cth)*, Work Health and Safety (Commonwealth Employment – National Standards) Regulations and relevant Defence policies.
- 120. In accordance with the *Building and Construction Industry (Improving Productivity) Act 2016*, project contractors will also be required to hold accreditation from the Office of the Federal Safety Commissioner under the Work Health and Safety Accreditation Scheme.
- 121. Safety aspects of the proposed redevelopment have been addressed during the design development process and have been documented in a Safety in Design Report. A Work Health Safety Plan will be required to be developed for the construction phase prior to the commencement of any construction activities.
- 122. All construction sites will be secured appropriately to prevent public access, or access by unapproved Defence personnel, during the construction period. No special or unusual public safety risks have been identified.

Provisions for People with Disabilities

123. Access for people with disabilities will be provided in accordance with the NCC 2016, Australian Standard AS1428⁵, the DDA Act, and the Defence Policy ‘Disabled Access and other Facilities for Disabled Persons’. Where the requirements of the NCC 2016 have not been met, an alternative design or management strategy has been proposed and documented in an Alternative Solution Report which has been developed in consultation with Defence.
124. Access for people with disabilities is not required to some areas in the proposed new facilities, which are exempt under section D3.4 of the NCC 2016 as access for people with disabilities would be inappropriate because of the particular purpose of the area.

Childcare Provisions

125. No childcare facilities are being provided under this project.

Public Transport, Local Road and Traffic Concerns

126. There is no increase to the Precinct’s population arising from this project.
127. During construction, there will be an increase to the number of large vehicles entering the Larrakeyah Defence Precinct delivering materials to site and undertaking construction activities. The effects of this increase on the internal and external road networks will be mitigated through the development of a Traffic Management Plan, ongoing and regular coordination of all construction activities with local Defence authorities, and de-confliction with peak traffic times such as Defence work starting time, school drop off and pick up times.
128. The plan may include the following construction traffic management measures:
- a. Use of an alternate entrance off Larrakeyah Terrace during the redevelopment of the existing entry point minimising disruption to most local residents and the school;
 - b. continue consultation with the NT Department of Infrastructure, Planning and Logistics’ transport section;

⁵ AS 1428 – 2010: Design for access and mobility

- c. maintaining compliance with construction hours;
- d. limiting project traffic during school drop off and pick up times;
- e. limiting project heavy vehicle movements to outside of peak traffic hours;
- f. having project heavy vehicles follow a designated route; and
- g. applying speed restrictions for construction vehicles on local roadways and on site to reduce the likelihood of accidents.

129. Once the new front entrance is opened there will be a significant improvement to the traffic congestion in Packard Street and Larrakeyah Terrace. This will be due to an increase from one incoming lane to two lanes with one of the lanes having automated swipe access, which will significantly increase throughput. The relocation of the guardhouse from the boundary to inside the Precinct will result in most of the traffic queuing for access inside the base away from the Larrakeyah Primary School. Additionally, the provision of a roundabout inside the Precinct should enable safer turnarounds by the public at the end of Packard Street than the current practice of three point turns in front of the current guardhouse and school. After the construction of a temporary entrance this will be the first works package under construction to minimise the effect on the local community.

Impact on Local Community

130. While the proposed construction sites are within the establishment's boundaries and construction activities are not expected to cause noticeable disruption to businesses and most residences located near Larrakeyah Defence Precinct, some aspects of the construction may be of concern to the community. These aspects include:

- a. air emissions from construction and operational activities;
- b. increased traffic on local (residential) road network during construction and operation (particularly on Larrakeyah Terrace); and
- c. noise and vibration impacts from trenching and rock breaking for engineering services and construction of facilities.

131. A number of specialist investigations have been completed during planning phase to assess the potential impact of the project and to ensure appropriate mitigation measures are implemented. Investigations undertaken included:
- a. A traffic study of the area outside the base to understand the current traffic impacts on the surrounding residents in particular on Packard Street and Larrakeyah Terrace;
 - b. An assessment of terrestrial noise to help manage community concerns and social impacts. The assessment included baseline noise monitoring at representative receptors to assess existing noise levels and develop criteria to use for the construction and operation and present mitigation options.
 - c. An air quality impact assessment was completed and involved a review of the baseline climate and background air quality, an atmospheric dispersion modelling study to assess the potential air quality impacts associated with the proposed project at identified sensitive receptors, and review of mitigation options;
 - d. A visual impact assessment to help manage community concerns or in response to stakeholder requirements, including an assessment of the existing visual character of the proposed wharf development and surrounding areas; assessment of impact and identification of measures to mitigate potential visual impacts.

