Australian Government

Department of Defence

# JP154 Phase 1
# DEFENCE COUNTER IMPROVISED EXPLOSIVE DEVICE CAPABILITY

Nurrungar, Edinburgh – South Australia
Watsonia, Puckapunyal, Bandiana – Victoria
Holsworthy, Moorebank, Singleton – New South Wales
Townsville, Enoggera – Queensland
Palmerston – Northern Territory
Cottesloe – Western Australia

Statement of Evidence

to the

Parliamentary Standing Committee

on Public Works

Canberra, Australian Capital Territory
September 2014

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# Defence Counter Improvised Explosive Device Capability

> *'…technological trends around the world offer both challenges and opportunities for Defence. There is growing capacity around the globe, and increasingly in our region, to develop, purchase and reverse-engineer sophisticated systems for military applications. This can quickly offset the advantage in developing a leading capability. Rapid rates of technological change and global access to commercial off-the-shelf technology are reinforcing these trends and are expected to continue affecting defence capability options.'* [1]

## Need for the works

### Identified need

1. The use of Improvised Explosive Devices (IED) by insurgents continues to represent a major threat to Australian Defence Force elements deployed on operations around the world. This threat also has potential to migrate to mainland Australia and countries within Australia's immediate neighbourhood and it is highly likely that the Australian Defence Force will encounter IEDs on future deployments. The 2013 Defence White Paper recognises this threat and supports the enhancement of Counter-Improvised Explosive Device capabilities into the future:

> *'Force protection and the provision of appropriate equipment for ADF personnel to enable them to undertake their difficult and dangerous tasks remains of the highest priority to Government. Australian soldiers will continue to be among the best equipped in the world. Counter-Improvised Explosive Device capabilities that have proven valuable in Afghanistan will be retained and built into a sustainable capability for future tasks, in recognition of the fact that improvised*

[1] Defence White Paper 2013, p. 19.

*explosive devices are now a part of the future operating environment of the ADF.'*[2]

2. To counter this threat, Counter IED capabilities, primarily in the form of Force Protection Electronic Counter Measures (FPECM) systems, have been acquired under Joint Project 154 Phase 1 to protect deployed forces. Systems which have been acquired include:

   a. vehicle-mounted radio frequency jammers;

   b. man-pack radio frequency jammers for dismounted operations;

   c. vehicle-mounted directed Microwave Electronic Attack pre-initiators; and

   d. man-portable and portable radio frequency jammers for Explosive Ordnance Disposal for both domestic and deployed Explosive Ordnance Disposal teams.

3. As time progresses it has been seen that threat elements are embracing Radio Frequency consumer products with frequencies extending beyond those that can be countered by current FPECM systems. To effectively counter the extant, emerging and future IED threats, a continuous technology refresh program is required. Facilities are required to support this ongoing capability in terms of testing (research and engineering acceptance), storage and training facilities for the FPECM systems.

4. Currently, there are very limited facilities to support this capability. Research and development, engineering acceptance, storage and training activities are being undertaken in an ad hoc manner and this arrangement is neither effective nor economical. Current temporary testing arrangements at Nurrungar in South Australia impose limitations on fully developing the capability and alternative offshore options are expensive and time-consuming to plan and utilise. Further, the availability of offshore options is not guaranteed when the Australian Defence Force requires them. This proposal will allow Defence to address identified operational and capability deficiencies and provide the ability to fully and effectively introduce and support the capability into the Australian Defence Force. It is expected that other Government Agencies will also benefit from the proposed works in support of domestic security requirements.

[2] Defence White Paper 2013, p. 86.

## Proposed works

5. There are 13 project elements that make up the project scope of works. These project elements are being delivered at 12 Defence bases and establishments. The collective proposed works will support the testing, training and storage of counter IED equipment.

6. The proposed works will be delivered in two distinct stages as follows:

   a. **Stage 1.** The proposed works under Stage 1 will be delivered at Nurrungar, South Australia. The test track and support facilities proposed under this stage form the central facilities component supporting the capability. The Stage 1 works are defined under Project Element 1.

   b. **Stage 2.** The remaining 12 elements make up the package defined as Stage 2 works. These proposed works include support facilities at multiple bases around Australia to further develop, store and maintain the capability. The Stage 2 works have been developed separately to the Stage 1 works at Nurrungar and with the prior approval of the Parliamentary Standing Committee on Public Works, construction on these sites commenced in October 2013. As at September 2014, some elements of the Stage 2 works have already been completed while some are still under construction.

## Historical background

7. The Australian Defence Force has been operating with the threat of IEDs almost continuously since 2001 through its involvement in Afghanistan and Iraq. Since this time, almost half of all combat-related fatalities have resulted from IED strikes. Further, the number of casualties sustained by Australian forces as a result of IEDs numbers in the hundreds. The attack on David Savage, the Australian civilian seriously injured while working as a Stabilisation Adviser in Afghanistan, was also perpetrated using an IED.

8. Throughout this conflict, the threat posed by IEDs has evolved. This situation prompted the Australian Defence Force to establish a program to better equip ground forces to deal with this threat. In late 2008, the Australian Government gave initial

approval (first pass approval) to proceed with planning, and the rapid acquisition of Counter IED equipment was approved in April 2009.

*9.* **Facilities requirement.** The facilities component of this project was approved by government in July 2010 and was designed to support two functions. The first function was to provide adequate storage to house the Counter IED equipment within key Defence locations around Australia once it was returned from the Area of Operations in Afghanistan. The second function was to provide adequate test and evaluation, research and development, and training facilities at key locations in order to enable the continuing evolution of technology and procedures to defeat the threat into the future and beyond Afghanistan, as noted in the 2013 Defence White Paper:

> *'The ADF needs to be prepared to contribute to UN peace and stability operations, enforcement of UN sanctions and operations to counter-terrorism. In some cases, Australia might provide small, tailored contributions using specialist elements such as command teams, logistics and communications capabilities or mine clearance personnel. In other situations, it may be in Australia's strategic interests to deploy more substantial forces, as we have done in Afghanistan.'*[3]

# Purpose of the works

## Project scope

10. The purpose of the proposed project is to deliver new and refurbished, purpose-built facilities and associated infrastructure to support the introduction of a sustainable Counter IED capability into the Australian Defence Force. The proposed facilities at Nurrungar and Edinburgh will close existing gaps in the Australian Defence Force's capability to conduct research, development and acceptance testing of FPECM equipment. The proposed facilities at Watsonia and Moorebank, along with secure stores at key bases around Australia will enable the integration of FPECM equipment

[3] Defence White Paper 2013, p. 32.

into the user units of the Australian Defence Force and to support the generation of capability to mitigate current and future threats from IEDs.

## Details and reasons for site selection

11. **Stage 1 siting options.** The selection of the site at Nurrungar has been undertaken in accordance with Infrastructure Division planning policy requirements, as set out on the Defence Estate Quality Management System. The review conducted by the site selection board considered Defence policy on environmental and heritage conservation, operational requirements, and existing planning guidance for the Woomera Prohibited Area.

12. Nurrungar was selected as the site for the test track and supporting infrastructure, as it provided the following advantages:

    a. It is located on Commonwealth land;

    b. Ease of access to services in the nearby Woomera township, decreasing the need for additional supporting infrastructure;

    c. Defence Science and Technology Organisation modelling has indicated that the siting option minimises radio frequency leakage to the outside environment through natural terrain shielding and has zero line of sight from the Stuart Highway, thereby minimising effects on nearby populated areas and vehicles transiting the Stuart Highway;

    d. The area is relatively ‘electronically quiet’ which makes it ideal for the conduct of electronic warfare testing; and

    e. This option received the support of the local Aboriginal groups.

13. **Stage 2 siting options.** Consistent with Defence planning policy, various siting options for the proposed facilities at each site have been considered, guided by existing base zone plans. Within the approved sites, various site layout options have been tested to ensure that the site layout is functional, cost effective and allows sufficient capacity for future expansion.

## Project locations

14. The project locations for all works are shown in Attachment 1. All sites are Commonwealth owned and Defence controlled.

## Project Element 1 - Nurrungar, South Australia

15. **Location of the proposed works.** The Joint Defence Facility Nurrungar is located approximately 15 kilometres south of Woomera. The proposed works are located on a green-field site in the valley that runs perpendicular to the Western Commonwealth land boundary. A location map is provided in Attachment 1 and a site plan is provided at Attachment 2.

