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Project: Telstra SAED

Review of Environmental Factors
Royal National Park
Grays Point 2232

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Review of environmental factors

This format is the **standard template** for preparing a Review of Environmental Factors (REF) for activities within lands reserved or acquired under the *National Parks and Wildlife Act 1974*. The template addresses the environmental impact assessment requirements for activities subject to Part 5 of the *Environmental Planning and Assessment Act 1979*.

Separate, streamlined templates are available and should be used instead for the following activities:

► **minor activities and uses requiring a lease or licence under s.151 of the NPW Act** – for further information refer to the sustainability assessment criteria and guidelines at
http://www.environment.nsw.gov.au/protectedareas/developmntadjoiningdecc.htm

► **mineral and petroleum exploration in State Conservation Areas** – contact OEH for further information.

To complete this template you will need the Office of Environment and Heritage (OEH) *Proponents Guidelines for the Review of Environmental Factors.* This and other guidance documents are available at the OEH website at www.environment.nsw.gov.au or by contacting the Environment Line on 13 15 55.

Once completed and signed, the template, together with the applicable fee, should be sent to your nearest Parks and Wildlife Regional Office which can be located at:

http://www.environment.nsw.gov.au/NPWS/NPWSRegions.htm

NOTE FOR EXTERNAL PROPONENTS:

If the REF is for an activity to be undertaken by an individual, company or organisation, the proponent must ensure:

► **that they have confirmed the legal permissibility of the proposal (section 3.1), and**

► **consulted with the relevant Parks & Wildlife Regional Office to obtain in-principle support for the proposal.**

If the REF is for an activity requiring a lease or licence under s.151 NPW Act, telecommunications facilities, or within the Sydney Drinking Water Catchment it will need to be submitted with additional information (refer Section 9).

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1. Brief description of the proposed activity

Please provide a brief description of the work to be conducted:

Description of proposed activity(s)*	Installation of a new Telstra telecommunications facility, consisting of: One (1) 35m high concrete monopole Two (2) panel antennas (each 2.6 metres long) at elevation 35m on the monopole One (1) panel antenna (2.35m long) at elevation 35m on the monopole One (1) equipment shelter (3m x 2.5m) An additional nine (9) new antennas are proposed for installation on the monopole at a future date: Six (6) panel antennas (1.3m long) at elevations 35.9m and 34.1m Two (2) panel antennas (each 2.6m long) at elevation 35m One (1) panel antenna (2.3m long) at elevation 35m The facility would be located within a 10m x 6m (60m^2) compound with a 3m Asset Protection Zone established adjacent to the compound. The compound would be located on the northern side of an existing vehicular access track (Anana Management Trail). Trenching (750mm deep x 300mm wide) along the Anana Management Trail to install conduits and pits to run electrical power and fibre to the proposed site from Greenhaven Road.
Estimated commencement date?	Unknown at date of submission – dependent on grant of licence.
Estimated completion date?	Approximately 4-5 weeks from commencement date.

*Note a comprehensive description of the proposal is contained at section 5.2 of this form.

Figure 1: Aerial view of proposed Telstra location on the northern side of the Anana Management Trail

2. Proponents details

All correspondence and notices will be sent to the address of the proponent.

Name	Given Name: Davina
	Surname: Knox
Organisation	Aurecon Pty Ltd on behalf of Telstra
ACN /ABN (if applicable)	ACN: ABN: 54 005 139 873
Section/Division (OEH proponents only)	
Position	Town Planner
Address	No: 116 Street Name: Military Road
	Suburb: Neutral Bay
	State: NSW Postcode: 2089
Phone numbers	Business: 02 9465 5389 Mobile:
Fax	
Email	davina.knox@aurecongroup.com

3. Permissibility

3.1 Legal permissibility

Indicate whether the activity is permissible under the legislation. Section 1.10 and Appendix 1 of the *Proponents Guidelines for the Review of Environmental Factors* provides guidance on permissibility. Include explanation where necessary.

☒	*National Parks and Wildlife Act 1974* (NPW Act)

The proposed activity is **permissible** under Section 153D "Leases, licences and easements for broadcasting or telecommunications facilities" of the National Parks and Wildlife Act 1974.

☒	Objects of the Act (s.2A)

The proposed activity is **not** inconsistent with the Objects of the Act (s.2A).

☒	Reserve Management Principles (s.30E-30K)

The proposed activity is **not** inconsistent with the Management Principles for a National Park as set out in s.30E National Parks of the National Parks and Wildlife Act 1974.

☒	Title and relevant sections of plan of management or Statement of Interim Management Intent (or drafts):

The Royal National Park is subject to the following Plan of Management:

ROYAL NATIONAL PARK, HEATHCOTE NATIONAL PARK AND GARAWARRA STATE RECREATION AREA PLAN OF MANAGEMENT

Section 4.3.4 Management Operations.

The proposed activity is not inconsistent with the purposes of reservation of the Royal Naional Park or the the policies for Management Operations as set out in Section 4.3.4 of the Plan of Management.

☒	Leasing, licencing and easement provisions of Part 12

National Parks and Wildlife Act 1974 – Section 153D Leases, licences and easements for broadcasting or telecommunications facilities.

> *Clause 153D(1):*
> For the purpose of the erection, use or maintenance of broadcasting or telecommunications facilities, the Minister may grant leases of, or licences to occupy or use, or easements or rights of way through, on or in, any land reserved under this Act

The Act states that the minister must not grant a lease, licence, easement or right of way under this section unless the minister is satisfied that:

(a) there is no feasible alternative site for the proposed broadcasting or telecommunications facility concerned on land that is not reserved under this Act
Comment: refer to Section **6. Reasons for the activity and consideration of alternatives** of this document for further discussion

(b) the site of any proposed above ground broadcasting or telecommunications facility covers the minimum area possible
Comment: a minimum lease area is provided under the proposal

(c) the proposed broadcasting or telecommunications facility is to be designed and constructed in such a manner as to minimise risk of damage to the facility from bushfires
Comment: refer to ***Rural Fires Act 1997*** discussion provided later in this section

(d) the site and construction of the proposed broadcasting or telecommunications facility have been selected, as far as is practicable, to minimise the visual impact of the facility
Comment: - the facility is designed as a monopole with antennas mounted at the top

(e) if feasible, an existing means of access to the proposed site of the lease, licence, easement or right of way is to be used
Comment: an existing graded access road is to be utilised to access this site

(f) the proposed broadcasting or telecommunications facility is essential for the provision of broadcasting or telecommunications services for land reserved under this Act or for surrounding areas to be served by the facility
Comment: the facility would provide coverage to areas of the National Park, including Audley. No alternative location was identified, in an area other than land reserved under this Act, as being suitable for the siting of this proposal.

(g) the broadcasting or telecommunications facility is to be removed and the site of the facility is to be restored as soon as possible after the facility becomes redundant (for example, due to advances in technology)
Comment: the facility would be removed and the site of the facility would be restored as soon as possible should the facility become redundant

(h) the site of the proposed broadcasting or telecommunications facility has been selected after taking into account the objectives set out in any plan of management relating to the land concerned
Comment: please refer to the previous section **Objects of the Act** and **Reserve Management Principles** for discussion regarding the objectives

(i) the proposed broadcasting or telecommunications facility is, if feasible, to be co-located with an existing structure or located at a site that is already disturbed by an existing lease, licence, easement or right of way on the land concerned
Comment: no existing infrastructure is contained at or near the selected site; therefore, no opportunity exists to co-locate the facility. However, the selected site is adjacent to land that has previously been disturbed and developed for use as a vehicular access track

☐	Management powers and responsibilities of OEH (s.8 and s.12) – for internal OEH projects

Not Applicable – not an internal OEH project.

<u>Special note</u>: for lease proposals under s.151 NPW Act involving new buildings or structures

Section 151A(5) of the NPW Act states that the Minister must not grant a lease under s.151 for visitor or tourist uses that authorises the erection of a new building or structure unless the plan of management identifies the purpose as permissible and the general location for the new building. If relevant to the proposal indicate whether this requirement has been met, or will be.

☒	*Wilderness Act 1987 (for activities in wilderness areas consider objects of the Act, management principles, s.153, etc)*
The proposal is **not** located within the boundaries of any area defined under this Act; therefore, the provisions of this Act do not apply to this proposal.	
☒	*Environmental Planning and Assessment Act 1979* (EP&A Act) *(consider aims and objectives of relevant environmental planning instruments, zoning and permissible uses, development controls, etc)* Explanatory note: Clause 65 of State Environmental Policy (Infrastructure) 2007 provides that development for any purpose may be undertaken within specified OEH lands without consent. This removes the need for development consent under Part 4 of the EP&A Act, meaning that most activities within OEH land are assessed under Part 5. However, proponents should still confirm that the SEPP is applicable to their particular proposal, and provide consideration of other environmental planning instruments that would otherwise apply to the proposal if it were not occurring on OEH land.

The NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) establishes the planning system in NSW, including a framework for the assessment of proposed developments. The environmental assessment which follows has been conducted with regard to Section 79(c) of the EP&A Act.

Sutherland Shire Council is not the consent authority for this proposal as it is located within the boundaries of the Royal National Park.

The Office of Environment and Heritage is the consent authority and the proposed activity will be assessed under the National Parks and Wildlife Act 1974.

However, if the site was not occurring on OEH land the following Environmental Planning Instruments would be relevant to the subject site:

State Environmental Planning Policy (Infrastructure) 2007: The proposed facility is in accordance with the aim of this SEPP in that the proposal would provide essential infrastructure to the community. A due process of assessment with the relevant public authorities (particularly OEH), and community consultation are to be undertaken; and

Sutherland Shire Local Environmental Plan (LEP) 2006: The proposed facility is not inconsistent with the policies of the LEP. Discussions have been held with the Town Planning Section of Sutherland Shire Council who have advised that they have no objection to the proposal subject to the appropriate permissions/licence being obtained from OEH/NPWS.

☒	*Heritage Act 1977 (for activities likely to affect items or places of historic cultural heritage value)*

Section 60 of the *Heritage Act 1977* states that alterations to or demolition of an item listed on the State Heritage Register require the preparation of a Section 60 application.

The proposal does **not** impact upon any item of heritage significance listed on the State Heritage Register.

☒	*Threatened Species Conservation Act 1995* (TSC Act) *(is the activity consistent with the biodiversity conservation objectives of the Act?)*

A Section 5A Assessment (short tablature form) was undertaken for those TSC/EPBC listed species considered as possible occurrences within the study area based on each species' known habitats and distribution as well as vegetation type/habitats recorded in the study area (refer to **Appendix A**). Such species are referred to as 'Subject Species'.

A Section 5A Assessment (refer to **Appendix A**) concluded that the proposed removal of 57.5 m^2 (0.00575 ha) of vegetation (for the purposes of establishing an Asset Protection Zone) is unlikely to result in a significant impact on threatened species, populations or ecological communities.

☒	*Rural Fires Act 1997 (is the activity consistent with the objectives of protecting life and property and protecion of the environment?, is it consistent with bush fire management plans?)*

The *Rural Fires Act* provides for the prevention, mitigation and suppression of bush and other fires in local government areas, for the co-ordination of bush fire fighting and bush fire prevention throughout the State, for the protection of persons from injury or death, and property from damage, arising from fires, and for the protection of the environment.

The proposed mobile phone base station is a type of development that is not specifically covered by a bush fire management plan.
The NSW Rural Fire Service has provided a practice note "Telecommunication Towers in Bush Fire Prone Areas" which provides guidance to those designing proposed facilities. A copy of the guidance is attached as Appendix B.

When designing the site the following informed the design process:

- the NSW Rural Fire Service Practice Note "Telecommunication Towers in Bush Fire Prone Areas"; and
- the requirements under s.153D of the NPW Act for the site to cover the minimum area possible whilst being designed in such a manner as to minimise the risk of damage to the facility from bushfires.

This resulted in the following methodology being implemented in the design.

The proposed facility is located within a perimeter fence and beyond the fence line it is proposed to clear a 3m wide area. This combination would provide an 'Asset Protection Zone'(APZ), as defined by the Rural Fire Service, from the tower/buildings/infrastructure associated with the tower of:

North – 6.0m
East – 4.9m
South – 6.0m (N.B. the existing access track (Anana Management Trail) provides further clearance on this side approximately 9.5m in total)
West – 5.7m

It is noted that Rural Fire Service seek 10m for the APZ, however, in this location it is considered that the zone that will be achieved with the additional 3m clearance is a reasonable compromise to minimise the removal of vegetation within the Royal National Park.

Mobile telecommunications base station facilities are unmanned and the proposed facility will not increase the number of people living or working in the area; does not involve hazardous materials; and will not increase the risk or impact of a natural hazard. In fact, in the event of a bushfire, mobile phone coverage is of high importance as it is often the only means of communication available if landline services have been affected by fire.

No additional fire mitigation measures would be required.

☒	*Fisheries Management Act 1994 (will the activity affect fish or marine vegetation, including threatened species? Is approval required under the Act?)*

The proposal does not involve the development of, or within, any area subject to the provisions of this Act; therefore, the provisions of this Act do not apply to this proposal.

☒	Commonwealth legislation (including the *Environment Protection and Biodiversity Conservation Act 1999* (EP&BC Act) and the *Telecommunications Act 1997*)

The *EPBC Act 1999* identifies seven (7) matters of national environmental significance, which must be considered as part of any application for development. The potentially relevant matters are:

3. "Nationally Threatened Species and Ecological Communities"
The ecological assessment of this proposal (refer to **Appendix A**) has concluded that this proposal is unlikely to have a significant impact upon any species populations or ecological communities. The site is located adjacent to an existing graded access road in an area with minimal vegetation coverage. Refer to the *Terrestrial Ecology Assessment* (attached as **Appendix A**) for a detailed assessment of the anticipated impact of the proposal.

7. "National Heritage Places"
The subject site is located within the boundaries of the Royal National Park which is listed as a local heritage item under Sutherland Shire LEP 2006. The site is not located on or within an area, item or place listed or the State Heritage Register. The Park is listed as a 'National Heritage Item' on the National Heritage List.

The Royal National Park and Garrawarra State Conservation Area were included in the National Heritage List as a 'place of national significance' pursuant to section 324J of the *Environment Protection and Biodiversity Conservation Act 1999*.

