



Australian Government

Department of Defence

**FACILITIES TO SUPPORT
LAND 19 PHASE 7B
SHORT RANGE GROUND BASE
AIR DEFENCE**

RAAF Base Edinburgh, South Australia

**STATEMENT OF EVIDENCE
TO THE
PARLIAMENTARY STANDING COMMITTEE
ON PUBLIC WORKS**

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Facilities to Support LAND 19 Phase 7B Short Range Ground Based Air Defence

1. The purpose of this Statement of Evidence is to provide information to the Australian public to comment on, and the Parliamentary Standing Committee on Public Works to enquire into, proposed works under Facilities to Support LAND 19 Phase 7B Short Range Ground Based Air Defence (the Project).

Purpose of the Works

Aim of the Project

2. The aim of the Project is to provide fit-for-purpose facilities and infrastructure at RAAF Base Edinburgh, South Australia, to enable the 16th Regiment, Royal Australian Artillery (the Regiment) to raise, train and sustain new air defence capability that will be acquired under the LAND 19 Phase 7B Short Range Ground Based Air Defence Capability Project.

Location of the Project

3. The Project proposes to deliver works at RAAF Base Edinburgh, approximately 25 kilometres from the Adelaide central business district.

Need for the Project

4. The Defence White Paper 2016 directed the strengthening of Strike and Air Combat capabilities to provide Australian forces with greater flexibility in responding to threats independently or as part of coalition operations. Responding to that, the Integrated Air and Missile Defence Program will modernise the Australian Defence Force's air defence systems.

5. LAND 19 Phase 7B Short Range Ground Based Air Defence capability has been developed as the first capability in the Integrated Air and Missile Defence Program.

6. This new capability will be phased into service to replace the existing portable laser guided surface-to-air missile system that the Regiment is currently operating out of Woodside Barracks, South Australia. The new capability will be a significantly larger and more capable vehicle-based air-defence system that the Regiment will operate out of RAAF Base Edinburgh.

Proposed Facilities Solution

7. New working, operational support and training facilities are proposed at RAAF Base Edinburgh to replace the Regiment's existing facilities at Woodside Barracks that will not be able to support the new and incoming capability.
8. The proposed working and operational support facilities will cater for the Regiment's office accommodation, as well as equipment and vehicle maintenance and storage requirements.
9. The proposed training facilities will cater for the Regiment's training requirements delivered by the School of Artillery's Air and Missile Defence Wing. Training will include the generic and system-specific instruction required to introduce and operate the new air defence capability.
10. The Department of Defence undertook comprehensive master planning, site investigations, stakeholder consultation, whole-of-life cost analysis and design development to establish the capital facilities and infrastructure works required to address the Project need.

Options Considered

11. Defence has developed the following four works options:
 - a. **Option 1 - Do Nothing.** The Regiment's existing facilities and infrastructure at Woodside Barracks are not fit for purpose and cannot enable an acceptable operating level for the new incoming air defence capability.
 - b. **Option 2 - Full Scope.** Provide fit-for-purpose facilities and upgraded engineering infrastructure at RAAF Base Edinburgh to enable the Regiment to meet its raise, train and sustain objectives when it is equipped with the enhanced air defence capability. However, Option 2 exceeds the available project budget.
 - c. **Option 3 - In Budget Scope.** This is a cost-driven option. It will enable the Regiment to relocate to RAAF Base Edinburgh and deliver the highest priority requirements within the approved project budget. It would consist of new facilities and some upgraded engineering infrastructure. This option will however restrict the Regiment's operational capability.

- d. **Option 4 - Reduced Risk Scope.** Provide fit-for-purpose facilities and upgraded engineering infrastructure at RAAF Base Edinburgh to enable the Regiment to meet its raise, train and sustain objectives when it is equipped with the enhanced air defence capability. Option 4 excludes local emergency generators, however presents a reduced risk to the air defence capability which can be acceptably managed by Army.

12. The in-budget scope (Option 3) provides a value for money solution to the Commonwealth whilst addressing the highest priority requirements of the new capability. It is also the only affordable option within the current approved budget.