16. **Description of the proposed works.** To facilitate research, development and acceptance testing of vehicle mounted FPECM, the proposed work to be delivered at Nurrungar is as follows:

    a. **Test track.** A bitumen sealed road, consisting of two cross arms and turning nodes, to allow testing of FPECM equipment mounted onto various Defence vehicles. Monitoring stations are located perpendicular to the test track and are connected to the test recording building with fibre optic cables. A detailed plan of the test track is provided at Attachment 3.

    b. **Test recording building.** This building will be used to capture and record the results from the test track. The proposed facility will include office space, basic amenities and a server room.

    c. **Workshop.** The proposed workshop is connected to the test recording building and will accommodate heavy vehicles to enable the installation, programming and fault finding of FPECM equipment. The workshop will not be used for vehicle repairs. A building plan for the vehicle workshop and test recording building is provided at Attachment 4.

    d. **Access road.** A new unsealed, all-weather road is proposed to be constructed from the existing Nurrungar access road (which links Stuart Highway and the disused Nurrungar Technical Compound) to the test track. The new access road will accommodate a range of vehicles; from light passenger to Bushmaster

military vehicles. The alignment of the new access road avoids areas of heritage significance.

e. **Engineering services.** Power, voice and data communications are proposed to be supplied to the test recording building by recommissioning existing infrastructure. New local water and sewerage infrastructure is also proposed to service the amenities at the test recording building.

17. **Test track site selection.** Siting of the test track facility was severely constrained by the operational requirement to minimise radio frequency leakage to the outside environment. Nurrungar was selected as the preferred site, as early investigations showed that the site met the radio frequency shielding requirements and provided the added benefit of being located in close proximity to existing Defence infrastructure at Woomera. Within the boundaries of the Commonwealth-owned land at Nurrungar, three geographic locations were considered for the test track: the Central Valley, the Entrance Road and the Western Valley. The Entrance Road was discounted, as it did not meet the radio frequency shielding requirement and was visible from the Stuart Highway. The Central Valley was removed as an option due to the presence of culturally significant indigenous sites. The Western Valley was chosen as the preferred site following confirmation it met the project siting requirements.

## Project Element 2 – Defence Science and Technology Organisation and Joint Electronic Warfare Operational Support Unit, Edinburgh, South Australia

18. **Location of the works.** The works are on two sites within the Defence Science and Technology Organisation precinct at Edinburgh, South Australia. The software test facility is to be located within an existing structure (Building 212). The electronics workshop is to be constructed as an extension to a separate existing structure (Building 180).

19. **Description of the works.** The Defence Science and Technology Organisation facilities provide the capacity to undertake research and development on FPECM equipment. The facilities at the Joint Electronic Warfare Operational Support Unit will

enable the conduct of testing and development of FPECM equipment. The works include the following:

a. **Electronics workshop.** These works will involve an extension to Building 180 to include a software test area, a workshop, a store room and a radio frequency shielded room. The facility will be utilised by five Defence Science and Technology Organisation permanent staff.

b. **Software test facility.** These works require a refurbishment of an existing office space within Building 212 to provide working area for eighteen Joint Electronic Warfare Operational Support Unit permanent staff. The refurbishment works within Building 212 also include provision for a small electronics workshop and a software test facility.

**c.** **Engineering services.** Existing building services will be extended and upgraded to accommodate the extension of Building 180 and refurbishments within Building 212.

## Project Element 3 – Defence Force School of Signals, Watsonia, Victoria

20. **Location of the works.** The Defence Force School of Signals is located at Simpson Barracks, on the north western fringe of Melbourne's metropolitan area. The proposed works will be undertaken within an existing structure (Building 290).

21. **Description of the works.** The Defence Force School of Signals is required to conduct FPECM Manager training for class sizes of fifteen students, with the ability to demonstrate the FPECM equipment at its full capability in a controlled environment. The proposed works to support this requirement include:

a. **Classroom.** A radio frequency screened classroom to accommodate fifteen students and two instructors. The classroom will be equipped with integrated storage for Force Protection equipment.

b. **Engineering services.** The refurbishment works will tie in to existing engineering services within Building 290. Minor modifications to the existing engineering services will be required to accommodate the radio frequency shield.

## Project Element 4 – Defence National Storage and Distribution Centre, Moorebank, New South Wales

22. **Location of the works.** The Defence National Storage and Distribution Centre (now known as Joint Logistics Unit – East), is located in the suburb of Moorebank, in Sydney's west. The proposed works will be undertaken within an existing building.

23. **Description of the works.** A secure store facility and an electronics workshop are proposed to facilitate the storage and maintenance of FPECM equipment at Joint Logistics Unit – East.

## Project Element 5 – Combined Arms Training Centre, Puckapunyal, Victoria

24. **Location of the works.** Puckapunyal is located in northern central Victoria, approximately 100km north of Melbourne near the town of Seymour.

25. **Description of the works.** The proposed works will facilitate storage of FPECM equipment to meet Army's stated basis of provisioning for the Combined Arms Training Centre. The proposed works include:

    a. **Secure store.** Construction of a secure store to hold FPECM equipment required by the Combined Arms Training Centre to conduct combined training for land forces in mounted and dismounted environments.

    b. **Engineering services** Power supply and security alarm connectivity will be achieved by connecting to the existing site low voltage reticulation and alarm network.

## Project Element 6 – Army Logistics Training Centre, Bandiana, Victoria

26. **Location of the works.** The Army Logistics Training Centre is located in Bandiana, south east of Albury Wodonga, in Victoria.

27. **Description of the works.** The proposed works will facilitate storage of FPECM equipment to meet Army's stated basis of provisioning for the Army Logistics Training Centre. The proposed works include:

a. **Secure store.** Construction of a secure store to hold FPECM equipment required by the Army Logistics Training Centre to conduct specialist training in the maintenance of the equipment.

b. **Engineering services.** Power supply and security alarm connectivity will be achieved by connecting to the existing site low voltage reticulation and alarm network.

## Project Element 7 – Incident Response Regiment, Holsworthy, New South Wales

28. **Location of the works.** The Incident Response Regiment (now known as the Special Operations Engineer Regiment) is located at Holsworthy Barracks in the outer South-Western Sydney suburb of Holsworthy.

29. **Description of the works.** The proposed works will facilitate storage of FPECM equipment to meet Army's stated basis of provisioning for the Special Operations Engineer Regiment. The proposed works include:

a. **Secure store** Construction of a secure store to hold FPECM equipment required by the Special Operations Engineer Regiment to conduct training in direct support of Special Operations.

b. **Engineering services.** Power will be supplied to the new building by connecting to the existing site low voltage network.

## Project Element 8 – School of Military Engineering, Moorebank, New South Wales

30. **Location of the works.** The School of Military Engineering is located at Steele Barracks in the outer South-Western Sydney suburb of Moorebank (currently being relocated to the adjacent suburb of Holsworthy).

31. **Description of the works.** The proposed works will facilitate storage of FPECM equipment to meet Army's stated basis of provisioning for the School of Military Engineering. The proposed works include:

a. **Secure store.** Construction of a secure store to hold FPECM equipment required by the School of Military Engineering to provide entry-level training to Combat Engineer recruits.

b. **Engineering services.** Power supply and security alarm connectivity will be achieved by connecting to the existing site low voltage reticulation and alarm network.

## Project Element 9 – School of Infantry, Singleton, New South Wales

32. **Location of the works.** The Australian Army School of Infantry is located at Lone Pine Barracks, Singleton in the Hunter Valley region of New South Wales, 180km northwest of Sydney.

33. **Description of the works.** The proposed works will facilitate storage of FPECM equipment to meet Army's stated basis of provisioning for the School of Infantry. The project proposes to deliver the following works:

a. **Secure store.** Construction of a secure store to hold FPECM equipment required by the School of Infantry to provide entry-level training to Infantry recruits.

b. **Engineering services.** Power supply and security alarm connectivity will be achieved by connecting to the existing site low voltage reticulation and alarm network.

## Project Element 10 – 3rd Brigade and Combat Training Centre, Townsville, Queensland

34. **Location of the works.** The Combat Training Centre and 3rd Brigade are located at Lavarack Barracks in Townsville.

35. **Description of the works.** The proposed works will facilitate storage of FPECM equipment to meet Army's stated basis of provisioning for the 3rd Brigade and the Combat Training Centre. The proposed works include:

a. **Secure store.** Construction of a secure store to hold FPECM equipment required by the 3rd Brigade and the Combat Training Centre to train and equip forces ready for operations.

b. **Engineering services.** Power supply and security alarm connectivity will be achieved by connecting to the existing site low voltage reticulation and alarm network.

## Project Element 11 – 7th Brigade, Enoggera, Queensland

36. **Location of the works.** The 7th Brigade is based at Enoggera Barracks in the North-West Brisbane suburb of Enoggera.

37. **Description of the works.** The proposed works will facilitate storage of FPECM equipment to meet Army's stated basis of provisioning for the 7th Brigade. The proposed works include:

    a. **Secure store.** Construction of a secure store to hold FPECM equipment required by the 7th Brigade to train and equip forces ready for operations.

    b. **Engineering services.** Power will be supplied to the secure store by connecting to the existing site low voltage power reticulation network. No alarm system is required for these proposed works.