The listing was gazetted in the Commonwealth Government Gazette on 15 December 2006. The following National Heritage Values were listed for the site:

> *"The place is important for its richness in a wide array of species including heaths (Epacridaceae), peas and wattles (Mimosaceae and Fabaceae), orchids (Orchidaceae), grevilleas and banksias (Proteaceae) and members of the eucalypt family (Myrtaceae). The place is also extremely important as a centre of temperate animal species richness for a range of groups including perching birds (Passeriformes) especially honeyeaters (Meliphagidae), tree-frogs (Hylidae), reptiles (Reptilia) and butterflies (Lepidoptera). The place can be regarded as exemplifying the biodiverse Hawkesbury Sandstone environment (Braby 2000; OEH 2004; OEH 2006; NSW NPWS 2000)."*

Consideration of the National Heritage Values and the potential impacts of the proposed clearing on these (flora and fauna groups contained therein) have been addressed in the *Terrestrial Ecology Assessment* (refer to **Appendix A**). This Section 5A Assessment concluded that the proposed clearing of 57.5 m^2 of vegetation around the perimeter fence of the compound would be unlikely to result in a significant impact on any species, populations or ecological communities. Therefore, the proposed activity is unlikely to adversely affect the National Heritage Values of the Royal National Park.

3.2 Consistency with OEH policy

Indicate whether the activity is consistent with OEH policy, including an explanation where necessary:

Provide details of relevant OEH policy	The following OEH Policies are relevant to the proposed activity: • Boundary Fencing • Roads • Vehicle Access • Construction Assessment Procedures • Visitor safety The activity is not inconsistent with any of the relevant OEH policies.

3.3 Type of approval sought

OEH proponents

☐	Internal OEH approval* or authorisation, including expenditure

***Note:**

- OEH does not grant park approvals (eg. leases, licences, consents, etc) to itself.
- OEH has a range of general powers to undertake activities on-park, for example sections 8 and 12 of the NPW Act.

External proponents

Appendix 1 of *Proponents Guidelines for the Review of Environmental Factors* provides a list of the types of approval that may be obtained from the OEH.

Provide a brief description of the type of approval sought: e.g. a lease for visitor accommodation under s.151 NPW Act	Lease/ Licence/ Easment for a Telecommunications Facility: Approval for the proposal is sought under *Section 153D of the NPW Act which covers Leases, licences and easements for broadcasting or telecommunications facilities.*
☒	Section 153D of the National Parks and Wildlife Act 1974

Provide a brief description of the type of approval sought: e.g. a lease for visitor accommodation under s.151 NPW Act	Consent to undertake the proposed activity in and on the the park.
☒	Part 2/Division3 Clause 11 of the National Parks and Wildlife Regulation 2009 Part 2/Division3/Clause 18 of the National Parks and Wildlife Regulation 2009

4. Consultation

Specify the details of consultation, including who was consulted, how, when and the results of the consultation. Section 2.6 of *Proponents Guidelines for the Review of Environmental Factors* provides guidance on consultation.

Provide details of consultation*:	**OEH** Aurecon representatives have met with RNP representatives to initiate discussion regarding the opportunity to install a new mobile phone base station in Park grounds. Extensive negotiations have been ongoing with RNP to provide all necessary information. The following procedures were engaged: (i) site reconnaissance was undertaken with RNP representatives (ii) permission was received from RNP to temporarily install a cherry picker on site for the purpose of preparing photomontages of the proposed facility A detailed assessment of the coverage area was also prepared while the cherry picker was installed. This assessment was supplied to RNP (iii) photomontages included in this assessment (refer to **Appendix C**) were previously provided to RNP (iv) additional information regarding the impact upon the existing ecosystems was supplied to RNP (refer to **Appendix A**) Due to the nature of the proposed development, in addition to the consultation that Telstra have already undertaken RNP representatives have advised that further consultation and publication would be required during the period of determination. **Local Council – Sutherland Shire** Discussions with Sutherland Council town planners have identified an 'in principle' acceptance of the proposal - provided consent is received from RNP. **Grays Point Public School** Meetings/discussions have been held with the Principal of Grays Point Public School and School Council Members to inform them of the proposal; all concerns of the School representatives were addressed. Consultation with interest groups, the local community and appropriate sections of Government will occur during the determination process through the Office of Environment & Heritage. Aurecon, on behalf of Telstra will work closely with the Department and provide assistance/information where required. This notification will include: OEH - Metro SW Regional Advisory Committee (Mike Patrick); Federal and State Members of Parliament; Sutherland Shire Council; Councillors of Ward D of Sutherland Shire Council; Grays Point Public School; Rural Fire Services; Aboriginal Community Liaison Officer; Patrons of the nearby Grays Point Oval; and Residential properties in the surrounding streets.

***Notes:**

- Proponents should provide evidence that the relevant OEH (Parks & Wildlife) office supports the proposal in-principle
- There are specific consultation and referral requirements for certain proposals requiring a lease or licence under s.151A of the NPW Act. Refer to the *Leases and Licences Referral Policy and Procedures* for more information

5. Proposed activity(s)

5.1 Location of activity

Please attach a locality plan, map, photographs, diagrams and a site plan showing the location and layout of the proposed activity, and provide the following details of the location of the proposed activity site.

Description of premises location	The proposed site is located approximately 350m away from the nearest local street, Greenhaven Road. The site of the proposed development is within a small clearing on the northern side of the Anana Management Trail which runs east west through the RNP in the Grays Point area.
Site reference	Latitude: -34.055389° Longitude: 151.068760°
Local Government Area	Sutherland Shire Council
NSW State electorate	Miranda
Catchment	Hacking River
National Park	Royal National Park

5.2 Description of the proposed activity

Include a full and comprehensive description of the activity. All aspects of the proposed activity should be described. See section 3.2 of *Proponents Guidelines for the Review of Environmental Factors* for further guidance.

Description of the proposed activity – include pre-construction, construction, operation and remediation:

Pre-construction:
A risk assessment matrix has been established for the proposed works and outlines each stage of the proposed development (refer to **Appendix D)**.

Construction:
Vehicular access to the site will be available through the existing track off Greenhaven Road. No access issues associated with the proposed facility are expected. Additionally, the site offers enough space to park vehicles during both the construction and operational phases of the proposed telecommunications facility without impacting on thoroughfare of traffic.

During construction works a truck would be used to deliver equipment to the site and a small crane used to lift most of the equipment into place. The crane and truck would need to be parked at the site for approximately two days. During construction, there would be a temporary (i.e. up to three weeks) addition of a maximum of ten private vehicle trips per day associated with workmen assembling the equipment. Ample parking is available in the vicinity for these vehicles and these movements would not impact on local traffic. Traffic from this construction would only occur from the hours of 7.00am to 6:00pm.

The equipment shelter will be installed on bored piers; a crane would be used to lift the shelter into place and the shelter then bolted to the pier footings.

The monopole will also be installed into bored piers using a crane; the pole will be installed in 13-metre sections.

Security fencing will be installed around the perimeter of the compound when construction of the facility is completed. The type of fencing to be used for the compound will be agreed with the OEH to ensure it is appropriate for the free movement of all wild life species that are to be found in the vicinity of the site.

Electrical Power and Fibre will be brought to the site through underground conduits buried in the existing access track. The conduits would be laid in a 750mm deep x 300mm wide trench between the proposed site and Greenhaven Road. Once the conduits and pits had been installed, all surfaces would be restored to pre-construction conditions. It is proposed that the conduits would have space capacity for future fibre cables to avoid any requirement to open a trench along the access should it be required in the future.

Erosion and sediment control measures will be implemented in accordance with an approved sediment control plan and will remain in place until construction is completed. For additional information regarding the construction methods, please refer to **Appendix D**.

Operation:
The base station facility is unmanned and would require maintenance checks quarterly or as required in the event of an electricity failure or other similar event. Routine maintenance would involve one vehicle per visit per quarter for this purpose. Other maintenance would occur on an as needed basis but would not involve significant traffic generation.

Details for access to and maintenance of the proposed facility will be included in the licence.

Remediation: Should the site be decommissioned, the lease area would be cleared and cleaned of all associated equipment and the site allowed to naturally regenerate.

The size of the proposed activity footprint:

The proposed facility (lease compound) would be 10 metres by 6 metres; therefore, the total lease area would be 60m^2. The location identified for the proposed facility is in an existing clearing with sufficient space to accommodate the monopole structure and small equipment shelter.

The proposed facility would be located within a perimeter fence (60m^2). Beyond the perimeter fence line it is proposed to clear a 3m wide area. In combination it is a total area of **192m^2**.

Ancillary activities, such as advertising or other signage (including any temporary signs, banners or structures promoting an event or sponsorship arrangements), roads, infrastructure, bush fire hazard reduction:

The proposed facility would not increase the number of people living or working in the area, does not involve hazardous materials and has a minimal footprint. As mentioned, a buffering area of 3 metres is proposed around the perimeter for access and fire protection purposes.

Having regard to guidance provided by the NSW Rural Fire Service the buffer area of 3metres combined with the overall area of the proposed facility, within the perimeter fence, would provide an 'Asset Protection Zone'(APZ) from the tower/buildings/infrastructure associated with the tower of:

North – 6.0m
East – 4.9m
South – 6.0m (N.B. the existing access track (Anana Management Trail) provides further clearance on this side approximately 9.5m in total)
West – 5.7m

The facility is not manned and Telstra understands the risks associated with locating a facility within a bush fire hazard area.

The compound will have construction signs posted during construction to avoid persons wrongly entering the compound and to ensure safe work practices are adhered to. At completion of the works there will be Telstra standard radiation hazard and private property signs in place around the facility compound.

Proposed construction methods, materials and equipment:

Telstra Mobile Phone Tower and associated equipment:

- A security fence around compound that measures 6m x10m
- Panel antennas (3off) secured to a concrete monopole which is 35m high.
- A prefabricated shelter (2.2mx3.2mx2.99m high) to house the telecommunications equipment
- A prefabricated concrete monopole that is 35m high and 5.1m below ground.
- Feeder cables (6off) to carry the signal from the pole mounted antennas to the communications equipment – Feeders cables are run inside the pole to avoid unsightly attachments to the pole.

The construction period will be about 4-5 weeks from start to finish (assuming fine weather is experienced). All travel to site will be via Greenhaven road, Grays point.

To construct the works will require light weight vans to carry tools, a coring rig, a 60-80 tonne crane and cherry picker to install the new telecommunications tower.

- Flat top trucks to deliver the hut, monopole sections and materials
- The coring rig will be on site for 1 day
- Concrete delivery trucks for 1 day
- the crane will be on site for 5 days in the 5 week period
- Cherry picker will be on site for about 5-7 days in the 5 week period

All construction vehicles and plant will travel to sight via the access road weather permitting. If the road is very wet and soggy, vehicles will not be allowed to use the access track.

Receival, storage, and on site management for materials used in construction:

A drilling rig will be floated to site to make the core hole which is 1500mm dia. by 5000mm deep. All dirt will be recycled for fill where possible depending on the degree of rock encountered.

Two concrete trucks will deliver the required concrete to fill in the pier around the pole butt.

Flat top trucks will be used to deliver the hut, monopole sections, Antenna mounts and materials. A boggy truck will be used to remove the spoil from site and delivery to a waste management depot.

All materials except the pole sections will be stored within the Telstra compound. The pole sections will be delivered on the day when they will be installed to avoid long term site storage.

All rubbish will be removed from site on a daily basis.

Earthworks or site clearing including extent of vegetation to be removed:

The proposed phone tower and surrounding perimeter compound fence would be wholly contained within a small, existing clearing on the northern side of the Anana Management Trail.

A 3-metre cleared area around the perimeter fence would be needed for access and fire protection purposes. The 3 metre setback would require the removal of approximately 57.5 m^2 of native vegetation.

The Terrestrial Ecology Assessment (see Appendix A) concluded that because of the native vegetation's broad occurrence in the locality's formal conservation reserves and de facto reserves based on its landform and geological characteristics, the removal of 57.5 m^2 of this native vegetation is 'negligible' in this local context and would not be expected to significantly impact on its local occurrence or viability.

Environmental safeguards and mitigation measures:

The following mitigation measures would occur to minimise impacts to flora and fauna:

- A pre-construction search for the Threatened orchid *Genoplesium baueri* should be undertaken during its known flowering period (December—March) in an attempt to confirm or discount its presence on the site. Results from an online Wildlife Atlas search show two (2) records for the species less than 500 m from the study area;
- Slashing of vegetation for the 3 metre setback from the perimeter fence would be strictly controlled so that no vegetation over and above what is required for the proposal is removed. The clearing Contractor would be inducted and made aware of the clearing limitations. Temporary plastic mesh fencing or a suitable alternative would be established to delineate the clearing zone for the clearing Contractor;
- Vegetation would be felled away from adjoining (retained) vegetation and towards the tower footprint;
- Felled trees would be relocated into adjoining low woodland habitat for reuse as terrestrial ground debris. Trees are considered to be small enough for two (2) personnel to manually lift without the need for machinery;
- Given the absence of hollows and the small area of vegetation proposed for removal (57.5 m^2), no ecological clearing supervision, pre clearing surveys or compensatory nest box program is deemed warranted;
- It is likely that the setback zone will need to be maintained by slashing on a periodic basis. Maintenance slashing would similarly be restricted to the defined setback zone with no disturbance to the adjoining (retained) vegetation; and
- To minimise the introduction of pathogens to the site, Telstra, Aurecon and its Contractors would adopt personal and vehicle hygiene practices during all pre construction, construction and post construction maintenance activities at the site, including the use of a bleach/water solution on all vehicles, tyres and plant equipment prior to entering the site.

Sustainability measures – including choice of materials (such as recycled content) and water and energy efficiency

The site when up and running is very energy efficient and has nil water usage due to the following features:

- The ground around the compound is cleared from ground vegetation and shrubs as noted on the drawings. The cleared area is finished with 100mm thick layer of gravel on weed matt to control weeds and eliminate the use of herbicide to control weed growth.
- No new plants will be added around the compound which eliminate water usage and reduce the risk from fires propagating from the hut in the low probability event electrical equipment may catch fire.
- The shelter is prefabricated from refrigeration type panels to reduce solar heat gains and thereby minimise air conditioning loads and electrical consumption
- The temperature inside the hut is controlled by three stages of cooling to reduce electrical energy consumption:
    - Stage one is by natural ventilation utilising strategically located vents in the shelter
    - Stage two by the use of high efficiency DC fans when the internal hut temperature raises to between 25 and 28^{O}C and
    - Stage three with cooling only air conditioning unit when the internal hut temperature exceeds 28^{O}C.
- The use of pre-galvanised steel and concrete will minimise onsite maintenance and eliminate the need for painting thereby removing the risk of any chemical contamination from paint spills.
- The pole is constructed from steel re-enforced concrete to give long service life and low maintenance which further eliminates the need to bring heavy vehicles to site after the pole is installed.
- The feeders that carry the signal from the antennas to the communication shelter are made from recycled and raw copper and run inside the pole to improve the aesthetics.
- The monopole pole, shelter and equipment are all constructed from materials which can be recycled at the end of their service life.
- The hut is fitted with batteries that provide 8-hours of back up in the event of mains failure which avoids the need to install standby diesel generators and diesel tanks on site. Batteries are more efficient over their lifecycle and will be recycled at the end of their economic life.
- During construction temporary amenities will be installed on site for use by construction works. These will be removed once the site works are complete.