13. However, Option 3 does present significant risks to achieving final operating capability. Defence is addressing this through the Force Structure Plan 2020, which included additional funding for the facilities required by the Regiment. Government will consider this funding in late 2021. Option 4 - Reduced Risk Scope is the preferred option should the additional Force Structure Plan 2020 funding be approved by Government (decision anticipated in late 2021). The additional scope included in Option 4 would minimise the risk of not achieving final operating capability.

Scope of Project Works

14. Option 3 proposes the following seven work elements:

- a. **Project Element 1 – Site-wide Engineering Infrastructure to support the proposed facilities at RAAF Base Edinburgh.** Scope includes upgrading high and low voltage power, sewerage, water and stormwater, information and communication technology, security and civil works. This element also includes contamination remediation within the proposed new precinct at RAAF Base Edinburgh.
- b. **Project Element 2 - Regimental Headquarters and Training Facility:** A new multi-purpose building to accommodate command and training functions. The Headquarters mainly comprises office working areas for the Regiment's executive team and command staff. The training facilities will provide generic and system-specific instructional spaces for the Regiment's ongoing training program.
- c. **Project Element 3 - Battery Facilities:** Two new 'mirror image' buildings to provide working accommodation for personnel and undercover storage for vehicles and equipment.

- d. **Project Element 4 - Combat Service Support Battery Headquarters, Workshops and Repair Parts Store:** A new facility that will provide office space, workshop areas for completing low level maintenance, and storage capacity for equipment and vehicle spare parts.
- e. **Project Element 5 – Quartermaster’s Store:** A new equipment storage and warehousing facility.
- f. **Project Element 6 – Regimental Transport Facility:** A new fenced hardstand compound for vehicles to be stored when not in use.
- g. **Project Element 7 - Living-in Accommodation** to fulfil permanent staff requirements for Other Ranks personnel who are minors or are within 12 months of completing their Initial Employment Training.

Planning and Design Concepts

- 15. The general philosophy for the design of the proposed works is based on:
 - a. providing cost-effective, functional, low maintenance, energy efficient design options compatible with proposed functions and existing aesthetics;
 - b. adopting where possible, conventional construction techniques (including off-site pre-fabrication) and materials commonly used by the construction industry, consistent with those already used at RAAF Base Edinburgh;
 - c. promoting where possible, a sustainable solution responding to local climate, considering the full life cycle of the facilities and infrastructure;
 - d. applying appropriate durability measures to reduce ongoing maintenance and achieve the proposed design life;
 - e. considering the functional relationships of the proposed facilities to existing facilities; and
 - f. providing flexible services and infrastructure to accommodate an appropriate level of growth.

Relevant Legislation, Codes and Standards

16. The following legislation, standards, codes and guidelines are applicable:
- a. *Environmental Protection and Biodiversity Conservation Act 1999 (Cth)*;
 - b. *Fair Work (Building Industry) Act 2012 (Cth)*;
 - c. *Work Health and Safety Act 2011 (Cth)*;
 - d. *Disability Discrimination Act 1992 (Cth)*;
 - e. *Fair Work Act 2009 (Cth)*;
 - f. National Construction Code - Building Code of Australia;
 - g. Defence Manual for Infrastructure Engineering Electrical;
 - h. Defence Smart Infrastructure Handbook;
 - i. Defence Estate Quality Management System; and
 - j. Defence Manual of Fire Protection Engineering.
 - k. Defence Pollution Prevention Management Manual
 - l. Defence Contamination Management Manual
17. An accredited Building Certifier will certify the compliance of the design and the compliance of the completed works.

Land and Zoning

18. The proposed works are consistent with uses prescribed in relevant Defence zoning instruments including the Edinburgh Defence Precinct Estate Base Plan, June 2018, and the Defence Estate Principles of Development.
19. A Site Selection Board process has been completed in accordance with Defence policy to ensure that the proposed works will not compromise future Base development.
20. The proposed working accommodation will be located within RAAF Base Edinburgh. The living-in accommodation will be located in the existing and nearby living accommodation zone.