## Project Element 12 – Special Air Service Regiment, Swanbourne, Western Australia

38. **Location of the works.** The Special Air Service Regiment is based at Campbell Barracks in the Western coastal suburb of Swanbourne in Perth.

39. **Description of the works.** The proposed works will facilitate storage of FPECM equipment to meet Army's stated basis of provisioning for the Special Air Service Regiment. The proposed works include:

    a. **Secure store.** Construction of a secure store to hold FPECM equipment required by the Special Air Service Regiment to train and equip forces ready for Special Operations tasks.

    b. **Engineering services.** Power will be supplied to the secure store by upgrading and connecting to the existing site low voltage power reticulation network. No alarm system is required for these proposed works.

## Project Element 13 – 1st Brigade, Palmerston, Northern Territory

40. **Location of the works.** The 1st Brigade is based at Robertson Barracks in Palmerston, approximately 20km South-East of Darwin.

41. **Description of the works.** The proposed works will facilitate storage of FPECM equipment to meet Army's stated basis of provisioning for the 1st Brigade. The proposed works include:

    a. **Secure store.** Construction of a secure store to hold FPECM equipment required by the 1st Brigade to train and equip forces ready for operations.

    b. **Engineering services.** Power supply and security alarm connectivity will be achieved by connecting to the existing site low voltage reticulation and alarm network.

### Options considered for fulfilling the need

42. **Nurrungar test facility.** In considering options for the proposed testing facilities, factors such as the containment of emissions across the electromagnetic spectrum, the ability to access the site regularly, the conduct of activities at short notice and the proximity to existing Defence amenities were important considerations. While Australia has vast areas of land, the availability of suitable land owned by the Commonwealth at which full radio frequency testing can be conducted is limited. Woomera offers the greatest potential as a site to conduct this testing. To meet all the above requirements in an economical way and to cause minimal interference to mining operations, the only viable option available for research and acceptance testing is the Commonwealth owned site, Nurrungar in Woomera.

43. Five discrete options across three geographic sites were considered for the specific placement of the test track within Nurrungar. The option finally chosen represents the best available geographic conditions to support test operations. Once the test track location was selected, further design options were developed to reduce the requirement for disturbance through earthworks and impact from flash flooding.

44. Options at Nurrungar for the buildings and infrastructure included the building of all-new facilities as well as the use of existing facilities that were decommissioned when the United States Forces vacated the site. The option to build new was selected as

the most cost effective solution due to the specific requirements and final location of the dedicated test facility.

45. **Test support facilities.** Options for research and acceptance support facilities at Edinburgh were limited to extension and modification of the existing facilities due to the requirement to collocate this function with the respective organisations involved in the conduct of test and development activities. An extension is proposed for the Defence Science and Technology Organisation building due to existing space limitations. Proposed office and laboratory requirements for the Joint Electronic Warfare Operational Support Unit can be delivered by refurbishing available space within their existing working accommodation.

46. **Logistic and training facilities.** Facilities options supporting logistics and training functions at Defence bases considered a range of possibilities including new build, extension and modification to existing buildings. The identification of Defence bases with a facilities liability was determined by Army based on the requirement of lodging organisations to use and maintain FPECM equipment to meet Government-directed capability levels. The preferred options were selected through detailed user and stakeholder consultation and analysis of capital and whole of life costs.

47. **Secure stores.** Consistent with Defence planning policy, various siting options for the proposed facilities at each site have been considered, guided by existing base zone plans. Following initial investigation, it was determined that new facilities were required in each location due to the lack of suitable secure storage. Within the approved sites, various site layout options have been tested to ensure that the site layout is functional, cost effective and allows sufficient capacity for future expansion. A visual example of a generic secure store is given in Attachment 5. This basic concept has been applied to the specific site conditions for each proposed works element.

48. **Refurbishment and integration options.** Consideration was given to refurbishment and reuse of existing facilities and infrastructure in lieu of constructing new facilities to meet the identified need. Integration of the identified need into existing base redevelopment projects to achieve cost efficiency was also explored. These options are discussed in more detail in the description of each project element.

## Reasons for adopting the proposed course of action

49. FPECM Systems are continuously improved through research and development to ensure that they remain effective into the future. Currently, the Australian Defence Force can only conduct limited research, development and testing to vehicle mounted FPECM Systems, due to severe limitations on when and where the testing can be conducted and the radio frequency spectrum that can be tested. The limitations on the testing are in place to minimise the emission of radio frequency radiation and consequent interference with civilian and military radio communications.

50. To further develop the Australian Defence Force's counter IED capability and to ensure that FPECM systems remain effective, the following is needed:

    a. A purpose built vehicle test track and associated infrastructure at Nurrungar (South Australia) that will allow unrestricted testing of various FPECM systems on a variety of Defence vehicles, operating at different speeds;

    b. Purpose built electronics workshop, software test laboratory and office space at Edinburgh (South Australia) for Defence Science and Technology Organisation and Joint Electronic Warfare Operational Support Unit personnel, who will be supporting the research, development and acceptance testing of FPECM systems;

    c. Dedicated classroom facilities at Watsonia (Victoria) to allow the Defence Force School of Signals to conduct FPECM Manager training, with the ability to demonstrate the FPECM equipment at its full capability in a controlled environment;

    d. A storage facility and electronics maintenance workshop at Moorebank (New South Wales) dedicated to FPECM equipment held at the Joint Logistics Unit – East; and

    e. Dedicated secure storage for FPECM equipment issued to Army to allow individual and unit training in the use of the equipment at the following Defence units and locations:

        i. 1st Brigade, Palmerston (Northern Territory);

ii. 3rd Brigade, Townsville (Queensland);

iii. Combat Training Centre, Townsville (Queensland);

iv. 7th Brigade, Enoggera (Queensland);

v. Special Air Services Regiment, Perth (Western Australia);

vi. Special Operations Engineer Regiment, Holsworthy (New South Wales);

vii. School of Military Engineering, Holsworthy (New South Wales);

viii. School of Infantry, Singleton (New South Wales);

ix. Army Logistics Training Centre, Bandiana (Victoria); and

x. Combined Arms Training Centre, Puckapunyal (Victoria).

51. The scope in paragraph 51 was approved by Government in August 2014 and represents a change to the original proposed scope previously advised to Parliament. The following elements no longer form part of the proposed works:

a. The requirement for separate training lane stores at all locations; and

b. Secure stores at:

i. Mount Bundy Training Area, Mary River (Northern Territory);

ii. Cultana Training Area, Cultana (South Australia); and

iii. Land Warfare Centre, Canungra (Queensland).

## Heritage considerations

52. Consultation with Aboriginal Traditional Owners in early 2011 resulted in parts of Nurrungar being identified as previously undiscovered sacred sites. The Traditional Owners indicated that any modification to the identified area would result in significant impacts to indigenous ceremonial values and sites.

53. Defence engaged an anthropological expert to undertake consultation with the Traditional Owners and to conduct an indigenous heritage assessment of the whole Nurrungar area. This assessment resulted in the production of an Aboriginal Heritage Management Plan (February 2013), which complies with the requirements of the *Environment Protection and Biodiversity Conservation Act* 1999. The heritage

assessment led to the determination that the Western Valley was the most suitable location for the test track, as it met Defence's functional and operational requirements for the facility and was acceptable to the Aboriginal Traditional Owners.

54. No issues of heritage value have been identified for the Stage 2 proposed works.

## Key legislation

55. The following key legislation is relevant to this project:

    a. *Environment Protection and Biodiversity Conservation Act* 1999;

    b. *Aboriginal and Torres Strait Islander Heritage Protection Act* 1984;

    c. *Radiocommunications Act* 1992;

    d. *Building and Construction Industry Improvement Act* 2005;

    e. *Fair Work Act 2009*; and

    f. *Work Health and Safety Act* 2011.

## Impacts on local communities

56. The project will employ skilled construction workers for all works that are proposed during the construction period. This will provide a positive economic stimulus to small and medium businesses in the regions.

## Consultation with stakeholders

57. Defence recognises the importance of providing local residents, statutory authorities and other interested stakeholders an opportunity to provide input into, or raise concerns relating to the Joint Project 154.

58. Defence has engaged with a variety of internal and external stakeholders in each of the regions impacted by this proposal. A list of stakeholders with whom Defence has, or plans to consult with is at Attachment 6.

## Public transport

59. There are no public transport implications arising from this project, as the project does not add to any base population. Furthermore, the location of the proposed works at Nurrungar is not serviced by public transport.