Please refer to **Appendix D** for the full construction methodology.

Construction timetable and staging, hours of operation:

The duration of construction period will take about 4-5 weeks from start to finish (assuming fine weather is experienced). All travel to site will be via Greenhaven road, Grays point.

To construct the works will require light weight vans to carry tools, a coring rig, a 60-80 tonne crane and cherry picker to install the new telecommunications tower:

- Flat top trucks to deliver the hut, monopole sections and materials
- The coring rig will be on site for 1 day
- Concrete delivery trucks for 1 day
- the crane will be on site for 5 days in the 5 week period
- Cherry picker will be on site for about 5-7 days in the 5 week period

All construction vehicles and plant will travel to sight via the access road weather permitting. If the road is very wet and soggy, vehicles will not be allowed to use the access track.

The proposed working hours during the construction period will be from 7:00AM to 5:00 PM Monday to Saturday.

Please refer to **Appendix D** for the full construction methodology.

Note: if the activity involves building or infrastructure works, it may require certification to Building Code of Australia or Australian Standards prior to commencement. Further information on the types of projects requiring certification, and how to obtain certification, is contained the OEH *Construction Assessment Procedure* at: **http://www.environment.nsw.gov.au/protectedareas/developmntadjoiningdecc.htm**

5.3 Objectives of the proposal

Clearly state the objectives of the proposal. See section 3.2 of *Proponents Guidelines for the Review of Environmental Factors* for further guidance.

Provide details of objectives of the proposal	Telstra regularly undertakes detailed assessments of the performance and coverage of its digital mobile telephone and broadband internet networks to ensure its systems are reliable and achieving the required objectives. Reference to customer demand also provides an indication of areas of poor performance or where coverage does not exist. During these assessments, Telstra determined that the current level of service in Grays Point is inadequate and, in order to provide an acceptable quality of depth of coverage in the area - in particular for wireless data applications - and to ensure coverage within the Park (especially for use by emergency services), a site at Grays Point is essential. AUDLEY WEIR Telstra simulated the proposed installation by lifting an Omni antenna with the use of a Truck boom lift to the equivalent height as defined in the design submitted to NPWS. A vehicle equipped with radio testing monitors was mobilised throughout Sir Bertram Stevens Drive, Lady Carrington Drive, Audley Road & Riverside Road to ascertain whether the coverage signal from the proposed base station at Grays Point would extend into the tourist attraction identified as Audley Weir, in particular the location of the tourist centre buildings. The drive testing revealed that the proposed coverage extended into the areas described above resulting in significantly improved network access to the Telstra network. GRAYS POINT A similar drive analysis was conducted throughout the suburb of Grays Point which is the primary customer target area for Telstra. The results of the search revealed that the proposed base station would provide the desired coverage. To illustrate this, attached at Appendix E is an aerial photograph indicating the location of existing Telstra base stations in the area and attached as Appendix F is an image which indicates locations (tested along accessible roads and shown in green) which would experience enhanced coverage following the installation of the new base station.

6. Reasons for the activity and consideration of alternatives

Section 3.2.1 of *Proponents Guidelines for the Review of Environmental Factors* provides further guidance

Reasons for activity:

Telstra has identified the need to improve digital mobile telephone and mobile broadband internet coverage within the RNP and within the area of Grays Point. The need for improved coverage is driven by the number of users on the mobile phone and data networks and also by the number of people now using devices such as smart phones and handheld devices which work by accessing the Telstra mobile network. The proposed telecommunications facility has been designed to provide network coverage in an area where coverage is currently inadequate and is to be an integral element of the digital mobile telephone network that Telstra is establishing in New South Wales (NSW) and throughout Australia. Telstra radio frequency engineers, planning, engineering and property consultants have undertaken intensive investigations of this area. Following these assessments, Telstra has determined that the best location to install a new mobile phone base station is adjacent to an existing graded vehicular access road, off Greenhaven Road in the Royal National Park at Grays Point

Alternatives: Telstra is required to carefully consider many factors before deciding on the location and the design of its mobile phone base stations. These factors include service objectives (radio coverage requirements), physical characteristics of the site – such as height and terrain, ability to connect with the rest of the network, planning constraints such as zonings, co-location opportunities, minimising public exposure to EME, cost factors, the ability to obtain a suitable lease, proximity to community sensitive locations and minimising the visual impact on the existing environment.

The Australian Communications and Media Authority (ACMA) require Telstra, and the other carriers, to balance these factors when deciding on the placement of a site.

In looking at the selection process for a site it is also important to have regard to the context of the network and what is needed to meet the radiofrequency engineering coverage requirements of the site. In each case the location or the 'search area' of a new site is defined by its relationship to existing cells. Mobile coverage fails if the new site is either too far away from the nearest surrounding sites (causing a 'coverage gap') or too close to surrounding sites (causing interference within the network). In this instance the nearest Telstra sites are:

- Gymea Bay, Gymea Bay Road
- Sutherland, Sutherland Exchange Auburn Street
- Sutherland, Stapleton Avenue
- Lotus, Rawson Avenue Cycle Circuit
- Yarrawarrah, off Princes Highway

These sites are depicted in the attached map (refer to **Appendix E**). The purpose of this new site at Grays Point is to fill the gap, not met by these neighbouring sites and to provide a level of coverage not currently existing in the RNP or Grays Point itself. The search area is defined by these surrounding sites. It is within this framework that the search was conducted. As part of the assessment and search process Telstra needs to also take into account the basic zoning and land use attributes as well as constraints in terms of the ability to secure tenure. In this case within the 'search area' a significant proportion of the land is administered by the Office of Environment and Heritage (OEH). The predominant zoning of the area is 'National Park' and there are limited opportunities for a new site other than OEH land. A commentary on alternatives site opportunities is set out below.

An investigation of surrounding land uses was undertaken as part of the site selection process and it was revealed that there are two (2) sites that can be considered as community sensitive and located within 500 metres of the proposed site:

- Grays Point Public School
- Grays Point Activity Centre (located within the school grounds)

Comment: these locations are included in the EME Report as community sensitive locations (refer to **Appendix G**).

All co-location opportunities have also been investigated as part of the site selection process, as required by the ACIF Code and the *Telecommunications Code of Practice 1997*. All potential alternative base station options identified in preliminary investigations have been fully investigated.

A commentary on the options investigated is provided below (refer to **Appendix H** for a map denoting the locations of the alternatives considered):

- **Existing Lighting Pole, Grays Point Oval Angle Road (candidate E) –** this site was investigated for both a co-location opportunity on existing infrastructure and as a replacement option of existing infrastructure. Telstra considered the opportunities to implement either of these options utilising either one (1) or two (2) of the existing lighting poles in the park.

  The oval shares a common boundary with Grays Point Public School, a community sensitive item, and is regularly used by the school for sporting activities. Significant community opposition was previously encountered regarding the use of the oval for telecommunications infrastructure especially regarding the perceived health issues with respect to electro-magnetic emissions (EME).

- **Grays Point Bush Fire Brigade, Inglewood Road (candidate F) –** this site was investigated for a co-location opportunity as either a Low Impact installation or a replacement of the existing hose-drying pole under a DA.

  The property is a very steep parcel of land densely vegetated by tall mature trees. Telstra requires a direct line-of-sight to the area west of Inglewood Street in order to meet its radiofrequency coverage objectives. The steepness of this block combined with the tree heights does not permit this line-of-sight and therefore, no viable option at this site is available.

  Discussions with Sutherland Shire Council and Rural Fire Services (RFS) also confirmed that neither Sutherland Council nor RFS would support a telecommunications proposal at this location.

- **Single storey commercial buildings & local shopping centre, Grays Point Road (candidate G)** – these commercial buildings are located in a central area of Grays Point and were investigated for a Low Impact opportunity on the existing building roof tops.

Comment: These buildings are only single storey in height surrounded by tall mature trees. It is not possible to locate telecommunications infrastructure on the existing roof tops and obtain signal clearance above the tops of these trees; therefore, the radiofrequency objectives cannot be met by using any of these commercial buildings.

A local child care centre is also located at the northern end of these commercial premises; significant community opposition is anticipated if a telecommunications facility is installed in this immediate area.

Alternative locations within the Royal National Park (candidates A - D) – the existing graded access roads within the Royal National Park in the vicinity of Grays Point were all considered as viable options from a radiofrequency perspective for a new freestanding facility.

Consultation with OEH was undertaken to determine which, if any, of these options would best meet the Royal National Park objectives under the NP&W Act 1974. This consultation included a consideration of the management plans for the Royal National Park as well as the minimisation of the environmental impact of the proposal. The discussions resulted in the agreement between the representative of the Royal National Park and the Telstra representative that the best option for the facility is the one proposed in this REF.

Summary: After extensive investigation with Telstra Radiofrequency Engineers, Sutherland Council, RFS and the community and in consideration of Telstra's radiofrequency coverage objectives, the above options were discounted.

Justification for preferred option:

Where possible Telstra seeks to locate telecommunications facilities within industrial and commercial areas. In the instances when industrial or commercial lots are not available the most appropriate location must be identified and negative impacts minimised where possible. The areas of Grays Point and Audley are predominately made up of residential properties or the Park itself. The proposed site was chosen as it offers opportunity to locate in an area that has previously been cleared and has existing vehicular access; significantly reducing the need to clear vegetation. Additionally, the site offers a naturally elevated position, enabling the facility to be reasonable in height whilst still servicing the lower lying areas.

AUDLEY WEIR

Telstra simulated the proposed installation by lifting an Omni antenna with the use of a Truck boom lift to the equivalent height as defined in the design submitted to NPWS. A vehicle equipped with radio testing monitors was mobilised throughout Sir Bertram Stevens Drive, Lady Carrington Drive, Audley Road & Riverside Road to ascertain whether the coverage signal from the proposed base station at Grays Point would extend into the tourist attraction identified as Audley Weir, in particular the location of the tourist centre buildings. The drive testing revealed that the proposed coverage extended into the areas described above resulting in significantly improved network access to the Telstra network.

GRAYS POINT

A similar drive analysis was conducted throughout the suburb of Grays Point which is the primary customer target area for Telstra. The results of the search revealed that the proposed base station would provide the desired coverage.

Special note: for visitor use, tourism and other proposals requiring a lease or licence under s.151 NPW Act

Proposals seeking a lease or licence under s.151 NPW Act must address the site suitability requirements of the sustainability assessment criteria adopted by the Director General of OEH (**see below**). For further information on completing the assessment of site suitability, refer to the criteria and supporting guidelines at: http://www.environment.nsw.gov.au/protectedareas/developmntadjoiningdecc.htm

Site suitability (lease or licence proposals under s.151 NPW Act)

This section is NA as Telstra is seeking a lease or licence under **s153D** *Leases, licences and easements for broadcasting or telecommunications facilities*

Site character	N/A
Landscape context	N/A
Application of site suitability matrix	N/A
Strategic site assessment (if required by the matrix) *Attach any separate assessment report*	N/A

7. Description of the existing environment

Include a comprehensive description of the existing environment and surrounds that will be, or are likely to be, affected by the proposed activity. Sensitive areas of the environment should be identified in this section.

Section 3.4 of *Proponents Guidelines for the Review of Environmental Factors* provides further guidance.

Description of the existing environment:

The site of the proposed development is within a small clearing on the northern side of the Anana Management Trail running through the RNP in the Grays Point area (refer to **Appendix I**). The property is located in an area zoned as *8(a) National Park* under Sutherland Shire Local Environmental Plan (SSLEP) 2006. (refer to **Appendix J)**

This area of the Park is typical of the Park as a whole – with extensive areas of undeveloped native bushland interspersed with wide unsealed but graded roads which allow access for service and emergency vehicles and provide walking paths through some areas of the Park.

The proposed site is located approximately 350m from the nearest local street, Greenhaven Road. Grays Point Public School is located in Angle Road, approximately 400m from the proposed site.

Meteorological data:

At Lucas Heights station: mean annual temperature range = $12^0 – 22^0$
mean annual rainfall = 1019 mm/yr
prevailing wind direction
jan-may = easterly
jun-sep = westerly
oct-dec = easterly

At Audley station: mean annual temperature = 21.4^0
mean annual rainfall = 1098 mm/yr

Topography:

The entire Park consists of a series of ridges and valleys with steep cliffs running down to a major river (Hacking River) which runs through the Park. The proposed site is located on a ridge with a height of approx. 90m AHD. The surrounding area is highly undulating with areas ranging from 10m to 130m AHD across a 2.5km distance.

Surrounding land uses:

An investigation of surrounding land uses was undertaken as part of the site selection process and two (2) sites that can be considered as community sensitive are located within 500 metres of the proposed site:

- Grays Point Public School
- Grays Point Activity Centre (located within the school grounds)

These locations were included in the EME Report as community sensitive locations.

The surrounding area is zoned for and comprised of residential housing.

For specific detail regarding the surrounding flora and fauna refer to The Terrestrial Ecology Assessment, prepared by Orogen, attached as **Appendix A.**

Geology/Geomorphology:

The geology of the site is the Hawkesbury Sandstone of Triassic in age, comprising a medium to coarse grained quartz sandstone, with minor shale lenses, derived from braided alluvial or channel fill deposits

Soil types and properties:

The soil is classified as type (ha) Hawkesbury, typically shallow (<50cm) discontinuous lithosols/siliceous sands associated with bedrock. Possible localised yellow and red podzolic soils associated with the shale lenses in the underlying rock. Extreme soil erosion hazard, rock fall hazard on steep slopes. Stony highly permeable soil with low fertility.

Waterways including wild and scenic rivers:

The proposed site location is approximately 850m to the north of the closest waterway – no adverse impact on this water system is expected. The only hardstand runoff would be from the roof of the small equipment shelter; this runoff would be allowed to percolate naturally to the water table.

Catchment values:

The facility would be unmanned; there would be minimal impact upon the catchment as the only hardstand runoff would be from the roof top of the small equipment shelter – which would be allowed to percolate naturally to the water table.

Coastal risk areas:

The proposed facility would be located approximately 6km to the west of the closest coast line, therefore no impact would occur.

Wetland communities including SEPP 14 wetlands:

This policy applies to local government areas outside the Sydney metropolitan area that fronts the Pacific Ocean and is, therefore, not applicable.

Flora (including flora of conservation significance):

No threatened species, populations and ecological communities of Flora occur in the subject site.

Fauna (including fauna of conservation significance):

No threatened species, populations and ecological communities of Fauna occur in the subject site.

Ecological communities (endangered ecological communities and regionally significant communities):

The native vegetation identified in the study area is not considered to be comparable to any TSC or EPBC listed endangered ecological communities or regionally significant communities.

No rare or Threatened plants were recorded in the study area during the survey.