Structure

21. The local geotechnical profile has been considered in developing the structural designs for each facility. The facilities will generally be of reinforced precast concrete walls, suspended concrete floor slabs and steel frame construction with pre-finished steel roofing.

22. Internal walls will be non-load bearing frames, lined with plasterboard to provide maximum flexibility to respond to changing functional needs.

Mechanical Services

23. The mechanical services 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 Building Code of Australia.

Hydraulic Services

24. Existing sewerage and stormwater services are proposed to be extended to each facility to suit design requirements.

25. An existing natural gas service will be extended to the proposed living-in accommodation buildings.

26. Potable water will be connected to the existing supply via sub-metering to each new building.

27. Rainwater will be collected from roofs and stored in above ground storage tanks and used for flushing toilets.

Electrical Services

28. Lighting, power and lightning protection will be provided in accordance with Australian Standards and Defence engineering requirements.

29. Electrical infrastructure and switchboards will have spare capacity to allow for future growth. Sub-metering will be included to each new building. The meters will be monitored by connection to the existing base building management system which will support an active energy management program on the site.

Fire Protection

30. The asset classification and criticality has been assessed to determine the fire protection systems for each proposed facility.

31. All facilities will be provided with a smoke detection system. The Regimental Headquarters and Training Facility, Battery Facilities, Combat Service Support Battery Headquarters, Workshops and Repair Parts Store and Quartermaster's Store will be protected with fire sprinklers to comply with the Defence Manual for Fire Protection Engineering and Building Code of Australia requirements.

32. Fire-fighting water storage tanks, with electric and standby diesel pumps will be installed to provide the required water supply for the sprinkler systems.

33. The precinct has been assessed as having a bushfire attack level of low.

Security Measures

34. Access to the proposed new facilities will be via the existing RAAF Base Edinburgh secure base entrances.

35. Advice from Defence security authorities has been incorporated in the proposed facilities designs to comply with the Defence Security Principles Framework. Proposed security services will be compatible with the existing base security systems.

Acoustics

36. The new facilities will comply with the National Construction Code and Australian Standards for noise and acoustics.

37. Aircraft noise impacts have been considered in the design of working and living-in accommodation. Acoustic separation has been considered between rooms, and walls are being designed to meet user requirements.

Work Health and Safety

38. The Project will comply with the *Work Health and Safety (WHS) Act 2011 (Cth)*, Work Health and Safety (Commonwealth Employment – National Standards) Regulations, and relevant Defence policies.

39. In accordance with Section 35 (4) of the *Building and Construction Industry Improvement Act 2005 (Cth)*, project contractors will be required to hold full work health and safety accreditation from the Office of the Federal Safety Commissioner under the Australian Government Building and Construction Work Health and Safety Accreditation Scheme.

40. Safety aspects of the Project have been addressed during the design development process, and have been documented in a Safety-in-Design Report.

41. A Work Health Safety Plan will be required to be developed for the construction phase prior to the commencement of any construction activities.

Materials and Furnishings

42. External walls for new buildings will be a mixture of pre-cast concrete panels and metal cladding. Exposed structural steel framing will be coated in a low maintenance finish. Where required, pre-finished steel roofing and rainwater fittings have also been selected for their resilience to harsh local environmental conditions.

43. Internal walls will be lined with plasterboard. Floors will be low maintenance and mostly consist of sealed concrete in vehicle storage and maintenance areas. Floors in other areas will be a combination of vinyl, ceramic tiles, or carpet.

Landscaping

44. The proposed landscape works will complement and enhance the existing character of the site. The landscape design will adopt functional, low maintenance, water sensitive approach using plants endemic to the local area and that do not attract birds.

Childcare Provisions

45. There is no requirement for childcare facilities under the Project.

Provisions for People with Disabilities

46. Access for people with disabilities will be provided in accordance with the Building Code of Australia, Australia Standard 1428 and the *Disability and Discrimination Act 1992 (Cth)*.