## Local road and traffic concerns

60. The proposal considered local road and traffic concerns. Except for Nurrungar, the project does not increase personnel numbers and Defence does not foresee any change in the current use or vehicle numbers accessing any of the sites. At Nurrungar, there will be intermittent periods of increased vehicle numbers accessing the proposed facilities but these will not cause any significant additional impact on public infrastructure in the area.

## Zoning, local approvals and land acquisition

61. In September 2014, the Federal Court of Australia granted Native Title to the Kokatha Uwankara Group for a parcel of land that covers the wider Woomera area and surrounds Nurrungar.

62. Since all proposed works to be undertaken at Nurrungar will occur on Commonwealth land, there will be no change to the existing land use conditions. Regardless, the two local Aboriginal communities; the Kokatha Uwankara Group and the Barngarla Group, have been closely engaged in the development of the proposed works due to the high Aboriginal heritage value in the Nurrungar area. Further, the proposed usage is consistent with current zone and precinct plans. The proposed developments do not require acquisition of additional land nor do they involve land disposal.

63. Defence has consulted with the Kokatha Uwankara Group regarding continued access to existing services corridors associated with Nurrungar.

64. Siting Boards have been undertaken to identify and agree the location for all sites.

## Planning and design concepts

65. The proposed designs include the following considerations:

    a. Provision of a safe, efficient and pleasant workplace;

    b. Provision of the required functional requirements and offer economy in relation to the floor area, construction techniques, buildability and finishes; and

    c. Impact of materials, construction techniques, finishes, equipment and building systems on the life cycle of the facilities.

66. Capital costs have been balanced against forecast operational and maintenance costs in the selection of building services and equipment. Consideration has been given to energy efficient solutions complying with Defence Ecologically Sustainable Design requirements.

67. Buildings have been sited to meet the project requirement and minimise the impact on the existing environment.

## Structural design

68. The Test Recording Building at Nurrungar will consist of an external wall and roof structure of steel braced frame construction, with cold formed steel wall framing and roof purlins.

69. The Workshop Building at Nurrungar will be of steel braced frame construction, with cold formed steel wall girts, roof purlins and tamper proof fixings to external cladding. The floor will be a stiffened ground slab suitable for the prescribed vehicles with pad footings for structural columns.

70. The extension to the Defence Science and Technology Organisation building, located in Edinburgh South Australia, maintains the original features and style of the existing building. Original roof and external finishes have been retained where feasible.

71. The remaining secure stores consist of an external wall and roof structure of steel braced frame construction, with cold formed steel wall framing and roof purlins. An internal reinforced concrete room is constructed to Secure Area standards in accordance with Security Construction and Equipment Committee and Australian Protective Security Policy Framework as defined in the Defence Security Manual. The actual level of secure standard required for each site is dependent on the Physical Security Zone allocated to the area to be used for the Secure Store at each individual location. The floor will be a stiffened ground slab suitable for the prescribed loads, with pad footings for structural columns.

## Materials and Furnishings

72. All buildings will be clad with pre-finished metal cladding, which are cost effective, durable and able to withstand regional environmental conditions.

73. The use of colours and finishes will be selected to blend into the existing landscape.

74. Roofing and rainwater fittings have been selected for superior resilience to the Australian environment.

## Mechanical Services

75. The mechanical services required for the collective proposed works are minimal. For each site, requirements have been developed in accordance with the user's needs and the Building Code of Australia. This will include new, upgraded, and refurbished air conditioning systems at the Nurrungar support facilities, Edinburgh facilities and Watsonia facilities respectively. Evaporative cooling and mechanical ventilation will also be incorporated into the Nurrungar support facilities.

## Hydraulic Services

76. The Workshop and Test Recording buildings at Nurrungar will have an independent potable water supply and fire water supply. Water recycling options are being investigated to incorporate the capture and reuse of building water runoff.

## Electrical Services and Fire Protection

77. Lighting, power and fire detection will be provided in accordance with Australian Standards and Defence's engineering requirements.

78. Existing electrical infrastructure and switchboards are being utilised for this project.

79. Fire detection systems, indication panels, emergency and exit lighting will be provided to the new and extended facilities in accordance with Australian Standards. All construction and fire protection requirements will be in accordance with the Building Code of Australia, The Defence Manual of Fire Protection Engineering (based on the building Asset Classification) and all other applicable Commonwealth and State Codes and Standards.

## Acoustics

80. Through the course of designing the proposed facilities, it has been determined that there are no specific acoustic issues that require further treatment through design or construction.

## Landscaping

81. Apart from the Nurrungar site, this proposal will not cause any substantial change in the essential landscape character of the sites. At Nurrungar, the proposed works have been designed to cause minimal visual impact to the existing environment by recessing support facilities into the existing terrain. Minimal landscaping works at other sites will restore areas disturbed during construction and provide general improvement to the built environment. Precautions will be taken to avoid compromising environment sensitivities by adopting landscaping practices in accord with local environmental conditions and the Construction Environment Management Plan.

## Other Civil Works

82. **Nurrungar test track.** Civil works are required to make the Nurrungar test track flat, as the location is in a natural valley. The extent of civil works has been minimised by siting the test track in a flat bed valley that offers natural features to contain radio frequency leakage. Drainage works have been minimised through the siting of the support buildings in the hillside adjacent to the test track and by designing the test track to naturally shed water and to permit overland flow during periods of high rainfall. Disturbance from the civil works required to build the proposed access road has been minimised through siting the access road to avoid culturally sensitive areas.

83. **Other sites.** Civil works at all other sites will be minimal due to the re-use and refurbishment of existing space as well as the siting of secure stores in existing built environments.

## Environmental sustainability of the project

84. **Water and energy conservation measures.** The ecologically sustainable measures for the project are balanced with other requirements for Defence buildings, including security, heritage and occupational health and safety considerations, to ensure that Defence’s operational capability is not compromised.

85. All structures and pavements have been purposefully designed and will be constructed, operated and maintained to ensure that they use energy efficiently.

86. **Details of compliance with local, state and Commonwealth water and energy policies.** All works will comply with local, State and Commonwealth water and energy policies.

87. The following additional environmental studies have been commissioned and control measures instigated in relation to the Nurrungar test track works:

    a. Initial Environmental Assessment;

    b. Environment and Heritage Impact Assessments and Management Report;

    c. Ecology Investigations of the Western Valley, Nurrungar;

    d. Construction Environmental Management Plan;

    e. Aboriginal Heritage Protection Plan; and

    f. Environment Compliance Certificate.

88. The proposed works at Nurrungar are the only works to be delivered on an undeveloped site. All other proposed works are planned within existing developed areas. The bulk of the environmental reports listed above have therefore been targeted on the Nurrungar area and the outcomes of these reports have identified no ecological Matters of National Environmental Significance. This means that no endangered species of flora or fauna exist in the Nurrungar area.

## Reuse of existing structures

89. The proposed works include the extension, upgrade or refurbishment of existing facilities. The secure stores in Enoggera and Palmerston will be incorporated into existing warehouses. The training facility in Watsonia will be delivered by renovating and refitting an existing classroom inside the Defence Force School of Signals headquarters building. Finally, the research and development facilities in Edinburgh will be extensions of existing structures or incorporated into existing laboratories.

90. For locations where alarm systems are required, facilities have been sited where they can best pick up existing connection points.

## Provisions for People with Disabilities

91. Access and facilities for the disabled will be provided where necessary in accordance with the Building Code of Australia, Australian Standard AS1428 and Defence's policy 'Disabled Access and Other Facilities for Disabled Persons'.

## Childcare Provisions

92. There is no requirement for additional childcare facilities, as this project does not increase base populations.

## Security measures

93. Advice from designated security authorities has been incorporated into the design solutions for the proposed facilities, as appropriate. The security threat assessment has been reviewed during the detailed design phase and the new facilities will be secured as appropriate to the classification level required for the activities to be conducted. Appropriate security protection will be provided in accordance with the *Defence Security Manual, Defence Construction Security Reference Manual* and any other specific project requirements.

## Work Health and Safety measures

94. The facilities to be provided under this project will comply with Department of Defence Work Health and Safety policy, the *Work Health and Safety (Commonwealth) Act* 2011, *Work Health and Safety (Commonwealth) Regulations* and the Defence Work Health and Safety Manual.

95. In accordance with section 35(4) of the *Building and Construction Industry Improvement Act (Commonwealth)* 2005*,* contractors will 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. All construction sites will be appropriately secured to prevent public access during the construction period. The only special or unusual public safety risk from the proposed works relates to radio frequency hazards. Where facilities have been proposed to support testing in the electromagnetic spectrum, appropriately shielded working areas have been incorporated into design.

# Cost-effectiveness and public value

## Outline of project costs

96. The estimated cost of this facilities project is $24.6 million, excluding Goods and Services Tax.

97. This cost estimate includes provision for management and design, construction, furniture, fittings and equipment, contingencies and an allowance for escalation.