For further information please refer to the Terrestrial Ecology Assessment, prepared by Orogen, attached as Appendix A.

Critical habitat declared under the TSC Act:

The site does not form part of a Critical habitat as declared under the TSC Act.

For further information please refer to the Terrestrial Ecology Assessment, prepared by Orogen, attached as Appendix A.

SEPP 26 littoral rainforest (or equivalent):

This policy applies to local government areas outside the Sydney metropolitan area that front the Pacific Ocean (the same area to which SEPP 14 applies) and is therefore, not applicable

SEPP 44 koala habitat:

This SEPP does not apply to land dedicated or reserved under the National Parks & Wildlife Act 1974.

Wilderness (either nominated or declared):

The *Wilderness Act 1987* provides for the permanent protection and proper management of wilderness areas.

The proposal is not located within the boundaries of any area defined under this Act; therefore, the provisions of this Act do not apply to this proposal.

Aboriginal cultural heritage:

The proposed development is unlikely to have an impact on Aboriginal cultural heritage.

As part of the site selection process, a heritage and conservation register check has been undertaken (including listings on the Australian Heritage Database, the State Heritage Register and local environmental registers). No item of Aboriginal or archaeological significance was identified in the area of the proposed development or in the immediate surrounds.

Attached as Appendix K are the reported results of the search performed using the Aboriginal Heritage Information Management System (AHIMS).

No Aboriginal or archaeological impact is anticipated because of this development; however, should any item of Aboriginal or archaeological importance be discovered during the course of construction, work would cease immediately and all appropriate authorities notified. Work would not resume until all clearances have been received from these authorities.

National/state/local natural or cultural heritage values:

National – Section 60 of the *Heritage Act 1977* states that alterations to or demolition of an item listed on the State Heritage Register require the preparation of a Section 60 application.

The proposal does not impact upon any item of heritage significance listed on the State Heritage Register.

Vegetation of cultural landscape value:
(e.g. gardens and settings, introduced exotic species, or evidence of broader remnant land uses)

No existing cultivated vegetation settings are evident at the site and no such settings would be installed at the site. No exotic species are to be introduced as part of the proposed installation. The surrounding area is comprised of undisturbed native bushland with traversing vehicular access tracks; no broader remnant land uses were observed.

Other cultural heritage values:

No other cultural heritage values were identified.

Recreation values:

The proposed location of the telecommunications facility is not currently used for recreational purposes as it is located adjacent to a vehicular access track. The access track is used for both pedestrian and vehicle access and the facility would not impede any such movement.

Scenic and visually significant areas:

The facility would be located within a small clearing on the northern side of the Anana Management Trail on a piece of land that has minimal vegetation coverage. This site was chosen because of this lack of existing vegetation and also the easy vehicular access.

Telstra is aware of the environmental significance of the Park and is respectful of the need to have as little impact upon the flora and fauna as possible. The facility is designed to allow freedom of movement around the structure, thus not impeding the movements of local wildlife. Minimal vegetation is to be removed as a result of this development, and there would therefore, be limited impact on local flora. Minor disturbance to the soil would occur during construction of the footings; however, this would be of a temporary nature and the area would quickly recover once construction is completed.

Additional vegetation coverage may be planted around the compound, if required, in order to further integrate the facility into the existing natural environment.

The facility would not have a major impact on the visual amenity when viewed from areas located outside the Royal National Park. A cherry picker was temporarily installed at the site and erected to a height of 40m. Investigations were undertaken regarding the visual impact of this proposal when viewed from various locations around Grays Point locale.

Photographs were taken from various vantage points around the area and photomontages prepared showing how the proposal would appear from these vantage points. The cherry picker was not visible from many of the vantage points so montages were only prepared for those locations where the facility was considered to be most visible; however, photographs from locations where the cherry picker was not visible are also supplied for review (refer to **Appendix C**).

The investigations confirmed the following:

- **Locations along existing access roads within the Royal National Park** – the cherry picker was visible from various locations within the Park with those nearer the proposed site being the most visible; however, due to the undulating terrain and serpentine nature of the access roads, the cherry picker was not visible from most locations (excepting the easterly direction) which were greater than 60m away. The facility would therefore, have only minimal impact upon the visual amenity when viewed from these locations.

- **Local shopping centre** – the cherry picker was not visible from this location or its immediate surrounds and therefore, the proposal would not have any impact upon the visual amenity when viewed from this location.

- **Southern end of Angle Road** – the cherry picker was only visible intermittently above the tree tops. The dense vegetation coverage and heights of the trees made it difficult to distinguish the cherry picker when viewed from several vantage points at this location.

- **Arcadia Avenue, Gymea Bay** – given the sensitive environmental nature of the Royal National Park and possible visual impacts of the proposal when viewed from the surrounding ridge tops, investigations were undertaken and photographs taken from the suburb on the nearby easterly ridge top of Gymea Bay. The cherry picker was visible above the tree tops from Arcadia Ave but only as a distant slimline element; no detail of the structure was distinguishable from this distance and it would not present as a dominant visual element within the landscape. The cherry picker was only visible from this position along Arcadia Ave due to the undulating and serpentine nature of the terrain; it was not possible to sight the cherry picker from any other location along Arcadia Ave; therefore, the proposal would not have a significant visual impact when viewed from this aspect.

- **Grays Point Oval, Angle Road** – the oval shares a common boundary with the Royal National Park at this location. The cherry picker was visible behind the oval as a slimline pole above the tops of the trees; however, the pole *appeared* significantly lower in height than the surrounding trees in the Royal National Park as well as those trees immediately surrounding the oval. The oval also has several existing lighting poles installed to allow night-time use of the facilities; the monopole would be sympathetic with these existing built forms and indeed, would have a lesser visual impact – *appearing* to be lower in height than these poles. The proposal would not, therefore, have a significant visual impact when viewed from this aspect (view 1, **Appendix C**).

- **Grays Point Public School, Angle Road** – the school also shares a common boundary with the Royal National Park at this location. The cherry picker was visible behind the school as a vertical element above the tops of the trees; however, the pole also appeared significantly lower in height than many of the surrounding trees in the Royal National Park as well as those trees immediately surrounding the school. The monopole would not have a significant visual impact when viewed from this aspect (view 2, **Appendix C**).

- **Corner of Grays Point & Serpentine Roads** – the cherry picker was visible but, when viewed from this aspect, the facility is similar in appearance to the existing infrastructure (power poles) in the area and would integrate well into the natural and built visual environment (view 3, **Appendix C**).

Education and scientific values:

Enhanced connection to the mobile phone network would allow for a more reliable connection to the wireless internet, thereby permitting greater opportunity for collaboration on educational projects (particularly during school excursions)

Interests of external stakeholders (eg adjoining landowners, leaseholders):

The only existing adjoining landowner is that of Grays Point Public School. Communication with the School has already been initiated by Telstra and is ongoing.
All relevant stakeholders have been identified and would be contacted during the advertising period required by NP&W Service (refer to **4 Consultation**)

Matter of National Environmental Significance under the EPBC Act:

Environment Protection and Biodiversity Conservation Act 1999
The primary legislation at the Commonwealth level is the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Part 3 of the EPBC Act requires approval from the Commonwealth Minister for Sustainability, Environment, Water, Population and Communities if a development is likely to have, or will have, a significant effect on a matter of National Environmental Significance (NES).

For the purposes of the EPBC Act, matters of NES are defined as:
- world heritage properties;
- national heritage places;
- Ramsar wetlands;
- nationally threatened species and ecological communities;
- migratory species;
- commonwealth marine areas; and
- nuclear actions

There are no matters of national environmental significance that will be affected as a result of this proposal. No commonwealth land will be affected, either directly or indirectly, as a result of this proposal (refer to **3.1 Commonwealth legislation** for further discussion).

8. Impact assessment

This part of the REF provides an analysis of all possible impacts from the proposed activity and a description of any proposed mitigation measures. Section 3.7 of *Proponents Guidelines for the Review of Environmental Factors* provides further guidance on impact assessment and mitigation measures.

5.15 Physical and chemical impacts during construction and operation

Section 3.8 of *Proponents Guidelines for the Review of Environmental Factors* provides further guidance

	Applicable?*	**Impact level** (negligible, low, medium or high; negative or positive; or N/A)	**Reasons** (describe the type, nature and extent of impact, taking into account the receiving environment & proposed safeguards which will limit the impact)	**Safeguards/Mitigation Measures**
1. Is the proposal likely to impact on soil quality or land stability?	☒	Negligible	The facility would be constructed in accordance with BCA standards and would not have any impact upon the stability of the land. The compound would be covered by loose gravel once the monopole is installed thereby, minimising any ongoing damage to the soil quality. Minor soil disturbance is anticipated during construction; however, the land would regenerate quickly once construction is completed. Electrical Power and Fibre will be brought to the site through underground conduits buried in the existing access track. The conduits would be laid in a 750mm deep x 300mm wide trench between the proposed site and Greenhaven Road. Once the conduits and pits had been installed, all surfaces would be restored to pre-construction conditions. It is proposed that the conduits would have space capacity for future fibre cables to avoid any requirement to open a trench along the access should it be required in the future.	Erosion and sediment control measures will be implemented in accordance with an approved sediment control plan and will remain in place until construction is completed. For additional information regarding the construction methods, please refer to Appendix C.
2. Is the activity likely to affect a waterbody, watercourse, wetland or natural drainage system?	☐	N/A	There are no existing water bodies or watercourses in the near vicinity of the site. The only hardstand runoff would be from the roof of the small equipment shelter; this runoff would be contained within the boundaries of the compound and allowed to percolate naturally to the water table.	
3. Is the activity likely to change flood or tidal	☐	N/A	N/A	

5.15 Physical and chemical impacts during construction and operation Section 3.8 of *Proponents Guidelines for the Review of Environmental Factors* provides further guidance				
	Applicable?*	**Impact level** (negligible, low, medium or high; negative or positive; or N/A)	**Reasons** (describe the type, nature and extent of impact, taking into account the receiving environment & proposed safeguards which will limit the impact)	**Safeguards/Mitigation Measures**
regimes, or be affected by flooding?				
4. Is the activity likely to affect coastal processes and coastal hazards, including those projected by climate change (e.g. sea level rise)?	☐	N/A	N/A	
5. Does the activity involve the use, storage, or transport of hazardous substances or the use or generation of chemicals, which may build up residues in the environment?	☐	N/A	N/A	
6. Does the activity involve the generation or disposal of gaseous, liquid or solid wastes or emissions?	☒	Negligible	A drilling rig will be floated to site to make the core hole which is 1500mm dia. by 5000mm deep. An excavator will be used to make the 750mm deep x 300mm wide trench between the proposed site and Greenhaven Road for the fibre and electrical conduit. All dirt will be recycled for fill where possible depending on the degree of rock encountered.	A boggy truck will be used to remove any remaining spoil from site and delivery to a waste management depot. All rubbish will be removed from site on a daily basis.
7. Will the activity involve the emission of dust, odours, noise, vibration or radiation in the proximity of residential or urban areas or other sensitive	☒	Negligible	Minor emissions of dust would be generated during construction of the facility; however, this would be of short duration as construction would take approx. 4-5 weeks. Once construction is completed, the site would not generate any dust, odours or vibrations. The small air-conditioning unit attached to the shelter would generate the same levels of noise as that of a small domestic air-	

5.15 Physical and chemical impacts during construction and operation

Section 3.8 of *Proponents Guidelines for the Review of Environmental Factors* provides further guidance

	Applicable?*	**Impact level** (negligible, low, medium or high; negative or positive; or N/A)	**Reasons** (describe the type, nature and extent of impact, taking into account the receiving environment & proposed safeguards which will limit the impact)	**Safeguards/Mitigation Measures**
locations?			conditioner. The facility would be located over 480 metres from the nearest residence; therefore, minimal impact is anticipated upon any urban area. The local public school would also be located more than 400 metres from the facility and would not be adversely affected by the proposal. Grays Point Public School has been identified as a sensitive location for the purposes of the generation of the EME Report (refer to Appendix D).	

***** If yes, all columns need to be completed. If no, write 'N/A' in the second and third columns

5.15 Biological impacts during construction and operation

Section 3.9 of *Proponents Guidelines for the Review of Environmental Factors* provides further guidance

	Applicable?*	**Likely impact** (negligible, low, medium or high negative or positive; or N/A)	**Reasons** (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	**Safeguards/Mitigation Measures**
1. Is any vegetation to be cleared or modified? (includes vegetation of conservation significance or cultural landscape value)	☒	Low	57.5m^2 of native vegetation is to be removed at around the site location to provide an Asset Protection Zone in the event if a bush fire. The location for the proposed base station was chosen because it requires the minimal removal of vegetation.	Clearing of vegetation for the 3 m setback from the perimeter fence should be kept to an absolute minimum so that no vegetation over and above what is required for the proposal is removed. The clearing Contractor should be inducted by Aurecon personnel and made aware of the clearing limitations. Temporary plastic mesh fencing or a suitable alternative should be established to delineate the clearing zone for the clearing Contractor;

5.15 Biological impacts during construction and operation

Section 3.9 of *Proponents Guidelines for the Review of Environmental Factors* provides further guidance

	Applicable?*	**Likely impact** (negligible, low, medium or high negative or positive; or N/A)	**Reasons** (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	**Safeguards/Mitigation Measures**
				Vegetation should be felled away from adjoining (retained) vegetation and towards the tower footprint; Felled trees should be relocated into adjoining low woodland habitat for reuse as terrestrial ground debris. Trees are considered to be small enough for two (2) personnel to manually lift without the need for machinery; It is likely that the setback zone will need to be maintained by slashing on a periodic basis. Maintenance slashing should similarly be restricted to the defined setback zone with no disturbance to the adjoining (retained) vegetation. Slashing should be undertaken by a whipper snipper rather than a ride on commercial slasher; and
2. Is the activity likely to have a significant effect on threatened flora species, populations, or their habitats, or critical habitat? [refer to threatened species assessment of significance (7-part test)]	☒	Negligible	No rare or threatened species were identified at the site location (in the study area) during the survey. The proposed development is not expected to significantly impact on the local occurrence or viability of the flora species identified at the site location. For further information please refer to Appendix A - Terrestrial Ecology Assessment, prepared by Orogen.	A pre-construction search for the Threatened orchid Genoplesium baueri should be undertaken during its known flowering period (December—March) in an attempt to confirm or discount its presence on the site. Results from an online Wildlife Atlas search show two (2) records for the species less than 500 m from the study area of the Terrestrial Ecology Assessment.
3. Does the activity have the potential to endanger, displace or disturb fauna (including fauna of	☒	Negligible	Minimal disturbance to local environmental communities is anticipated at the site location for a period of 4-5 weeks (refer to Appendix A for further discussion).	The type of fencing to be used for the compound will be agreed with the OEH to ensure it is appropriate for the free movement of all wild life species that are to be found in the vicinity of the site.