Environmental Sustainability

47. Defence is committed to ecologically sustainable development and reducing greenhouse gas emissions. The Project has adopted cost effective measures as a key objective in the design and development of the proposed works.

48. These ecologically sustainable development measures include:

a. **Meeting applicable energy targets:** The requirements of Defence's Smart Infrastructure Handbook: Design and Construction Version 1.0 (June 2019) and Building Energy Performance Manual Version 4.0 (December 2012) have been adopted for this project. All buildings shall comply with the Australian Government's Energy Efficiency in Government Operations Policy. The Project energy targets include:

- (1) Tenant light and power: to be less than 7,500 megajoules per person per annum.
- (2) Central services: to be less than 400 megajoules per person per annum.
- (3) Operational equipment loads general power intensity average (computers and other equipment): no more than nine watts per square metre.

b. **Reducing energy and water use:** Measures proposed to reduce energy and water use include:

- (1) Adopting passive building design principles for new facilities.
- (2) Selecting energy efficient heating ventilation and air conditioning systems, lighting, and intelligent building management control systems.
- (3) Minimising waste storage, disposal, and optimising the potential for recycling.
- (4) Selecting sustainable materials considering procurement, production and environmental performance.
- (5) Specifying water efficient fixtures and fittings.
- (6) Optimising rainwater harvesting for beneficial re-use.
- (7) Adopting water sensitive urban design principles.
- (8) Selecting native, low-water usage plant species requiring irrigation only for establishment.

- c. **Demolition and disposal of existing structures:** The proposed scope of works includes removing some existing trees, redundant engineering services, footings and pavements.
- d. **Waste Minimisation:** An emphasis will be placed on ‘designing out’ waste. Measures proposed to minimise waste will follow the requirements under the Defence Smart Infrastructure Handbook which requires that all designs consider the minimisation of waste in the planning, design, construction, and operation of the Project.
- e. **Material Selection:** Materials that minimise waste, are flexible in use and avoid volatile organic compounds and ozone depleting materials will be selected for use in the Project where practical. Local materials will also be preferred where practical to minimise transportation.

Potential Impacts

49. Defence has conducted rigorous assessments to identify potential environmental and local community impacts and propose suitable mitigation measures. These include:
- a. **Visual Impacts:** There will be no material visual impact to local communities as the proposed facilities are a significant distance from the closest residential and commercial developments. Supplementary plantings are proposed to screen the new buildings from adjacent Defence facilities and West Avenue, a public road to the east of RAAF Base Edinburgh.
 - b. **Noise Impacts:** There will no material noise impacts to local communities or existing nearby Defence facilities from the operation of the proposed facilities.
 - c. **Heritage Impacts:** The proposed development is not anticipated to have a material impact on known areas of Indigenous cultural significance. Local Indigenous groups will continue to be consulted throughout the development of the Project.

- d. **Traffic, Transportation and Road Impacts:** The public Adelaide Metro Bus Service stops at the main gate of RAAF Base Edinburgh, approximately one (1) kilometre from the proposed development. The Base is accessed from West Avenue which primarily services the Edinburgh Defence Precinct and the Edinburgh South and Edinburgh North industrial areas but is not considered a very busy road. Accordingly, Defence does not anticipate a material impact on local traffic from the construction or operation of the proposed facilities.
- e. **Relevant Local Facilities:** No material impact on the demand for or use of local facilities is anticipated from the Project.
- f. **Contamination Remediation:** Concentrations of contaminants on the proposed site for the new facilities have been assessed and are not considered to pose an unacceptable risk to human health during construction or the proposed use of the site. Appropriate control measures to manage contamination or hazardous materials will be implemented during construction in accordance with Defence's Pollution Prevention Management Manual, Defence Contamination Management Manual and State Legislation.

50. Defence has determined that the Project will not have a significant impact on existing environmental and heritage values and is not required to be referred to the Minister of Environment and Energy under the *Environmental Protection and Biodiversity Conservation Act 1999 (Cth)*.