98. Net operating costs associated with the proposed redevelopment are projected to increase due to the construction of new facilities.

## Details of project delivery system

99. A sole Project Manager / Contract Administrator has been appointed to manage the proposed works and to administer the contracts for design and construction services.

100. The Defence Estate Quality Management System has been used as the guiding methodology for all works at all sites. The works at Nurrungar will be delivered under a Head Contract arrangement. The Works at Edinburgh and Watsonia will be delivered under Medium Works Contract arrangements. The works at all remaining sites will be delivered under a single Head Contract.

## Construction schedule

101. Subject to Parliamentary approval of the proposed works, construction will occur as follows:

    a. **Stage 1.** The proposed works at Nurrungar will commence in April 2015 and are due to be completed by late 2015; and

    b. **Stage 2.** With the approval of the Parliamentary Standing Committee on Public Works in February 2012, the remaining works commenced construction in 2013 and are due to be completed by mid 2015.

## Public Value

102. This project aims to address fundamental inputs to the Counter IED capability and therefore addresses facilities for research and development, engineering acceptance,

storage and training. During the construction period, regional construction sub-contractors will deliver the proposed works, supporting their respective local employment market. At Nurrungar, the Commonwealth Indigenous Opportunities Policy and the Indigenous Business exemption provisions will be utilised where appropriate.

103. There will be limited on-going specialised employment generated by growing and maintaining the capability.

## Revenue

104. No revenue will be derived from this proposal.

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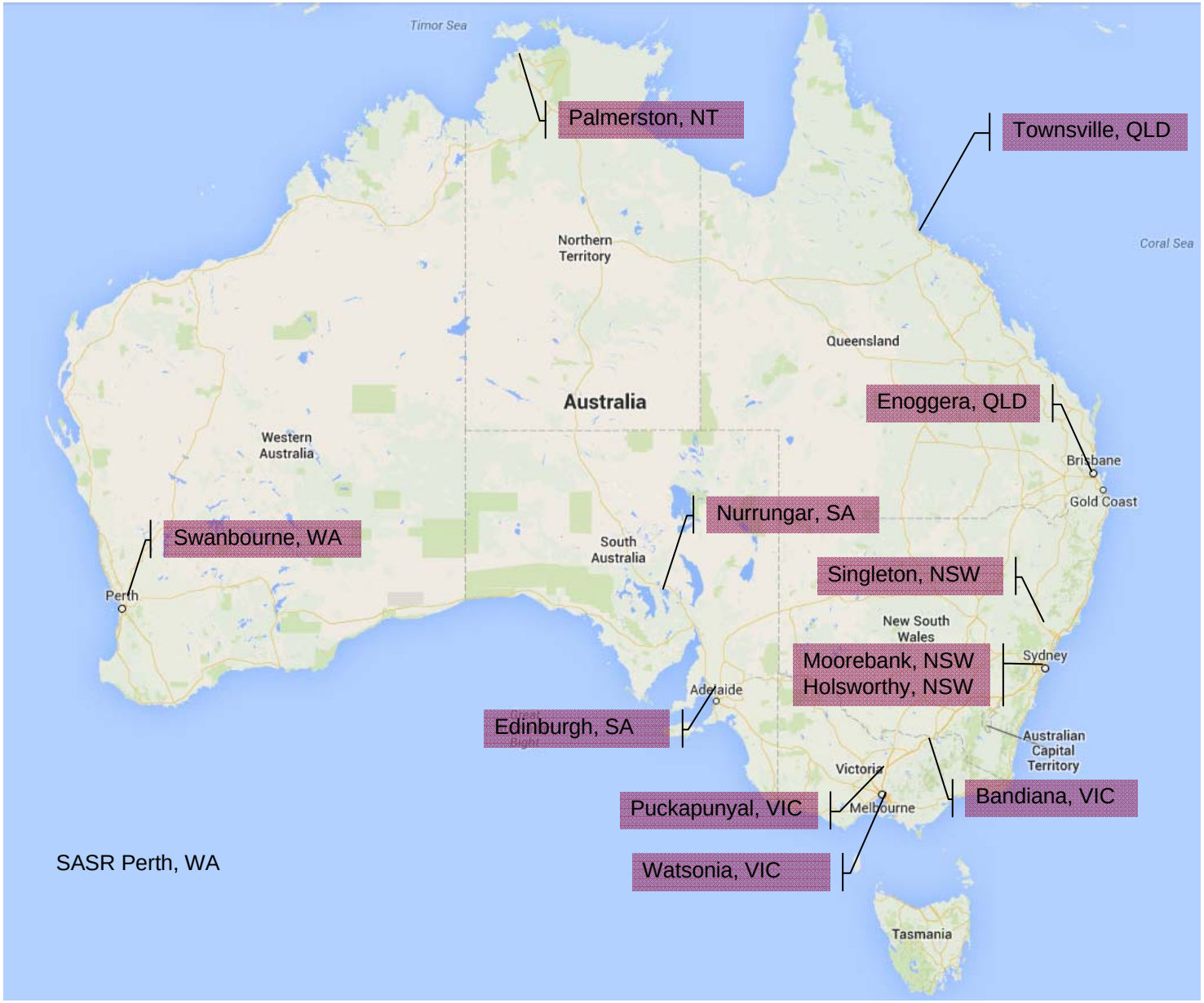
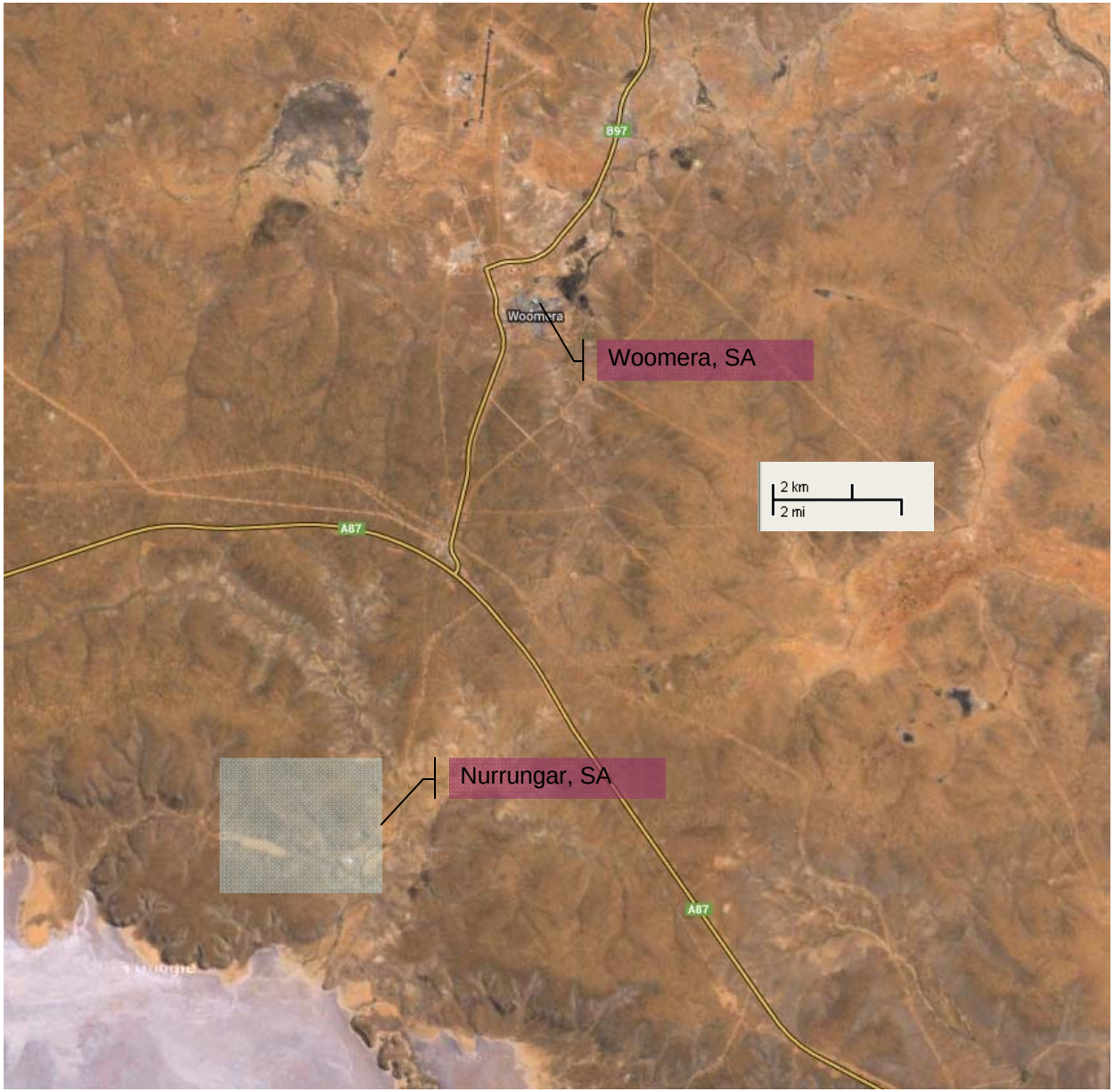
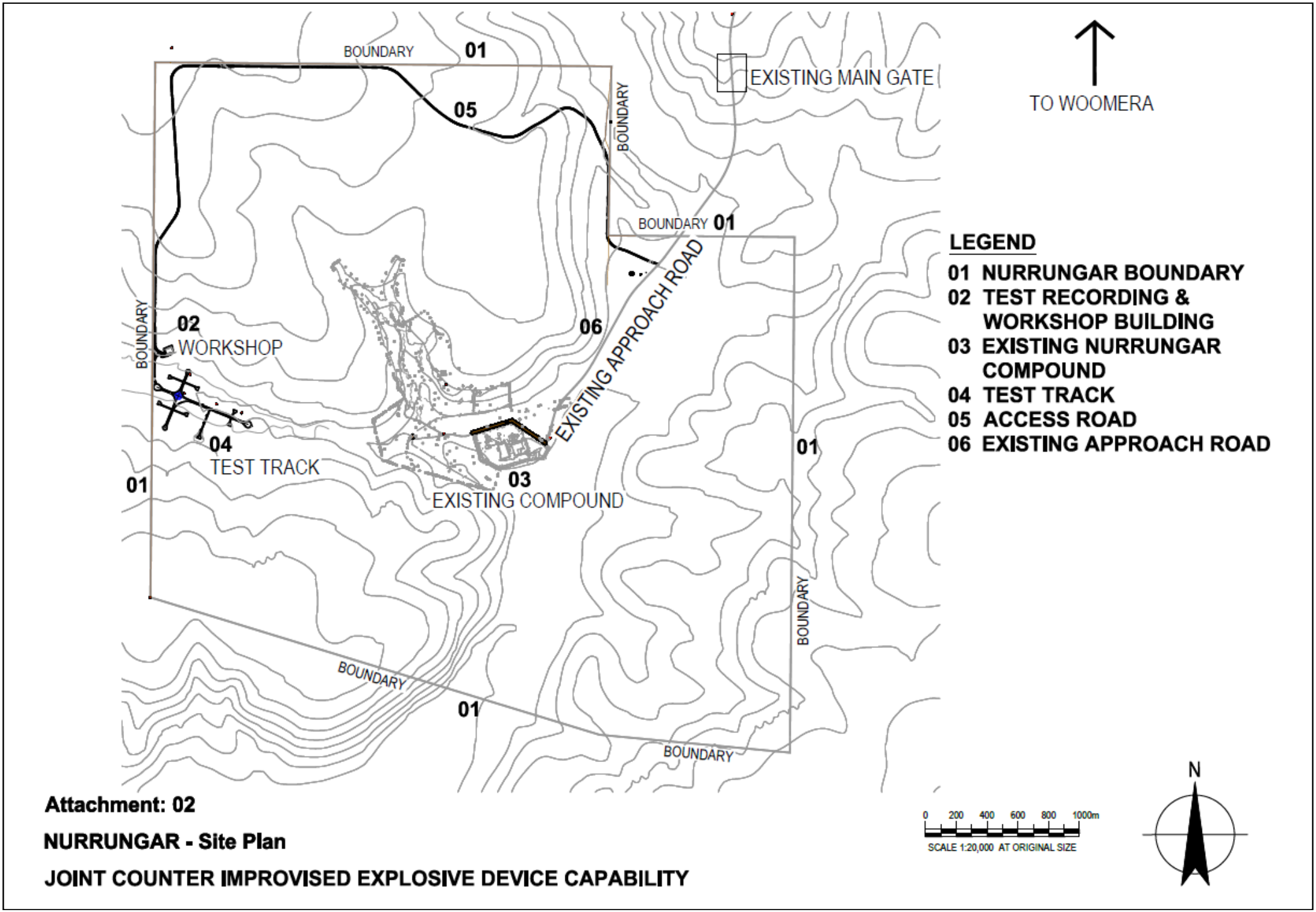