5.15 Biological impacts during construction and operation

Section 3.9 of *Proponents Guidelines for the Review of Environmental Factors* provides further guidance

	Applicable?*	**Likely impact** (negligible, low, medium or high negative or positive; or N/A)	**Reasons** (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	**Safeguards/Mitigation Measures**
conservation significance) or create a barrier to their movement?			The proposed facility is designed to allow freedom of movement around the compound.	
4. Is the activity likely to impact on an ecological community of conservation significance?	☐	N/A	No ecological communities of conservation significance were identified at the site location (refer to Appendix A for further discussion). The proposed clearing will therefore have no effect on any ecological communities of conservation significance.	N/A
5. Is the activity likely to have a significant effect on an endangered ecological community or its habitat? (refer to threatened species assessment of significance [7-part test])	☐	N/A	No endangered ecological communities or habitats were identified at the site location (refer to Appendix A for further discussion). The proposed clearing will therefore have no effect on any endangered ecological communities or habitats.	N/A
6. Is the activity likely to cause a threat to the biological diversity or ecological integrity of an ecological community?	☒	Negligible	The Terrestrial Ecology Assessment concluded that the proposed development is unlikely to result in a significant impact on any threatened species or populations of ecological communities.	Where possible felled trees should be relocated into adjoining low woodland habitat for reuse as terrestrial ground debris. Trees are considered to be small enough for two (2) personnel to manually lift without the need for machinery;

5.15 Biological impacts during construction and operation

Section 3.9 of *Proponents Guidelines for the Review of Environmental Factors* provides further guidance

	Applicable?*	**Likely impact** (negligible, low, medium or high negative or positive; or N/A)	**Reasons** (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	**Safeguards/Mitigation Measures**
7. Is the activity likely to introduce noxious weeds, vermin, feral species or genetically modified organisms into an area?	☒	Negligible	The activity is not likely to introduce noxious weeds, vermin, feral species or genetically modified organisms into an area.	To minimise the introduction of pathogens to the site, Telstra, Aurecon and its Contractors should adopt personal and vehicle hygiene practices during all pre construction, construction and post construction maintenance activities at the site, including the use of a bleach/water solution on all vehicles, tyres and plant equipment prior to entering the site. All rubbish will be removed from site on a daily basis. The compound will be surfaced with a 100mm thick gravel layer to provide natural water drainage, prevent weed growth and provide a safe all weather access around the telecommunications equipment.
8. Is the activity likely to affect critical habitat?	☐	N/A	No critical habitats were identified at the site location (refer to Appendix A for further discussion)	N/A
9. Is the activity consistent with any applicable recovery plans or threat abatement plans?	☐	N/A	A reviewed of the list of recovery plans and threat abatement plans available on the OEH website confirms that there are no applicable recovery plans or threat abatement plans.	N/A

5.15 Biological impacts during construction and operation

Section 3.9 of *Proponents Guidelines for the Review of Environmental Factors* provides further guidance

	Applicable?*	**Likely impact** (negligible, low, medium or high negative or positive; or N/A)	**Reasons** (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	**Safeguards/Mitigation Measures**
10. Is the activity likely to affect any joint management agreement entered into under the TSC Act?	☐	N/A	The Chief Exective of the Office of Environment and Heritage (OEH) may enter into a joint management agreement (JMA) under s. 121 of the Threatened Species Conservation Act 1995 with another public authority. The purpose of a joint management agreement is to manage, regulate or restrict an action that is jeopardising the survival of a threatened species, population or ecological community. The proposed development is not likely to affect any joint management agreement entered into under the TSC Act.	N/A

***** If yes, all columns need to be completed. If no, write 'N/A' in the second and third columns

5.15 Community impacts during construction and operation

Section 3.10 of *Proponents Guidelines for the Review of Environmental Factors* provides further guidance

	Applicable?*	**Likely impact** (negligible, low, medium or high negative or positive; or N/A)	**Reasons** (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	**Safeguards/Mitigation Measures**
1. Is the activity likely to affect community services or infrastructure?	☒	Positive	The introduction of mobile phone reception in the area will have a positive impact with regard to community services and infrastructure .i.e. the provision of better coverage for emergency services; Education – the potential to provide information via electronic media to visitors in the park	
2. Does the activity affect sites of importance to local or broader community for their recreational or other values or access to these sites?	☒	Negligible	The Ananan Management Trail is used for recreation by runners and walkers – and for access by the RNP personnel - during the construction period of 4-5 weeks there will be a minimal amount of disruption. The trial will always remain passable.	The compound will have construction signs posted during construction to avoid persons wrongly entering the compound and to ensure safe work practices are adhered to. At completion of the works there will be Telstra standard radiation Hazard and private property sign around the compound.
3. Is the activity likely to affect economic factors, including employment, industry and property value?	☒	Positive	The introduction of mobile phone reception in the area will have a positive impact with regard to the possible introduction of interactive learning tools which could be made available within the park. This type of new service/feature may increase the number of visitors to the park. Prospective visitors will feel more safe in the knowledge that should there be an accident they will be able to contact emergency services – prospective visitors who may have been put off before will be more willing to visit increasing visitor numbers to the park.	
4. Is the activity likely to have an impact on the safety of the community?	☒	Positive	The introduction of mobile phone reception in the area will have a positive impact providing better coverage for emergency services in the event of an accident.	

5.15 Community impacts during construction and operation

Section 3.10 of *Proponents Guidelines for the Review of Environmental Factors* provides further guidance

	Applicable?*	**Likely impact** (negligible, low, medium or high negative or positive; or N/A)	**Reasons** (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	**Safeguards/Mitigation Measures**
5. Is the activity likely to cause a bushfire risk?	☐	N/A	The proposed mobile phone base station does not present any form of ignition risk. An Asset Protection Zone (APZ) forms part of the proposal.	
6. Will the activity affect the visual or scenic landscape? This should include consideration of any permanent or temporary signage (eg. Signs advertising an event and related sponsorship.	☒	Low	The monopole would project into the skyline above the existing height of the tree canopy and would be visible from some aspects of Grays Point (refer to Appendix C for photomontage views). The monopole would only be visible by those patrons of the Park in close proximity to the structure. Due to the circuitous nature of the access tracks, the facility would not be visible from the majority of pathways throughout the Park.	During the construction phase 4-5 weeks the compound will have construction signs posted during construction to avoid persons wrongly entering the compound and to ensure safe work practices are adhered to. At completion of the works there will be Telstra standard radiation Hazard and private property sign around the compound.
7. Is the activity likely to cause noise, pollution, visual impacts, loss of privacy, glare or overshadowing to members of the community, particularly adjoining landowners?	☒	Low	Residents in the nearby Angle Road would have a distant view of the top of the facility above the tree canopy. Due to the extreme variance in topography, residents in other areas of Grays Point would have either an intermittent view or no view at all of the facility. The facility would only generate low noise, similar to that of a domestic air-conditioner which would have minimal impact upon patrons of the Park. During construction – 4-5 weeks - there is likely to be minimal disturbance from noise.	Operating hours for construction will be restricted to 7:00AM to 5:00 PM Monday to Saturday.

***** If yes, all columns need to be completed. If no, write 'N/A' in the second and third columns

5.15 Natural resource impacts during construction and operation

Section 3.11 of *Proponents Guidelines for the Review of Environmental Factors* provides further guidance

	Applicable?*	**Likely impact** (negligible, low, medium or high negative or positive; or N/A)	**Reasons** (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	**Safeguards/Mitigation Measures**
1. Is the activity likely to result in the degradation of the reserve or any other area reserved for conservation purposes?	☒	Negligible	It is proposed to clear an area of 57.5m^2 of native vegetation to provide an Asset Protection Zone. However, this would not result in the degradation of the Park (refer to Appendix A for further discussion).	Where possible felled trees should be relocated into adjoining low woodland habitat for reuse as terrestrial ground debris. Trees are considered to be small enough for two (2) personnel to manually lift without the need for machinery.
2. Is the activity likely to affect the use of, or the community's ability to use, natural resources?	☐	N/A	The proposed development would have no impact on the community's ability to use natural resources (land and soil, water, air and minerals).	
3. Is the activity likely to involve the use, wastage, destruction or depletion of natural resources including water, fuels, timber or extractive materials? This should include opportunities to utilise recycled or alternative products.	☐	N/A	N/A	
4. Does the activity provide for the sustainable and efficient use of water and energy?	☐	N/A	N/A	

5.15 Natural resource impacts during construction and operation

Section 3.11 of *Proponents Guidelines for the Review of Environmental Factors* provides further guidance

	Applicable?*	**Likely impact** (negligible, low, medium or high negative or positive; or N/A)	**Reasons** (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	**Safeguards/Mitigation Measures**
Where relevant to the proposal, this should include consideration of high efficiency fittings, appliances, insulation, lighting, rainwater tanks, hot water and electricity supply.				

***** If yes, all columns need to be completed. If no, write 'N/A' in the second and third columns

5.15 Aboriginal cultural heritage impacts during construction and operation

Section 3.12 of *Proponents Guidelines for the Review of Environmental Factors* provides further guidance. Addressing matters 1-5 will assist in meeting requirements set out in OEH's 'Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW'..

	Applicable?*	**Likely impact** (negligible, low, medium or high negative or positive; or N/A)	**Reasons** (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	**Safeguards/Mitigation Measures**
1. Will the activity disturb the ground surface or any culturally modified trees?	☒	Low	An area of 57.5m^2 of native vegetation would be cleared to provide a 3m Asset Protection Zone around the perimeter fence. Minor disturbance of the ground surface would be required during construction of the mobile phone base station. It should be noted that the area in which the proposed base station is to be located is a previously cleared area adjacent to an access/management trail. There would be no impact on any culturally modified trees.	If any Aboriginal objects are found, work is to stop and OEH is to be notified. If human remains are found, work is to stop and the OEH and the NSW Police are to be notified. Work will not commence until permission to proceed has been received from the appropriate authorities.
2. Does the activity affect known Aboriginal objects or Aboriginal places? Include all known sources of information on likely presence of Aboriginal objects or places, including AHIMS search results.	☐	N/A	No Aboriginal objects or places were identified at the site location, or in immediate area.	If any Aboriginal objects are found, work is to stop and OEH is to be notified. If human remains are found, work is to stop and the OEH and the NSW Police are to be notified. Work will not commence until permission to proceed has been received from the appropriate authorities.
3. Is the activity located within, or will it affect, areas containing the following landscape features? • within 200m of waters*;	☒	Negligible	The proposed site is an area of disturbed land. The proposed site is located near to a ridge top. The surrounding bushland would provide significant screening of the facility from the surrounding area (refer to **Appendix C** for photomontage views).	If any Aboriginal objects are found, work is to stop and OEH is to be notified. If human remains are found, work is to stop and the OEH and the NSW Police are to be notified. Work will not commence until permission to proceed has been received from the appropriate authorities.

5.15 Aboriginal cultural heritage impacts during construction and operation

Section 3.12 of *Proponents Guidelines for the Review of Environmental Factors* provides further guidance. Addressing matters 1-5 will assist in meeting requirements set out in OEH's 'Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW'..

	Applicable?*	**Likely impact** (negligible, low, medium or high negative or positive; or N/A)	**Reasons** (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	**Safeguards/Mitigation Measures**
• within a sand dune system*; • on a ridge top, ridge line or headland; • within 200m below or above a cliff face; or • within 20m of or in a cave, rock shelter or a cave mouth. *see REF Proponents Guide for definitions.				
4. If Aboriginal objects or landscape features are present, can impacts be avoided?	☐	N/A	N/A	
5. If the above steps indicate that there remains a risk of harm or disturbance, has a desktop assessment and visual inspection^ been undertaken (refer to the Due Diligence Code)? ^ for activities proposed by OEH, at a minimum this should be undertaken by a OEH employee with	☐	N/A	N/A	

5.15 Aboriginal cultural heritage impacts during construction and operation

Section 3.12 of *Proponents Guidelines for the Review of Environmental Factors* provides further guidance. Addressing matters 1-5 will assist in meeting requirements set out in OEH's 'Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW'..

	Applicable?*	**Likely impact** (negligible, low, medium or high negative or positive; or N/A)	**Reasons** (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	**Safeguards/Mitigation Measures**
Aboriginal Site Awareness training and relevant practical experience, as approved by an Area Manager				
6. Is the activity likely to affect wild resources or access to these resources, which are used or valued by the Aboriginal community?	☒	Negligible	The proposed development is unlikely to affect wild resources or access to these resources, which are used or valued by the Aboriginal community. The Ananan Management Trail could be used for access by the Aboriginal community and during the construction period of 4-5 weeks there will be a minimal amount of disruption. The trial will always remain passable.	The compound will have construction signs posted during construction to avoid persons wrongly entering the compound and to ensure safe work practices are adhered to
7. Does the activity affect areas subject to Native Title claims?	☐	N/A	N/A	

***** If yes, all columns need to be completed. If no, write 'N/A' in the second and third columns

Notes:

- if the above assessment indicates that there is still a reasonable risk or potential that Aboriginal objects, Aboriginal places or sensitive landscape features could be adversely affected by a proposal, then consistent with the precautionary principle it should either be re-considered or further detailed investigations undertaken.

- if it is concluded that an activity will have unavoidable and justified impacts on Aboriginal objects or Aboriginal places then the proponent should consider applying for an AHIP under Section 90 of the NPW Act.