Consultation with Key Stakeholders

51. Defence has developed a community consultation and communications strategy that recognises the importance of providing local residents and other interested stakeholders an opportunity to provide input into, or raise concerns relating to, the proposed works.

52. Defence has engaged with a variety of internal and external stakeholders during project development to date, and further consultation will be conducted to support the Parliamentary Standing Committee on Public Works' inquiry into the proposed works. These include:

- a. Mr Nick Champion MP, Federal Member for Spence.
- b. Mr Tony Zappia MP, Federal Member for Makin.
- c. Mr Jon Gee MP, South Australian Member for Taylor.

- d. The Hon Steven Marshall MP, Premier of South Australia.
- e. Mayor Gillian Aldridge OAM, Mayor of the City of Salisbury.
- f. David Hood, City of Salisbury Councillor
- g. Mayor Glenn Docherty, Mayor of the City of Playford.
- h. Peter Rentoulis, City of Playford Deputy Mayor
- i. The Kaurna People.
- j. Defence SA.
- k. local industry and business associations including:
 - (1) Business SA
 - (2) Master Builders Association
 - (3) Salisbury Business Association
- l. local community groups.

Related Projects

53. Subject to Government approval of the following capabilities, additional facilities and/or infrastructure is expected to be required at RAAF Base Edinburgh:

a. **RAAF Base Edinburgh Mid Term Refresh and Elizabeth North Relocation Projects.**

The Mid Term Refresh will rectify some known in-ground services problems at RAAF Base Edinburgh.

The Elizabeth North Relocation Project will relocate Reserve and Cadet units at Elizabeth North Training Depot to RAAF Base Edinburgh.

- b. **Integrated Air and Missile Defence Program.** LAND 19-7B is the first capability to be delivered within the wider Integrated Air Missile Defence Program. As part of the program, there are future capability projects planned that will form the ultimate final configuration of the Integrated Air and Missile Defence capability.

- c. **LAND 121 Field Vehicles.** The specifications for the vehicles being provided to the Regiment through the LAND 121 program have been considered in the design of facilities.
- d. **Electricity Contract – Power Purchase Agreement.** Provision of a major solar farm to offset Edinburgh Defence Precinct’s daytime electrical demand.

Cost Effectiveness and Public Value

Project Costs

54. The estimated total capital out-turned cost of the preferred Option 3 In Budget Scope is \$213.9 million, including Defence Contingency.

55. If Government approves the additional Force Structure Plan 2020 funding in late 2021, Option 4 Reduced Risk Scope becomes the preferred option and the estimated total capital out-turned cost will increase to \$266.1 million, including Defence Contingency.

56. These estimates exclude Goods and Services Tax, except for the proposed Living-in Accommodation project element. The estimates include project management, contract management and design fees; other professional services fees related to construction costs; active information and communications technology; furniture, fittings and equipment; relocation and a provision for risk and escalation.

57. An increase in annual future sustainment costs by \$6.7 million is expected because of the proposed works included in Option 3 In Budget Scope. If Option 4 Reduced Risk Scope proceeds, the proposed works are expected to increase the annual future sustainment costs by \$7.6 million (an increase of \$0.9 million above Option 3 In Budget Scope). These increases are due to the additional maintenance, cleaning and utilities expenses that will be required to operate the additional facilities and infrastructure that are listed in the “Below the Line” items section below.

Project Delivery System

58. A Project Manager and Contract Administrator will be appointed to manage the delivery phase of the works. A Head Contractor form of contract is planned to deliver the works, with the Head Contractor being appointed to procure trade contractors and manage the construction of the works.

59. The Head Contractor form of delivery provides the Commonwealth with direct control over the design and quality of the Project. The Head Contractor delivery methodology will also assist to promote opportunities for small to medium enterprises using sub-contract trade packages.

Construction Program

60. Subject to Parliamentary expediency, design activities are expected to be completed by mid-2022 with construction expected to commence from late 2022 and be completed in late 2024.