Attachment: 01-1
PROJECT LOCATIONS – All Sites
JOINT COUNTER IMPROVISED EXPLOSIVE CAPABILITY



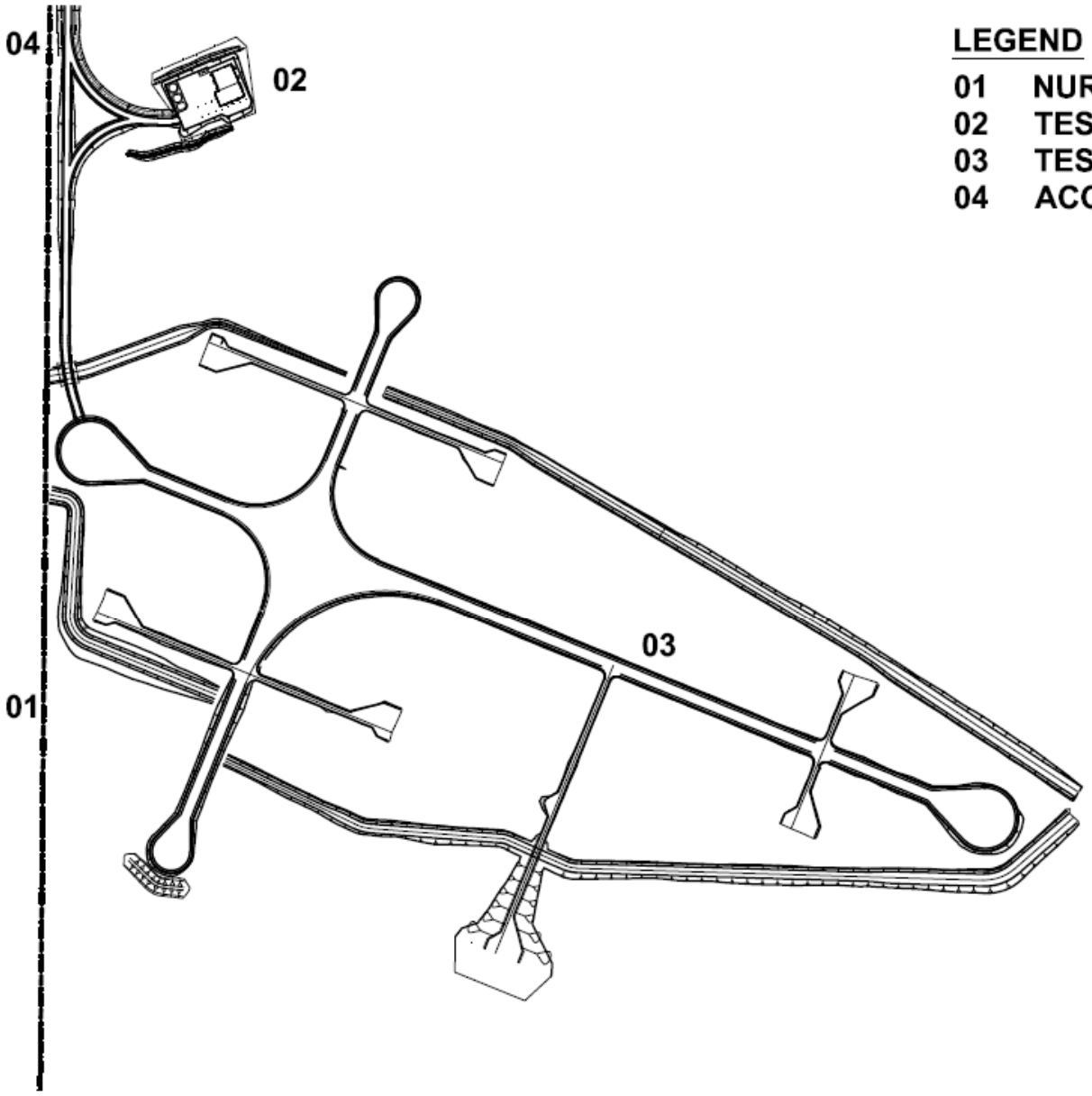

Attachment: 01-2
PROJECT LOCATIONS – Nurrungar
JOINT COUNTER IMPROVISED EXPLOSIVE CAPABILITY