5.15 Other cultural heritage impacts during construction or operation

Section 3.13 of *Proponents Guidelines for the Review of Environmental Factors* provides further guidance

	Applicable?*	**Likely impact** (negligible/ maintenance, minor, major, contentious; or N/A)	**Reasons** (describe the type, nature and extent of impact, taking into account the receiving environment & proposed safeguards which will limit the impact)	**Safeguards/Mitigation Measures**
1. What is the impact on places, buildings, landscapes or moveable heritage items?	☐	N/A	N/A	
2. Is any vegetation of cultural landscape value likely to be affected (eg. Gardens and settings, introduced exotic species, or evidence of broader remnant land uses)?	☐	N/A	N/A	

*If yes, all columns need to be completed. If no, write 'N/A' in the second and third columns

5.15 Matters of national environmental significance under the EPBC Act

Section 3.14 of *Proponents Guidelines for the Review of Environmental Factors* provides further guidance. Also refer to guidelines produced by the Commonwealth Department of Sustainability, Environment, Water, Population and Communities

	Applicable?*	**Impact level** (negligible, low, medium or high; negative or positive; or N/A)	**Reasons** (describe the type, nature and extent of impact, taking into account the receiving environment & proposed safeguards which will limit the impact)	**Safeguards/Mitigation Measures**
1.Is the proposal likely to impact on matters of national environmental significance under the EPBC Act, as follows:				
• Listed threatened species or ecological communities	☒	Negligible	10 listed threatened species were considered as possibly occurring in the site area. None of the 6 flora species were located in the area	A pre-construction search for the Threatened orchid Genoplesium baueri should be undertaken during its known flowering period (December—March) in an attempt to

5.15 Matters of national environmental significance under the EPBC Act

Section 3.14 of *Proponents Guidelines for the Review of Environmental Factors* provides further guidance. Also refer to guidelines produced by the Commonwealth Department of Sustainability, Environment, Water, Population and Communities

	Applicable?*	**Impact level** (negligible, low, medium or high; negative or positive; or N/A)	**Reasons** (describe the type, nature and extent of impact, taking into account the receiving environment & proposed safeguards which will limit the impact)	**Safeguards/Mitigation Measures**
			studied and the four fauna species were subject to a S5A Assessment which concluded that the proposed development would have no significant impact.	confirm or discount its presence on the site. Results from an online Wildlife Atlas search show two (2) records for the species less than 500 m from the study area.
• Migratory species protected under international agreements	☒	Negligible	A total of 61 EPBC-listed migratory species were recorded as being in the locality. No habitat exists on the subject site for any of these listed migratory species. The proposed activity is therefore unlikely to cause a significant impact to any the listed migratory species, including those on JAMBA/CAMBA.	
• Ramsar wetlands	☐	N/A	The subject site is not located within an area of wetlands. The nearest RAMSAR wetland (Towra Point Nature Reserve) is located approximately 10 km to the east of the study area. The proposed activity will not impact upon Towra Point Nature Reserve.	
• Commonwealth marine environment	☐	N/A	There are no Commonwealth marine areas listed in the locality.	
• World heritage properties or national heritage places	☒	Negligible	The subject site is not listed as a World Heritage Area. There are no other World Heritage Areas listed in the locality. The subject site is located in the Royal National Park and Garawarra State Conservation Area, which are included in the National Heritage List as a 'place of national significance' pursuant to section 324J of the Environment Protection and Biodiversity Conservation Act 1999. As detailed in Section 5, the proposed activity will not	

5.15 Matters of national environmental significance under the EPBC Act Section 3.14 of *Proponents Guidelines for the Review of Environmental Factors* provides further guidance. Also refer to guidelines produced by the Commonwealth Department of Sustainability, Environment, Water, Population and Communities				
	Applicable?*	**Impact level** (negligible, low, medium or high; negative or positive; or N/A)	**Reasons** (describe the type, nature and extent of impact, taking into account the receiving environment & proposed safeguards which will limit the impact)	**Safeguards/Mitigation Measures**
			adversely impact upon the National Heritage Values of the Royal national Park. One other (historic) National Heritage Place is nominated for listing in the locality (Kamay, Botany Bay), however, the proposed activity will not affect this place.	

Note:

- referral to the Commonwealth may be required if the activity is likely to have a significant effect of matters of national environmental significance. Refer to the Significant Impact Guidelines at: **http://www.environment.gov.au/epbc/publications/nes-guidelines.html**

9. Proposals requiring additional information

Only complete the following sections **if applicable** to the proposal.

5.15 Lease or licence proposals under s.151 NPW Act Section 2.2 of *Proponents Guidelines for the Review of Environmental Factors* provides further guidance
Proponents must complete and submit a **Sustainability Assessment** together with the REF. This also applies where OEH is the proponent for projects of the kind listed in s.151A, NPW Act. For information on the sustainability assessment criteria and guidelines, including assessment templates, go to: http://www.environment.nsw.gov.au/protectedareas/developmntadjoiningdecc.htm Note that for **minor activities and uses** (usually events and similar proposals involving less than 400 people) a streamlined and combined REF and Sustainability Assessment template is available (**Template 1**).
Sustainability assessment attached as follows: ☐ Special activities and uses (involving more than 400 people) – Sustainability Assessment **Template 2** ☐ Built structures and facilities – Sustainability Assessment **Template 3**

5.15 Telecommunications facilities (s.153D, NPW Act) Section 2.2 and Appendix 1 of *Proponents Guidelines for the Review of Environmental Factors* provide further guidance	
1. Are there feasible alternative sites for the facility on land that is not reserved under the NPW Act?	No. (refer to **6. Reasons for the activity and consideration of alternatives)**
2. Does the site of any above ground facility cover the minimum area possible?	Yes. The footprint of the facility within the perimeter fence would be 60m^2. With the Asset Protection Zone the total area is 192m^2.
3. Is the facility to be designed and constructed to minimise risk of damage to the facility from bushfires?	The facility would not increase the risk of bushfires in the area (refer to **3.1 *Rural Fires Act 1997*** for further discussion). The facility would be unmanned and would not present a risk for any resident personnel
4. Has the site and construction of the facility been selected to, as far as practicable, minimise visual impacts?	Yes. The facility has been designed as a monopole to minimise the footprint space within the Park.
5. Is it feasible to use an existing means of access to the site?	Yes. The existing graded vehicular access track would provide suitable access to the site

6. Is the facility essential for the provision of telecommunications services for land reserved under the NPW Act or for surrounding areas to be served by the facility?	Yes. Due to the advancement of technology and the increased use of new data and video devices such as smartphones and tablets, the existing network is unable to provide a reliable service using the current base station network. Customers in the Grays Point area and within the RNP have been experiencing limited connectivity and call 'dropouts' have been increasing. Customers often have trouble connecting to the network, particularly during peak operating times. Historically, there have been incidents involving the emergency services which would have been aided by mobile phone service.
7. Will the facility be removed and the site restored as soon as possible after the facility becomes redundant (eg. Due to changes in technology)?	Yes. Once removed, the site would quickly revert to its previous state.
8. Has the site been selected after taking into account the objectives set out in any plan of management relating to the land?	Yes. (refer to **3.1 Reserve Management Principles (s.30E-30K)** and **Title and relevant sections of plan of management or Statement of Interim Management Intent (or drafts)** above for further discussion)
9. If feasible, will the facility be co-located with an existing structure or located at a site that is already disturbed by an existing lease, licence, easement or right of way	No. No existing infrastructure is currently installed at the site; however, the site is already disturbed by the installation of a graded vehicular access track

If co-location is proposed, please indicate if:

☐ The proponent will be the owner of the facility

☐ The proponent will be a co-user of the facility

5.15 Activities within the Sydney Drinking Water Catchment

Activities within the catchment are subject to the provisions of the Drinking Water Catchments REP No.1

1. Does the activity incorporate any current recommended practices and performance standards endorsed or published by the Sydney Catchment Authority that relate to the protection of water quality?	N/A
2. If the activity does not do so, how will the activity achieve outcomes not less than these?	N/A
3. Will the activity have a neutral or beneficial effect on water quality?	The proposal would have a neutral effect upon the water quality as the small amount of hardstand runoff from the roof top of the small equipment shelter would be allowed to percolate naturally to the water table. The equipment shelter would be constructed of aluminium or steel and would not produce any detrimental effects upon the quality of water feeding into the water table.

10. Threatened species assessment of significance (7 part test)

Address each of the factors set out in s 5A EP&A Act to decide whether there is likely to be a significant effect on threatened species, populations, ecological communities or their habitats, as set out below, or alternatively address the factors in a separate document. In preparing this section, refer to any relevant guidelines published by the OEH.

Threatened species, populations and communities and critical habitats listed under both the *Threatened Species Conservation Act 1997* and *Fisheries Management Act 1994* should be included. Those listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) should not be included. Impacts on EPBC listed species should be addressed in section 8 above, or in a separate attached assessment. The proponent will still need to separately consider whether referral to the Commonwealth is required.

When you have completed the threatened species assessment of significance (7-part test), include the findings in Biological Impacts section.

List the species, populations and ecological communities, or their habitats which are likely to be affected by the proposal:

(a) in the case of a threatened species, whether the action proposed is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

(b) in the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction.

(c) in the case of an endangered ecological community or critically endangered ecological community, whether the action proposed:

  (i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or
  (ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction

(d) in relation to the habitat of a threatened species, population or ecological community:
  (i) the extent to which habitat is likely to be removed or modified as a result of the action proposed, and
  (ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and
  (iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality

(e) whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly).

(f) whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan.

(g) whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process**.**

Comment: The proposed facility would not have any significant impact upon any threatened species, populations, ecological communities or their habitats (refer to **Appendix A** for further discussion).

11. Summary of impacts

Summarise the impacts and consider the cumulative impacts of the activity based on the classification of individual impacts as low, medium or high adverse, negligible or positive.

Section 3.15 of *Proponents Guidelines for the Review of Environmental Factors* provides further guidance.

Category of Impact	Significance of impacts		
	Extent of impact	**Nature of impact**	**Environmentally sensitive features**
Physical and Chemical	Negligible	• Soil disturbance; • Generation and disposal of solid waste; and • Dust noise and vibration.	Royal National Park The Greater Woronora Plateau Sydney Water Supply Catchment
Biological	Negligible	• Clearance of native vegetation; • Disturbance of subject species; and • Introduction of noxious weeds, vermin, feral species or genetically modified organisms into an area.	Subject Species Royal National Park The Greater Woronora Plateau Sydney Water Supply Catchment
Natural Resources	N/A	•	
Community	Positive	• Disturbance to access along the Ananan track during the construction phase; • Noise, dust and vibration during the construction phase; • Visual – new feature in the skyline; • Improved mobile phone reception; • Impoved safety and emergency service through enhanced communication; • Enhanced educational opportunities; and • Increase in revenue for the park.	Royal National Park
Cultural Heritage	Negligible	• Potential disturbance of Aboriginal objects during construction (ground disturbance) and the clearance of native vegetation.	Aboriginal Heritage

12. Conclusions

In conclusion indicate if:

- there is likely to be a significant effect on the environment and an environmental impact statement is required?

  ☒ No

  ☐ Yes

Reason(s):

The proposal complies with the aims and objectives of the National Parks & Wildlife (NP&W) Act 1974 and meets the development criteria as stated in the OEH Proponent Guidelines for the Review of Environmental Factors. It is concluded that the proposal would not have any significant detrimental impact upon the natural environment or any species of flora or fauna.

- there is likely to be a significant effect on threatened species, populations, ecological communities or their habitats and a species impact statement is required?

  ☒ No

  ☐ Yes

Reason(s):

The Section 5A Assessment (refer to **Attachment A**) concluded that the proposed removal of 57.5 m^2 (0.00575 ha) of vegetation is unlikely to result in a significant impact on threatened species, populations or ecological communities.

- the activity is in respect of land that is, or is part of, critical habitat and a species impact statement is required?

  ☒ No

  ☐ Yes

- the activity will require certification to Building Code of Australia or Australian Standards in accordance with the OEH *Construction Assessment Procedure*?

  ☐ No

  ☒ Yes

13. Supporting documentation

Please provide details of documentation included with this application. Supporting information may include, but is not limited to, a Sustainability Assessment (for proposals requiring a lease of licence under s.151A NPW Act), threatened species assessment of significance (7 part test), LEP land use tables, AHIMS search, engineering plans, maps, specialists studies etc.

Appendix	Document Title	Author	Date
A	Terrestrial Ecology Assessment	Orogen	2011
B	Telecommunication Towers in Bush Fire Prone Areas	NSW Rural Fire Service	2012
C	Site Photos and Photomontages	Aurecon/Pixelwise	2011
D	Construction Details and Risk Assessment	Silcar	2011
E	Map - Surrounding Telstra Network	Telstra	2011
F	Map – Enhanced Coverage Area	Telstra	2011
G	EME Report	Telstra	2011
H	Reconnaissance – Alternative Locations	Aurecon	2011
I	Site Drawings and Locality	Aurecon	2011
J	Sutherland Shire Zoning Maps (SSLEP 2006)	Sutherland Shire Council	2011
K	AHIMS Report	AHIMS	2012

14. Fees

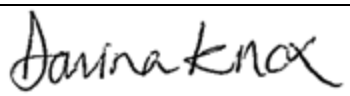
Proponents are required to pay an initial fee of $170 (a final fee is also required before determination of the REF).

If the activity consists of environmental remediation and the proponent is a community group, OEH may waive the fees on request.

☒	$170 payment/cheque for initial fee is enclosed
☐	A waiver of fees is requested. Please provide reasons:

15. Signature of proponent

The REF must be certified by the proponent – not the consultant(s) where consultant(s) are used.

Signature		Signature	
Name (printed)	Davina Knox	Name (printed)	
Position	Town Planner	Position	
Date	12/10/2012	Date	

Seal (if signing under seal):

FOR OEH USE

- **External proponent REF or major REF**

► proceed to prepare determination report and determination notice

- **Internal minor REF**

► proceed to prepare determination notice (no determination report required)

Determination report templates, determination notices and model conditions are available at: **http://deccnet/epa/REFGuidelines.htm**

Appendices

Appendix A

Terrestrial Ecology Assessment

Our Ref: 411035_REO_001

BM_01.F25_V1

7 October 2011

Aurecon
PO Box 538
Neutral Bay NSW 2089

Attention: Carly Mellor

Dear Carly

RE: Terrestrial Ecology Assessment, Proposed Telstra Mobile Phone Base Station, Royal National Park, via Greenhaven Road, Grays Point

1. Introduction

In response to a request from the NSW Office of the Environment and Heritage (OEH) for additional information, Orogen was commissioned by Aurecon Australia Pty Ltd to undertake a Terrestrial Ecology Assessment for a proposed mobile phone tower in the Royal National Park, Grays Point, NSW. The tower is proposed to be situated mostly within a small clearing on the northern side of the Anana Management Trail within the far northern section of the Royal National Park.

Discussions with OEH's Mr Grant Millar confirmed that the ecology scope of work would comprise a botanical survey and a Section 5A Assessment based on field surveys (flora) and habitat assessment (fauna). OEH agreed that no fauna surveys were warranted given the negligible area of vegetation proposed for removal to accommodate the mobile phone tower (*pers. comm*. Mr Grant Millar, 29 September 2011).

2. Description of the Proposal

The Telstra proposal comprises the following features, detailed in the REF for the project (Aurecon, 2011):

- Construction of a new 35m high monopole;
- Initial installation of 3 new panel antennas mounted on the new monopole;
- Future installation of 9 panel antennas mounted on the new monopole; and
- Installation of ancillary equipment on the new monopole and within a new Telstra shelter located at the base of the new monopole.

Based on the Survey Plan provided to Orogen by Aurecon (**Figure 1**), a total of 57.5 m^2 (0.00575 ha) of native vegetation would require removal for the proposed mobile phone tower and ancillary facilities.

3. Methodology

An online search of the NSW Wildlife Atlas (Royal National Park search area) was undertaken in October 2011 to determine records of locally occurring Threatened flora and fauna species, to assist in determining which species to target during field surveys (flora) as part of a Section 5A assessment.