Public Value

61. Defence has comprehensively assessed public value, opportunities, and benefit to the community because of the proposed works:

- a. **Meeting capability needs:** The LAND 19 Phase 7B Capability Project aims to address capability requirements highlighted in the 2016 Defence White Paper by introducing the Short Range Ground Based Air Defence capability into the Australian Defence Force. The Project proposes to provide the facilities and infrastructure to support this capability.
- b. **Employment opportunities:** The Project will employ a diverse range of consultants, contractors, and construction workers, and is expected to generate opportunities for up-skilling and job training to improve individual skills and employability on future projects.
- c. **Economic impacts:** Defence and the Head Contractor will actively promote opportunities for small to medium enterprises through construction sub-contractor packages. The Head Contractor will be required to deliver all works in accordance with, but not limited to, National Construction Code – Building Code of Australia guidelines, relevant Australian Standards, relevant Defence Policy and Workplace Health and Safety legislation.
- d. **Local industry and Indigenous business involvement opportunities:** The Project anticipates providing local and Indigenous businesses with opportunities to supply construction materials and labour. Defence and the Head Contractor will actively promote opportunities for small to medium local enterprises through construction trade packages, and there may be opportunities for Indigenous business involvements in accordance with the Indigenous Procurement Policy.

Works to be undertaken must comply with the Government policy for Local Industry Participation which requires successful tenders to provide detailed commitments on how they will utilise and develop local industry. In accordance with the policy, local for RAAF Base Edinburgh will be defined by industry using a pragmatic approach, taking account of the construction capacity and capability in the surrounding area. These commitments will become contract deliverables and successful tenderers will be required to report on their performance against them. Whilst the policy does not mandate or preference local suppliers, it does maximise the opportunity for local companies to be involved in the project.

Below the Line Items

62. In the event that Government approves the additional funds endorsed in the Force Structure Plan 2020, or Defence experiences trade savings when tendering for the above works or through retired risk provisions, Defence may deliver the following additional works:

Below the Line Items

Project Element	Description of proposed works
Regimental Transport Facility	Construct a building to provide working accommodation for the transport section personnel and undercover storage of vehicles.
Living-in Accommodation	Construct additional single occupancy living-in accommodation units to fulfil permanent staff requirements for remaining Other Ranks personnel.
	Construct single occupancy living-in accommodation units to fulfil permanent staff requirements for Junior Officers and Senior Non-Commissioned Officers.
Site-wide Engineering Infrastructure	Upgrade the existing on-base access roads to the new facilities to accommodate the movement of the Regiment's heavy vehicles.
	Construct light vehicle car parking for use by the Regiments' personnel, and visitors.
	Duplicate an existing high voltage cable to provide additional electrical capacity.
	Provide local emergency power generation.
	Additional hydraulic services.

Project Element	Description of proposed works
Regimental Headquarters and Training Facility	Construct an open training and wet weather training shelter, adjacent to the Regimental Headquarters and Training facility.
Battery Facilities	Provide additional undercover vehicle storage.
	Construct an additional access road to the proposed compound.
Combat Service Support Battery Headquarters, Workshops and Repair Parts Store	Extend gantry coverage to all vehicle maintenance bays.
	Extend roof overhang around perimeter of facility.
Quartermaster's Store	Extend the hardstand along western perimeter of the facility.
	Extend roof overhang around perimeter of facility.