**Attachment: 02**

**NURRUNGAR - Site Plan**

**JOINT COUNTER IMPROVISED EXPLOSIVE DEVICE CAPABILITY**




**LEGEND**

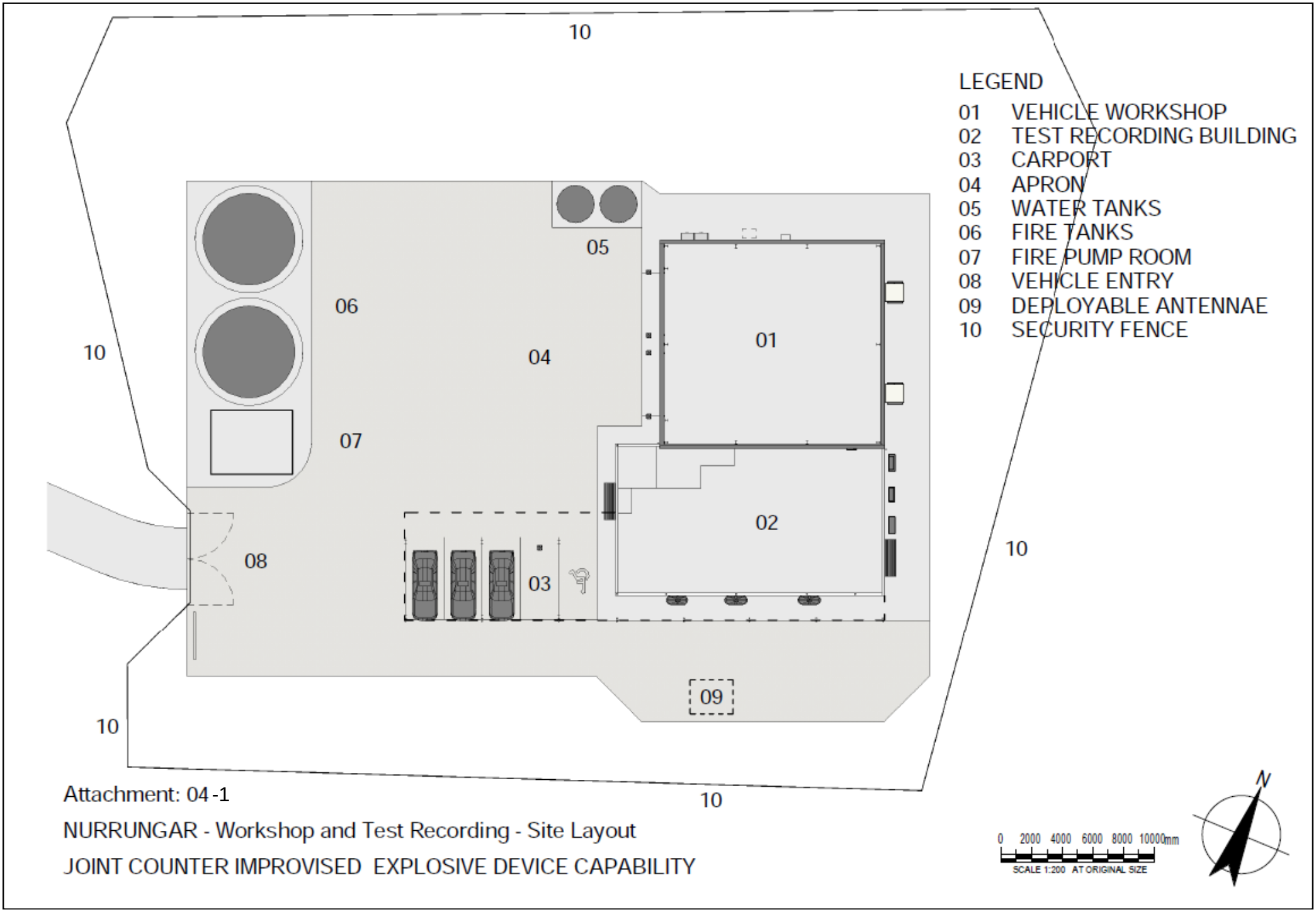
01 NURRUNGAR BOUNDARY
02 TEST RECORDING & WORKSHOP BUILDING
03 TEST TRACK
04 ACCESS ROAD