A botanical survey was undertaken by Orogen Senior Botanist Isaac Mamott on 30 September 2011 in fine conditions over a 3.5 hour period to inventory vascular plants within the study area. For the purposes of this study, the study area is defined as a 15 metre arc radius north of the survey pegs established by Aurecon surveyors at the proposed tower site. A total of 4 x 30 m tape reels were set out in an arc (180˚) to delineate the study area in the field. All vascular taxa within the study area were recorded on a field proforma along with other bio-physiographic attributes such as vegetative structure, soils and geology, slope, aspect, topographic position, location, time since last fire event and forms of disturbance, other than fire.

The structural classification used for the community description follows Walker and Hopkins (1990). Subformation names for vegetation types follows the classification proposed by Beadle and Costin (1952). Botanical nomenclature follows Harden (1990-1993, 2000, 2003) and recent prescriptions of the NSW National Herbarium in botanical journals and *PlantNet* website. The vegetation communities are named after dominant indicator species of the tallest stratum and could be considered as 'associations' as defined by Beadle (1981).

Assessment of the conservation status of the vegetation communities recorded in the study area follows the Preliminary and Final Scientific Committee Determinations listed under the *TSC Act*.

The survey was supplemented with dedicated searches for locally occurring TSC listed and ROTAP taxa associated with Sydney Sandstone Ridgetop Woodland habitats within the study area, including *Eucalyptus camfieldii, Melaleuca deanei, Grevillea parviflora, Darwinia diminuta, Darwinia biflora and Persoonia hirsuta*.

4. Survey Results

Vegetation Community Description

A Low Open Dry Sclerophyll Woodland/Sandstone Open Heath intergrade community was recorded in the study area during the botanical survey on shallow, low nutrient, dry to slightly moist sandy soils on Hawkesbury Sandstone. Sandstone outcropping was extensive throughout the study area. No ironstone was recorded mantling the bedrock. The intergrade community occurred on a semi-broad ridge that runs along the Anana Management Trail at an elevation of approximately 107 m AHD in the study area.

The community contained elements typical of both Sydney Sandstone Ridgetop Woodland (*eg. Eucalyptus spp.*) and Open and Closed Heath/Scrub communities (*eg. Allocasuarina distyla, Banksia ericifolia, Darwinia fascicularis subsp fascicularis, Angophora hispida*). The author has often recorded community

intergrades of this type in a number of Sydney Sandstone reserves (Woronora and Hornsby Plateaux) and is it considered to be a relatively common feature of the Sydney Sandstone flora, particularly on poorly drained plateau areas, low slope ridges and ridgetops with skeletal sandy soils (author's *pers. obs*.).

Floristic Summary

A structural and floristic summary of the intergrade community recorded in the study area is provided below.

Upper (Tree) Stratum: 6-7m tall. Projected Canopy Cover 15%

Eucalyptus racemosa x *Eucalyptus haemastoma (hybrid), Corymbia gummifera, Eucalyptus punctata.*

Mid Stratum (Upper): 2-4m tall. Projected Canopy Cover 35%

Angophora hispida, Allocasuarina distyla, Leptospermum trinervium, Persoonia levis, Banksia ericifolia subsp ericifolia, Banksia serrata.

Mid Stratum (Lower): 1-2m tall. Projected Canopy Cover 35%

Lambertia formosa, Grevillea sericea subsp. sericea, Grevillea buxifolia subsp. buxifolia, Hakea teretifolia, Persoonia pinifolia, Darwinia fascicularius subsp fascicularis, Epacris longiflora, Petrophile pulchella, Isopogon anemonifolius, Monotoca scoparia, Leptospermum arachnoides, Leucopogon esquamatus, Acacia suaveolens

Ground Cover: 0-1 m tall. Projected Canopy Cover 50%

Entolasia stricta, Patersonia glabrata, Lomandra glauca, Cyathochaeta diandra, Lepyrodia scariosa, Lepidosperma filiforme?, Lepidosperma laterale, Lepidosperma viscidum, Platysace linearifolia, Tetraria capillaris, Brachyscome multifida, Schoenus sp.

Conservation Status

At the time of report preparation, data on extant area for this vegetation community intergrade both in the Royal National Park and on the greater Woronora plateau was not available from OEH. In the absence of this data, however, it can be reasonably assumed that given the community intergrade's local occurrence on exposed ridges and plateau tops, the community is expected to be well represented (ie. conserved) in the locality's conservation reserves (Royal, Heathcote NPs) as well as in the adjoining Sydney Water Supply Catchment (considered as a de facto reserve).

The vegetation community intergrade is not considered to be analogous to any TSC or EPBC listed EECs.

Threatened Plants

No rare or Threatened plants were recorded in the study area during the survey. The Threatened tree *Eucalyptus camfieldii* was tentatively (and opportunistically) recorded approximately 200 metres from the study area in a similar vegetation type south of the Anana Management Trail. No disturbance to the tree would be expected from the proposal as it is well outside the area of vegetation to be cleared.

5. Impact Assessment

Vegetation Removal

The proposed phone tower and surrounding perimeter compound fence would be wholly contained within a small, existing clearing on the northern side of the Anana Management Trail and thus no clearing of vegetation would be required for the physical plant equipment (tower, shelter and fence).

Advice from Aurecon confirmed that a 3 m cleared area around the perimeter fence would be needed for access and fire protection purposes. The 3 m setback would require the removal of approximately 57.5 m^2 (**Figure 1**) of the vegetation community intergrade described above in **Section 4** of this letter report. In the absence of extant mapping data for the Royal National Park and greater Woronora Plateau at the time of report preparation, a precise quantitative measure of the absolute total % loss of this community intergrade cannot be made. Nevertheless, as noted in **Section 4**, if one takes into account the community intergrade's broad occurrence in the locality's formal conservation reserves and de facto reserves based on its landform and geological characteristics, one can reasonably conclude that the removal of 57.5 m^2 of this community is 'negligible' in this local context and would not be expected to significantly impact the community's local occurrence or viability.

Threatened Species

A Section 5A Assessment (short tablature form) was undertaken for those TSC/EPBC listed species considered as possible occurrences within the study area based on each species' known habitats and distribution as well as vegetation type/habitats recorded in the study area (**Attachment A**). Such species are referred to as 'Subject Species'. Subject Species for the proposal are listed below:

Flora

Eucalyptus camfieldii, Astrotricha crassifolia, Prostanthera densa, Darwinia biflora, Melaleuca deanei, Genoplesium bauera, Grevillea parviflora subsp parviflora, Persoonia hirsuta and Pimelea curviflora var curviflora, Genoplesium baueri.

It should be noted that species such as *Prostanthera densa*, *Melaleuca deanei* and *Pimelea curviflora var curviflora* are considered to have only a low to moderate likelihood of occurrence in the study area, as the author has only recorded these species on laterite overlying sandstone which is absent on the site.

The Threatened orchid, *Genoplesium baueri*, was not targeted during the survey as it dies back annually to an underground tubestock following flowering and seed set. A targeted search for this species is recommended during its summer flowering period.

Fauna

Broad headed Snake (*Hoplocephalus bungaroides*), Rosenberg's Goanna (*Varanus rosenbergi*), Greater Broad nosed Bat (*Scoteanax rueppellii*), Southern Myotis (*Myotis macropus*), Eastern Bentwing-bat (*Miniopterus schreibersii oceanensis*), Eastern False Pipistrelle (*Falsistrellus tasmaniensis*), Large eared Pied Bat (*Chalinolobus dwyeri*), Koala (*Phascolarctos cinereus*), Grey headed Flying Fox (*Pteropus poliocephalus*), Spotted tailed Quoll (*Dasyurus maculatus*), Eastern Pygmy Possum (*Cercartetus nanus*), Powerful Owl (*Ninox strenua*), Masked Owl (*Tyto novaehollandiae*), Sooty Owl (*Tyto tenebricosa*), Barking Owl (*Ninox connivens*), Little Lorikeet (*Glossopsitta pusilla*), Varied Sitella (*Daphoenositta chrysoptera*), Gang Gang Cockatoo (*Callocephalon fimbriatum*), Osprey (*Pandion haliaetus*), Square tailed Kite (*Lophoictinia isura*), Little Eagle (*Hieraaetus morphnoides*), Red crowned Toadlet (*Pseudophryne australis*), Giant Burrowing Frog (*Heleioporus australiacus*).

The study area represents potential foraging habitat only for microbats and the large forest owls given the absence of roosting habitat for this suite of species such as tree hollows and cave/cave substitutes.

The Section 5A Assessment (**Attachment A**) concluded that the proposed removal of 57.5 m^2 (0.00575 ha) of vegetation is unlikely to result in a significant impact on threatened species, populations or ecological communities.

6. Mitigation Measures

The following mitigation measures are recommended to minimise impacts to flora and fauna:

- A pre construction search for the Threatened orchid *Genoplesium baueri* should be undertaken during its known flowering period (December—March) in an attempt to confirm or discount its presence on the site. Results from an online Wildlife Atlas search show two (2) records for the species less than 500 m from the study area;
- Clearing of vegetation for the 3 m setback from the perimeter fence should be kept to an absolute minimum so that no vegetation over and above what is required for the proposal is removed. The clearing Contractor should be inducted by Aurecon personnel and made aware of the clearing limitations. Temporary plastic mesh fencing or a suitable alternative should be established to delineate the clearing zone for the clearing Contractor;
- Vegetation should be felled away from adjoining (retained) vegetation and towards the tower footprint;
- Felled trees should be relocated into adjoining low woodland habitat for reuse as terrestrial ground debris. Trees are considered to be small enough for two (2) personnel to manually lift without the need for machinery;
- Given the absence of hollows and the small area of vegetation proposed for removal (57.5 m^2), no ecological clearing supervision, pre clearing surveys or compensatory nest box program is deemed warranted;
- It is likely that the setback zone will need to be maintained by slashing on a periodic basis. Maintenance slashing should similarly be restricted to the defined setback zone with no disturbance

to the adjoining (retained) vegetation. Slashing should be undertaken by a whipper snipper rather than a ride on commercial slasher; and

- To minimise the introduction of pathogens to the site, Telstra, Aurecon and its Contractors should adopt personal and vehicle hygiene practices during all pre construction, construction and post construction maintenance activities at the site, including the use of a bleach/water solution on all vehicles, tyres and plant equipment prior to entering the site.

7. Natural Heritage Values of the Royal National Park

The Royal National Park and Garawarra State Conservation Area were included in the National Heritage List as a 'place of national significance' pursuant to section 324J of the *Environment Protection and Biodiversity Conservation Act 1999*.

The listing was gazetted in the Commonwealth Government Gazette on 15 December 2006. The following National Heritage Values were listed for the site:

> *"The place is important for its richness in a wide array of species including heaths (Epacridaceae), peas and wattles (Mimosaceae and Fabaceae), orchids (Orchidaceae), grevilleas and banksias (Proteaceae) and members of the eucalypt family (Myrtaceae). The place is also extremely important as a centre of temperate animal species richness for a range of groups including perching birds (Passeriformes) especially honeyeaters (Meliphagidae), tree-frogs (Hylidae), reptiles (Reptilia) and butterflies (Lepidoptera). The place can be regarded as exemplifying the biodiverse Hawkesbury Sandstone environment (Braby 2000; DEH 2004; DEH 2006; NSW NPWS 2000)."*

Consideration of the National Heritage Values and the potential impacts of the proposed clearing on these (flora and fauna groups contained therein) have been addressed in this Terrestrial Ecology assessment. The Section 5A Assessment () concluded that the proposed clearing of 57.5 m2 of vegetation around the perimeter fence of the compound would be unlikely to result in a significant impact on any species, populations or ecological communities. Therefore, the proposed activity is unlikely to adversely affect the National Heritage Values of the Royal National Park. In addition mitigation measures as described in the Section 6 will ensure that the clearing works will not adversely impact on the surrounding environment.

8. Commonwealth Environment Protection and Biodiversity Conservation Act 1999 Assessment

General Overview

The *Commonwealth Environmental Protection and Biodiversity Conservation Act 1999* (*EPBC Act*) requires that assessment must be made to determine if an activity is likely to impact upon eight identified matters of National Environmental Significance (NES). Activities considered likely to cause a significant impact to matters of NES require Commonwealth approval under the provisions of the *EPBC Act.*

The eight matters of NES listed under the *EPBC Act* are:

- World Heritage properties;
- National heritage places;
- Wetlands of international importance (Ramsar wetlands);
- Great Barrier Reef Marine Park;
- Commonwealth marine areas;
- Listed Threatened species'
- Listed ecological communities; and
- Listed Migratory species.

Assessment

The relevance of each matter of NES when considering the proposed development is discussed below in Table 8.1. This assessment was undertaken with reference to an Environment Protection and Biodiversity Conservation Act Online Database search, with a buffer area of 10 km. A copy of the EPBC search results is provided in Attachment B.

Table 8.1 - Consideration of EPBC Act Matters of NES

Consideration	Assessment
World Heritage Properties	The subject site is not listed as a World Heritage Area. There are no other World Heritage Areas listed in the locality.
National Heritage Places	The subject site is located in the Royal National Park and Garawarra State Conservation Area, which are included in the National Heritage List as a 'place of national significance' pursuant to section 324J of the *Environment Protection and Biodiversity Conservation Act 1999*. As detailed in **Section 5**, the proposed activity will not adversely impact upon the National Heritage Values of the Royal national Park. One other (historic) National Heritage Place is nominated for listing in the locality (Kamay, Botany Bay), however, the proposed activity will not affect this place.
Wetlands of International Significance (RAMSAR Wetlands)	The subject site is not located within an area of wetlands. The nearest RAMSAR wetland (Towra Point Nature Reserve) is located approximately 10 km to the east of the study area. The proposed activity will not impact upon Towra Point Nature Reserve.
Great Barrier Reef Marine Park	The Great Barrier Reef Marine Park is not in the locality.
Commonwealth Marine areas	There are no Commonwealth marine areas listed in the locality.
Listed Ecological Communities	Two EPBC-listed ecological communities occur within the locality (Littoral Rainforest and Coastal Vine Thickets of Eastern Australia and Turpentine-Ironbark Forest in the Sydney Basin Bioregion). These two communities do not occur on the subject site. The proposed clearing will therefore not affect any EPBC Act listed Ecological Communities.