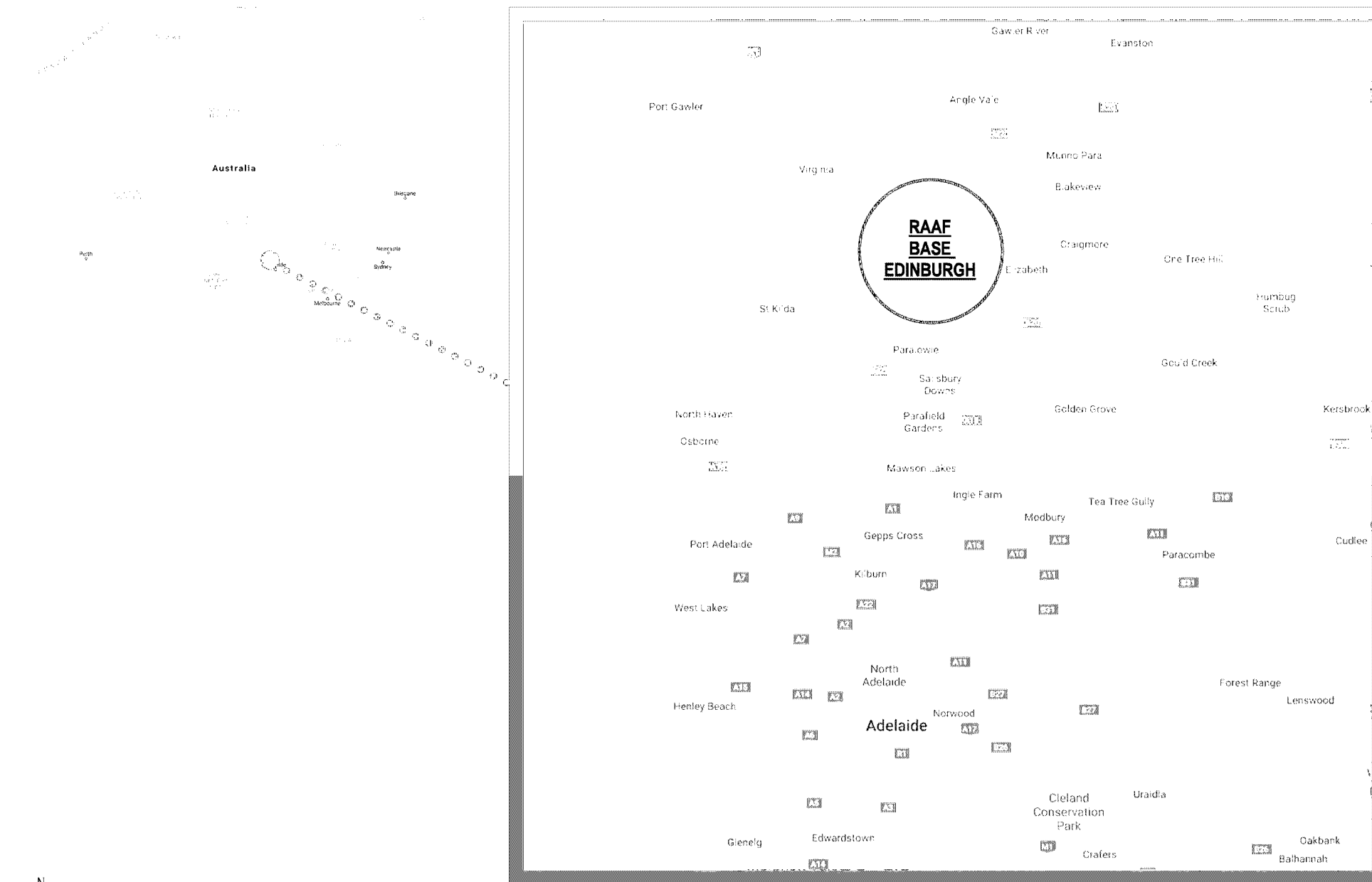
Revenue

63. No revenue is expected to be derived from the Project.

Attachments

1. Location Map, RAAF Base Edinburgh
2. Site Location, RAAF Base Edinburgh.

Department of Defence – Facilities to support LAND 19 Phase 7B Short Range Ground Base Air Defence, RAAF Base Edinburgh,
South Australia
Submission 1



**FACILITIES TO SUPPORT LAND 19 - 7B SHORT RANGE GROUND BASED AIR DEFENCE
EDINBURGH, SA**



LAND19-7B LIVING-IN
ACCOMMODATION PRECINCT

LAND19-7B PRECINCT



**FACILITIES TO SUPPORT LAND 19 - 7B SHORT RANGE GROUND BASED AIR DEFENCE
EDINBURGH, SA**