N

**Attachment: 03**

**NURRUNGAR - Test Track**

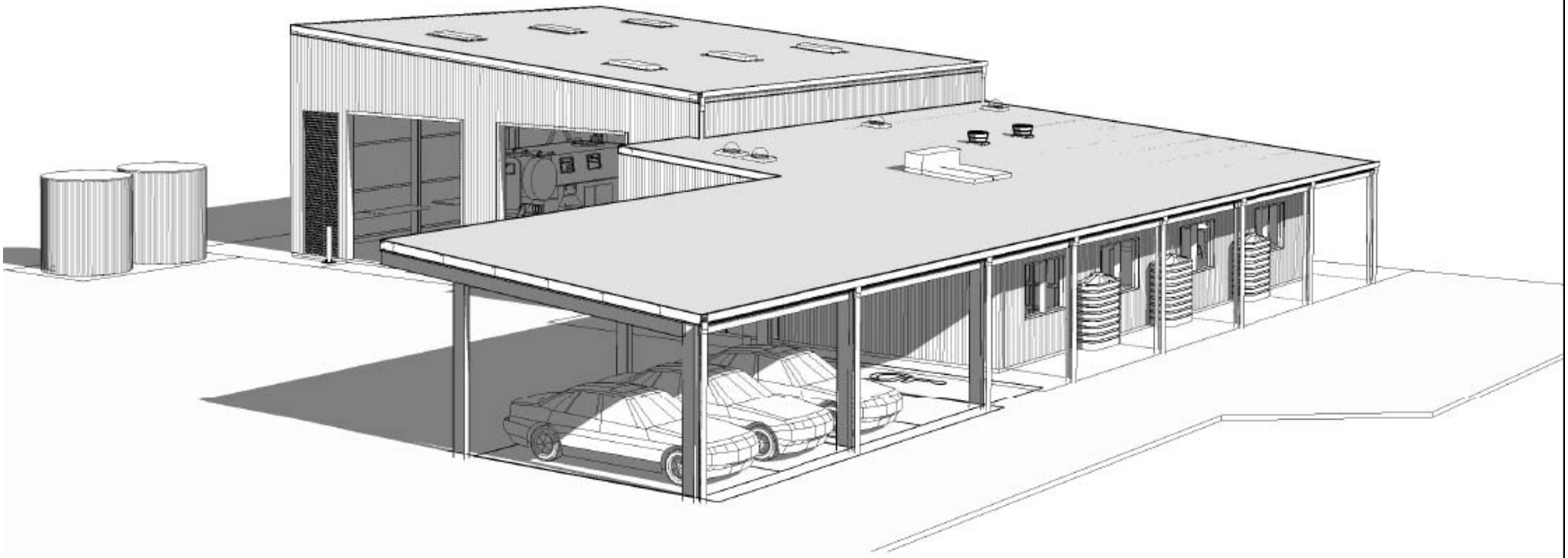
**JOINT COUNTER IMPROVISED EXPLOSIVE DEVICE CAPABILITY**




Attachment: 04-1

NURRUNGAR - Workshop and Test Recording - Site Layout

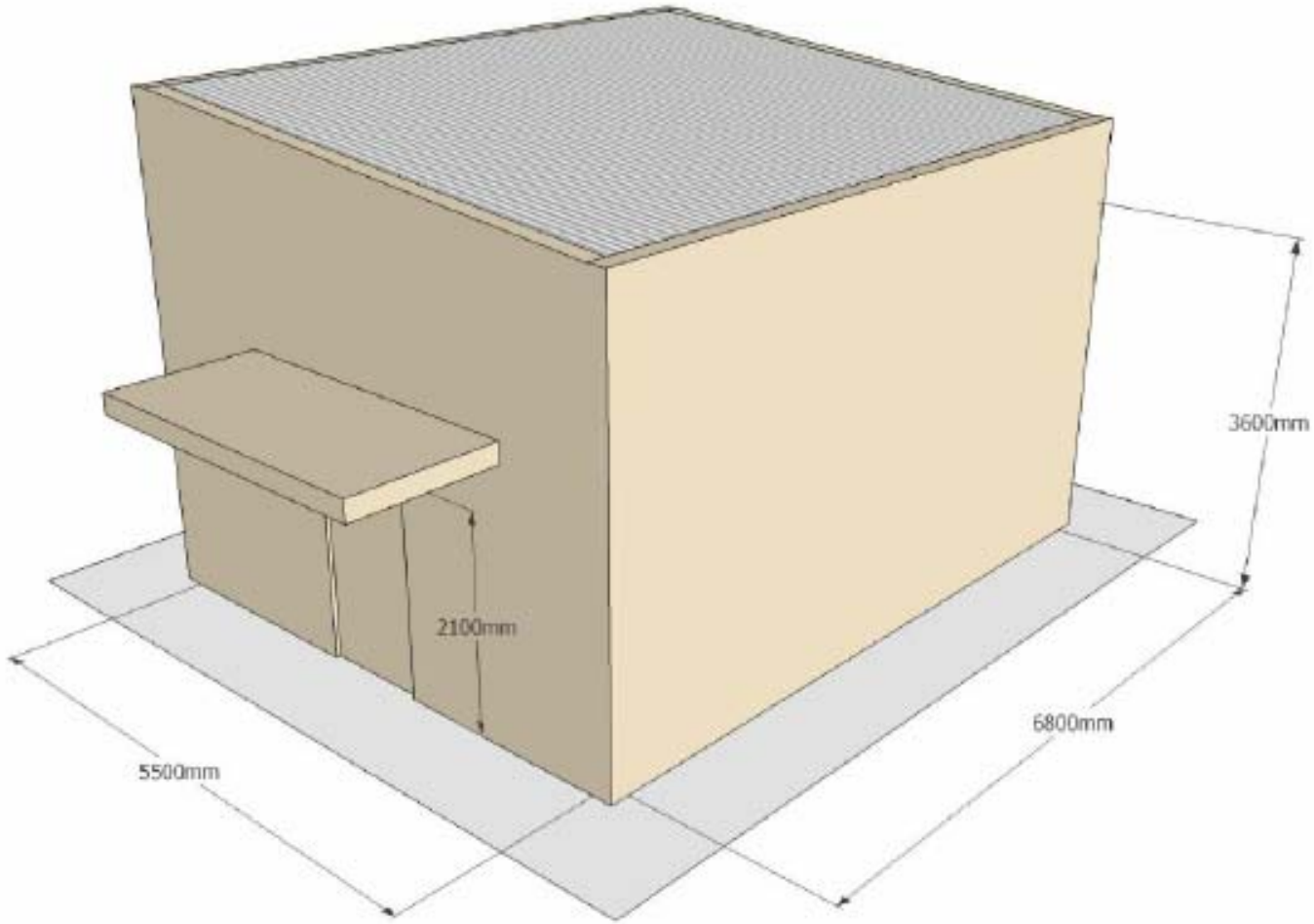
JOINT COUNTER IMPROVISED EXPLOSIVE DEVICE CAPABILITY



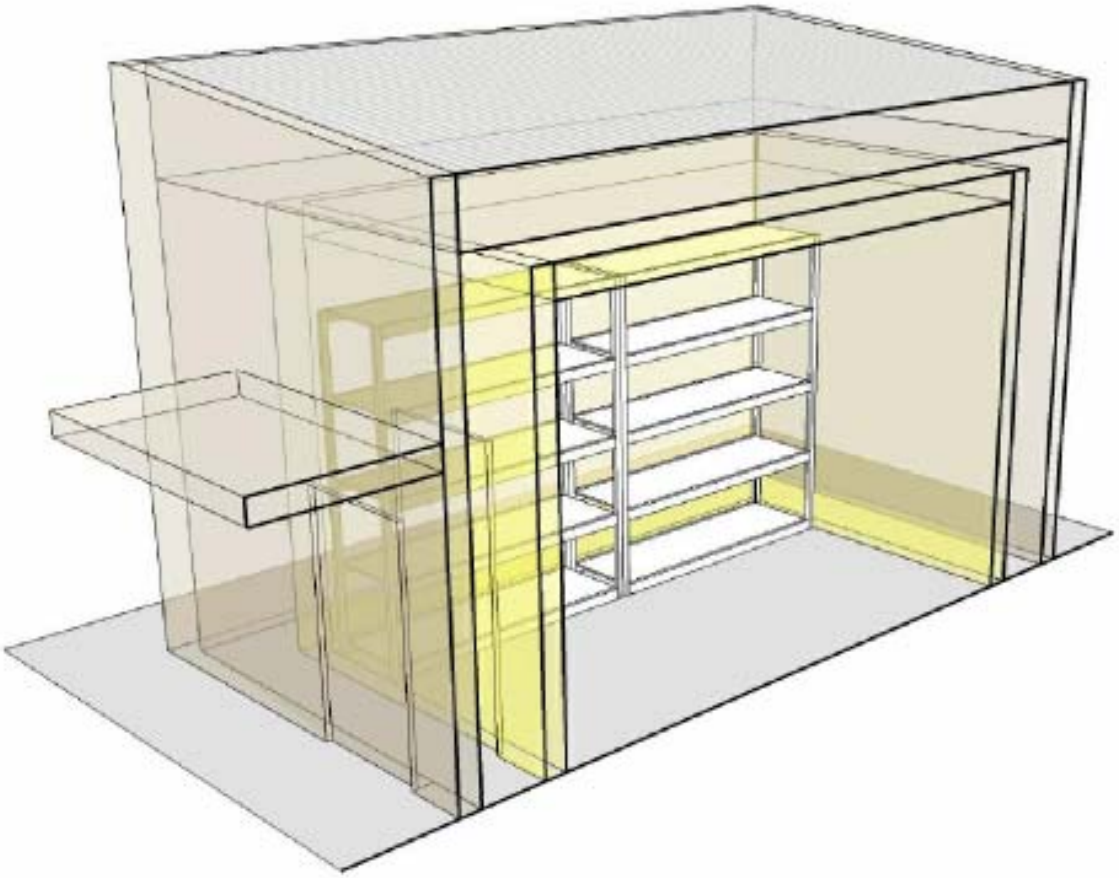
Attachment: 04-2

NURRUNGAR - Workshop and Test Recording Building

JOINT COUNTER IMPROVISED EXPLOSIVE DEVICE CAPABILITY




Attachment: 05-1
SECURE STORE – Visual Impact Concept
JOINT COUNTER IMPROVISED EXPLOSIVE CAPABILITY



Attachment: 05-2
SECURE STORE – Visual Interior Concept
JOINT COUNTER IMPROVISED EXPLOSIVE CAPABILITY

# Stakeholder List

## Stage 1

Nurrungar Test and Evaluation Facility – Woomera SA

- Mr Rowan Ramsey MP, Federal Member for Grey
- Mr Edward Hughes MP, State Member for Giles
- Mr Stephen Loosley, Woomera Advisory Board Chair
- Department of Sustainability, Environment, Water, Population and Community
- South Australian Native Title Services on behalf of the Kokatha Uwankara
- Teitzel and Associates, on behalf of the Barngarla Management Corporation
- South Australian Land Titles Office
- Attorney Generals Department
- Collinsville Stud, Arcoona Station Pastoral Lease holder

## Stage 2

DSTO and JEWOSU Edinburgh, SA

- MR Nick Champion MP, Federal Member for Wakefield
- Mrs Leesa Vlahos JP, State Member for Taylor
- Ms Gillian Aldridge, Mayor of the City of Salisbury
- Mr Glenn Docherty, Mayor of the City of Playford

DFSS Watsonia, VIC

- The Hon Jenny Macklin MP, Federal Member for Jagajaga
- Mr Colin Brooks MP, State Member for Bundoora
- Cr Craig Langdon, Mayor of the City of Banyule

CATC Puckapunyal, VIC

- Mr Rob Mitchell MP, Federal Member for McEwen
- Ms Cindy McLeish MP, State Member for Seymour
- Cr Rodney Parker, Mayor of Mitchell Shire Council
- Local industry

Attachment 06-2
JOINT COUNTER IMPROVISED EXPLOSIVE DEVICE CAPABILITY

ALTC Bandiana, VIC

- Ms Cathy McGowan AO, MP, Federal Member for Indi
- Mr Bill Tilley MLA, State Member for Benambra
- Cr Rod Wangman, Mayor of the City of Wodonga

SME and SOER Holsworthy, and DNSDC Moorebank, NSW

- Mr Craig Kelly MP, Federal Member for Hughes
- Ms Melanie Gibbons MP, State Member for Menai
- Mr Ned Mannoun, Mayor of the Liverpool City Council

SOI Singleton, NSW

- The Hon Joel Fitzgibbon MP, Federal Member for Hunter
- The Hon George Souris MP, Member for Upper Hunter
- Cr John Martin OAM, Mayor of Singleton

1 BDE Darwin, NT

- Mrs Natasha Griggs MP, Federal Member for Solomon
- Mr Gerard Wood, Member for Nelson
- Katrina Fong Lim, Lord Mayor of Darwin

3 BDE and CTC Townsville, QLD

- Mr Ewen Jones MP, Federal Member for Herbert
- Mr John Hathaway, State Member for Townsville
- Cr Jenny Hill, Mayor of Townsville City Council

7 BDE Enoggera, QLD

- Mrs Jane Prentice MP, Federal Member for Ryan
- The Hon Campbell Newman, State Member for Ashgrove
- Cr Graham Quirk, Lord Mayor of Brisbane

SASR Perth, WA

- The Hon Julie Bishop MP, Federal Member for Curtin
- The Hon Colin Barnett MLA, State Member for Cottesloe
- Lisa-M. Scaffidi, Lord Mayor of Perth