Other Matters Raised by the Community and Local Authorities

132. There have previously been concerns raised by the neighbouring residences in Cullen Bay who have experienced stormwater overflows from the Larrakeyah Defence Precinct. The proposed stormwater scope in this project has been increased to address these concerns including diverting stormwater from the northern side of the precinct to discharge into the harbour on the southern side in an environmentally appropriate manner.
133. The P&WC have requested that Defence divert the current sewerage outflow plan to address capacity issues. The proposed sewerage infrastructure scope addresses this concern by discharging all sewage to the Larrakeyah Terrace outfall connection and freeing up capacity in the Kahlin Oval pump station

Construction Environmental Management Plan

134. The Managing Contractor will be required to manage all construction activities, in accordance with the CEMP, to minimise any disruption to the local community. This plan will include control measures designed to mitigate potential impacts on Defence and local communities such as increased on-base and local traffic movements; noise, dust and vibration generated during construction activities; and erosion and sediment control required during the construction phase to protect the environment.

Related Projects

135. The following projects are planned to deliver facilities or infrastructure at Larrakeyah Defence Precinct during a similar period of delivery for this project. Each of the following projects has been taken into consideration when developing this proposal and a coordinated projects site plan is at Attachment 3.
- a. The Facilities to Support Naval Operations in the North project proposes a new wharf, associated hardstand, access road and a new ready use fuel facility at Coonawarra.
 - b. The Offshore Patrol Vessel (OPV) Facilities Project proposes to upgrade and extend the Attack Wharf and strengthen the Fremantle Wharf to support the larger OPV. It also proposes to provide new working accommodation, maintenance and support facilities. The OPV project will require upgraded engineering services.
 - c. The Joint Health Command Garrison Health Facilities Upgrade project will deliver a permanent health facility at Larrakeyah Defence Precinct to replace the existing interim facility. The PWC Hearing for this project occurred in January 2018 and subject to approval, construction is currently planned for the period July 2018 to June 2019.
 - d. A component of LAND 121 Phase 3A Project Overlander will deliver new light, medium and heavy vehicles to NORFORCE. The requirements of the new vehicles have been considered in the planning of the proposed NORFORCE facilities.
 - e. A component of the Defence Terrestrial Communications Network Facilities Project will occur at Larrakeyah Defence Precinct.

Cost Effectiveness and Public Value

Outline of Project Costs

136. The estimated out-turned cost of this project is \$223.00 million, excluding Goods and Service Tax. The cost estimate includes the construction costs, management and design fees, furniture, information communications technology, fittings and equipment, contingencies, and escalation allowance.
137. Future sustainment costs related to this project of \$4.2 million per annum are anticipated due to the addition of new facilities and infrastructure which will require additional maintenance, cleaning and utilities expenses.

Details of the Project Delivery System

138. A Project Manager / Contract Administrator (PM/CA) has been appointed by the Commonwealth to manage the projects works and associated administration of the contracts during the Planning Phase. Subject to Parliamentary approval, value for money assessments and satisfactory performance of the PM/CA, the Commonwealth may extend the PM/CA Contract into the delivery phase of the proposed works.
139. A Managing Contractor has been engaged to undertake the design of the facilities, which have been completed to 50% Schematic Design stage. Subject to Parliamentary approval of the project, value for money assessments and satisfactory performance, the Commonwealth may extend the Managing Contractor's contract into the delivery phase of the project. The Managing Contractor form of delivery provides the Commonwealth with buildability input into the design while promoting opportunities for small to medium enterprises by sub-contracting design and construction trade packages.

Construction Schedule

140. Subject to Parliamentary approval of the project, construction is expected to commence in late 2018 and be completed in mid-2023

Public Value

141. The proposed redevelopment will provide fit for purpose facilities and infrastructure that will significantly improve business continuity, working conditions, work health and safety including compliance and reduced maintenance costs. This will enable Larrakeyah Defence Precinct to continue to deliver its operational support functions for the ADF in the foreseeable future, maintaining a key capability consistent with the 2016 Defence White Paper.
142. The proposed redevelopment of facilities includes the renewal of engineering services infrastructure to ensure these services will meet the expected demand for two decades. Existing facilities have been re-used where it has been possible to meet the users' requirements and to minimise operating costs and environmental impacts.
143. The Project will employ a diverse range of skilled consultants, contractors and construction workers and may provide opportunities for up-skilling and job training to improve individual skills and employability on future projects. The project will employ an estimated maximum workforce of 290 personnel and an average construction workforce of approximately 130 personnel.

Revenue

144. No revenue is expected to be derived from this project.