Table 8.1 - Consideration of EPBC Act Matters of NES

Consideration	Assessment
Listed Threatened Species	A total of 57 EPBC-listed species are recorded as being in the locality (10 km radius). Of these, 10 species were considered as possibly occurring in the study area based on habitat requirements, these being: Giant Burrowing Frog (*Heleioporus australiacus*); Large-eared Pied Bat (*Chalinolobus dwyeri*); Grey-headed Flying-fox (*Pteropus poliocephalus*); Broad-headed Snake (*Hoplocephalus bungaroides*); Thick-leaf Star-hair (*Astrotricha crassifolia*); Camfield's Stringybark (*Eucalyptus camfieldii*); Small-flower Grevillea (*Grevillea parviflora subsp. parviflora*); Deane's Melaleuca (*Melaleuca deanei*); *Pimelea curviflora var. curviflora;* and Villous Mintbush (*Prostanthera densa*). None of the six flora species listed were located in the clearing area, though *Eucalyptus camfieldii* was tentatively identified approximately 200m form the study area. The four fauna species were subject to the s5A Assessment (**Section 5**), which concluded no significant impact. The proposed development is therefore considered unlikely to cause a significant impact to any Threatened species listed under the *EPBC Act.*
Listed Migratory Species	A total of 61 EPBC-listed migratory species were recorded as being in the locality. No habitat exists on the subject site for any of these listed migratory species. The proposed activity is therefore unlikely to cause a significant impact to any the listed migratory species, including those on JAMBA/CAMBA.

Other Matters Protected by the EPBC Act

In addition to the Matters of National Environmental Significance, consideration must be given to other matters protected by the *EPBC Act* when assessing proposals. These matters are summarised in **Table 8.2** and this assessment was undertaken with reference to an Environment Protection and Biodiversity Conservation Act Online Database search, with a buffer area of 10 km.

Table 8.2 - Consideration of Other Matters under EPBC Act

Consideration	Assessment
Commonwealth Lands	A total of 12 EPBC-listed Commonwealth Lands are recorded in the locality. None of these lands are located within the subject site. The proposed development will not impact upon any Commonwealth Lands.
Commonwealth Heritage Places	There is one EPBC-listed Commonwealth Heritage Place within the locality of the subject site (Indigenous- Cubbitch Barta National Estate Area). This place, however, is located 14 km to the west at Holsworthy. The proposed activity will therefore not impact upon any Commonwealth Heritage Places.
Listed Marine Species	The subject site is not located in a marine environment.
Whales and Other Cetaceans	The subject site is not located in a marine environment.
Critical Habitats	No critical habitats listed under the *EPBC Act* have been identified within the locality.
Commonwealth Reserves.	No Commonwealth Reserves occur within the locality.

Assessment Conclusion

It is submitted that the proposed activity will not result in the potential for a significant effect on Threatened Species and Threatened Ecological Communities listed under the *EPBC Act.*

There are no Wetlands of International Significance, Migratory Species, EPBC listed Threatened species or any other matters protected by the *EPBC Act* that will be significantly affected by the proposed development. It is therefore considered that the proposed development would not require Commonwealth approval under the provisions of the *EPBC Act.*

9. Conclusion

The proposed removal of 57.5 m2 (0.00575 ha) of vegetation around the perimeter fence of the compound is unlikely to result in a significant impact on any threatened species, populations of ecological communities. Further, Natural Heritage values of the Royal National Park as gazetted under the *Environment Protection and Biodiversity Conservation Act 1999* have been considered and it is concluded that the removal of this vegetation will not adversely impact upon these values of the Royal National Park. Implementation of appropriate mitigation as discussed in Section 8 will ensure that there are no adverse impacts on the surrounding vegetation and habitat as a result of the proposed vegetation removal.

Should you have any queries, please do not hesitate to contact the undersigned.

Yours faithfully
Orogen Pty Ltd

Signed copy on file

TONY FISH
Business Manager/Project Director

Figure 1 – Survey plan of site compound boundary and surrounding vegetation

Attachment A — Section 5A Assessment

Attachment B — EPBC Act Protected Matters Search Results

References

Beadle, N.C.W. (1981) *The Vegetation of Australia*. Cambridge University Press, Cambridge.

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Harden G.J., (1990-1993; 2000, 2003). *Flora of New South Wales Vol 1-4*; revised Volumes 1 and 2 ; NSW University Press, Kensington.

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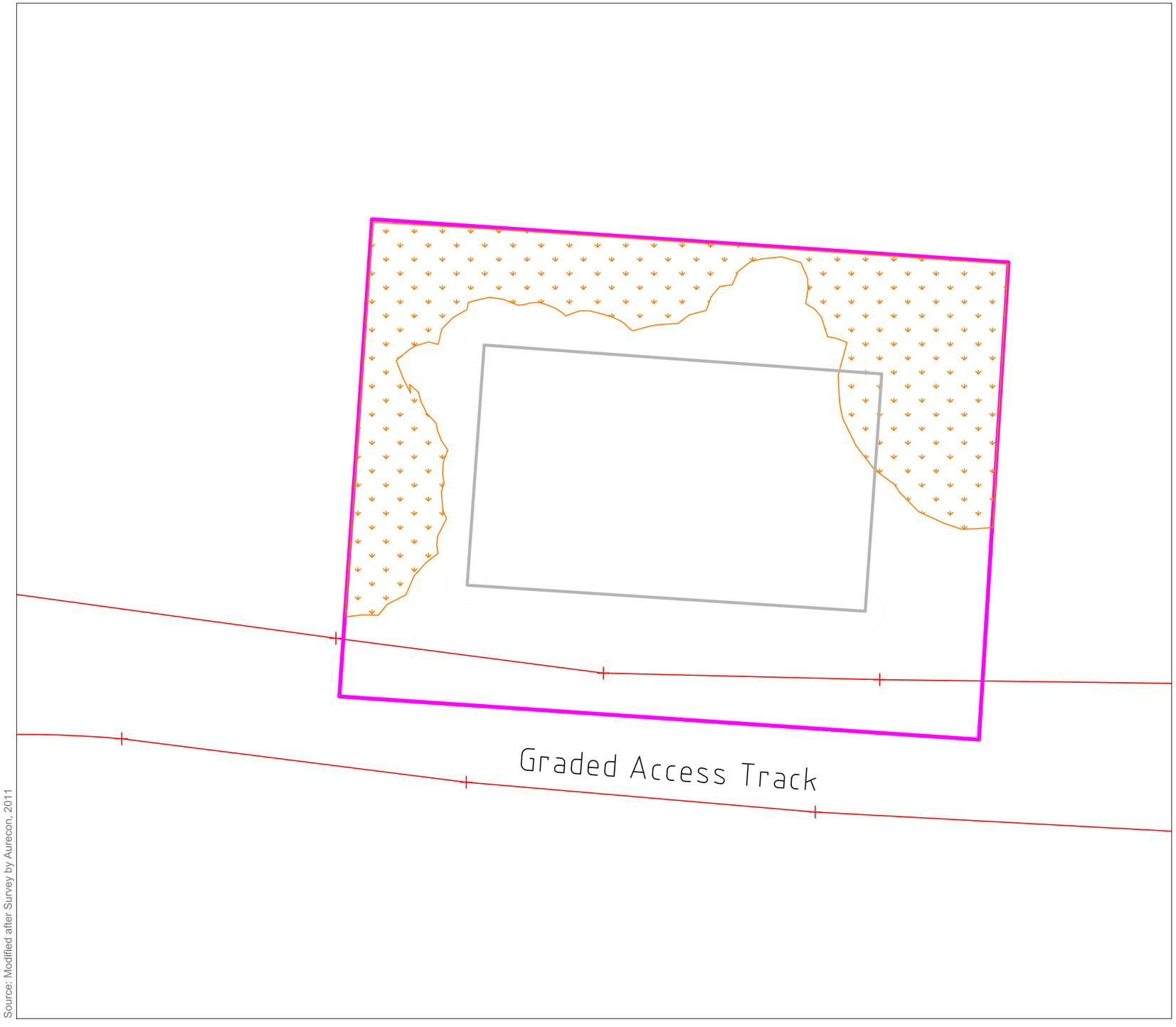
orogen



LEGEND

Site Compound Boundary

3 m boundary fence clearance

Low Dry Sclerophyll Open Woodland/Sandstone Open Heath Intergrade community - approximate area to be cleared = 0.00575 ha

Source: Modified after Survey by Aurecon, 2011

Figure 1 - Survey Plan of Site Compound Boundary and Surrounding Vegetation

Attachment A

Attachment A – Section 5A Assessment, Royal National Park, via Greenhaven Drive, Grays Point, NSW (October 2011)

1.1.1 Background

The *Threatened Species Conservation Amendment Act 2002* amended the *EP&A Act 1979* by the identification of seven (7) factors that must be considered when assessing the impacts of a particular proposal on Threatened species, populations and ecological communities. The objective of the Section 5A Assessment is to determine if a proposal is likely to have a *significant effect* on Threatened species, populations or ecological communities, or their habitats. This assessment was undertaken with reference to the Threatened species assessment guidelines — 'The assessment of significance' (DECC 2007).

1.1.2 Definitions

Local Population

The *TSC Act* defines a "local population" as "a population that occurs within the study area, unless the existence of contiguous or proximal occupied habitat and the movement of individuals or exchange of genetic material across the boundary of the study area can be demonstrated" (NPWS, 1996).

The local population of a species in the area of the proposal would be limited to the habitats in the local area, rather than the population residing within the study area. Although some individuals may reside within the study area, populations are generally linked to more extensive tracts of vegetation. For the purposes of this assessment the local population is considered as the population which resides within the subject site and habitats in the local area.

Viability of the Local Population

The Section 5A Assessment requires that a determination be made as to whether the viability of a local population will be compromised by the proposal in question. A viable local population is defined by the NPWS (1996) as "*a population that has the capacity to live, develop and reproduce under normal conditions*". In respect of the proposed clearing, to determine that the local population would be detrimentally affected, it would be necessary to prove that partial removal of the habitat within the study area would affect the life cycles of Subject Species to the extent that local populations may become extinct.

Regional Population

The term region is defined by the *TSC Act* as "a bioregion defined in a national system of bioregionalisation that is determined by the Director-General to be appropriate for those purposes". The study area is situated within the New South Wales Sydney Basin biogeographic region, which extends from the Hunter Valley south to about Nowra and westward to the coastal ranges (Thackway & Cresswell, 1995).

1.1.3 Subject Species

A 'Subject Species, Population or Ecological Community is defined as one which is:

- Listed in Schedules 1-3 under the TSC Act; and
- Either recorded or predicted to occur within the subject site based on site habitats and known species habitats and distribution; and

- Predicted to be impacted upon by the proposal (ie. occurs within an area proposed for disturbance).

A total of 33 Subject Species, Populations and Ecological Communities (10 plant species, 23 fauna species) were subject to the S5A Assessment for the Telstra proposal (refer **Section 5 of main report for a list of relevant Subject Species**).

The Section 5A Assessment is provided below in tablature form and is based on the removal of 57m^2 of native vegetation detailed in the accompanying ecology report prepared by Orogen.

Table A.1 - Section 5A Assessment

Part	Section 5A Criteria	Assessment
a)	*In the case of a Threatened species, whether the action proposed is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction*	The proposed activity is unlikely to have an adverse effect on the life cycle of any of the 33 subject species such that a viable local population is likely to be placed at risk of extinction. The removal of 57.5 m^2 of Sydney Sandstone Ridgetop Woodland/Open Heath/Open Scrub is considered 'negligible' in the context of the habitat available in the local conservation reserves and de facto reserves. None of the 33 subject species would be expected to be exclusively reliant on the 57.5 m^2 of Sydney Sandstone Ridgetop Woodland/Open Heath/Open Scrub proposed for removal on the site.
b)	*In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction;*	Not Applicable. There will be no impact to any listed Endangered Populations.
c)	*In the case of a critically endangered or endangered ecological community, whether the action proposed:*	
	i) Is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or	Not Applicable. There will be no impact to any listed EECs.
	ii) Is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction;	Not Applicable. There will be no impact to any listed EECs.
d)	*In relation to the habitat of a threatened species, population or ecological community:*	
	i) The extent to which habitat is likely to be removed or modified as a result of the action proposed, and	Refer (a)
	ii) Whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and	No areas of habitat will become fragmented or isolated from other areas of habitat as a result of the proposed activity.
	iii) The importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.	Refer (a)

Table A.1 - Section 5A Assessment

Part	Section 5A Criteria	Assessment
e)	***Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly);***	The proposed activity will not have an adverse effect on critical habitat.
f)	***Whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan;***	The removal of any potential habitat may not be considered consistent with particular objects of some recovery plans. Despite this, the habitat proposed to be removed is not considered a significant area (in terms of size and importance) for any of the subject species.
g)	***Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process;***	
	Anthropogenic climate change	The use of machinery during construction and clearing of some vegetation will make a contribution to anthropogenic climate change through release of stored carbon from vegetation and greenhouse gas emissions associated with use of fossil fuels. The clearing of vegetation will also reduce the vegetation available for Carbon dioxide cycling.
	Clearing of native vegetation	The removal of 57.5 m^2 of Sandstone Ridgetop Woodland/Heath/Scrub intergrade will contribute to this KTP albeit to a minor extent.
	Bushrock removal	The proposal would be likely to involve the relocation of small outcrops of bushrock to adjoining (retained) woodland habitats for use as ground debris.
	Infection of native plants by Phytophthora cinnamomi	All Contractors would be inducted with a personal and vehicle hygiene protocol to minimise the likelihood of introducing plant pathogens to the site.
	Introduction and establishment of exotic rust fungi on plants of the family Myrtaceae	As above.
	Invasion and/or establishment of Native Plant Communities by Lantana camara*, exotic perennial grasses, and exotic vines and scramblers	The proposed clearing of vegetation would not be expected to provide opportunities for KTP listed weed species becoming established within or adjoining the clearing areas as once skeletal soils are removed with the vegetation, few weeds can successfully colonise bedrock without a soil horizon.
	The remaining KTP's listed by Schedule 3 the *TSC Act* are not considered relevant to the proposed activity.	

1.2 Conclusion

Based on information provided in Table A.1, it is concluded that the proposed activity is unlikely to have a significant effect on Threatened species, populations or ecological communities, or their habitats. The preparation of a Species Impact Statement is therefore not required for the proposed activity.

Attachment B

Australian Government
Department of Sustainability, Environment, Water, Population and Communities

EPBC Act Protected Matters Report: Coordinates

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information about the EPBC Act including significance guidelines, forms and application process details can be found at http://www.environment.gov.au/epbc/assessmentsapprovals/index.html

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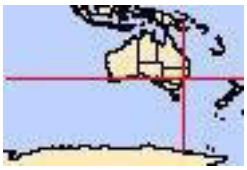

This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2010

Coordinates
Buffer: 10.0Km

Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance - see http://www.environment.gov.au/epbc/assessmentsapprovals/guidelines/index.html.

World Heritage Properties:	None
National Heritage Places:	2
Wetlands of International Significance (Ramsar Wetlands):	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Areas:	None
Threatened Ecological Communitites:	2
Threatened Species:	57
Migratory Species:	61

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place and the heritage values of a place on the Register of the National Estate. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage/index.html

Please note that the current dataset on Commonwealth land is not complete. Further information on Commonwealth land would need to be obtained from relevant sources including Commonwealth agencies, local agencies, and land tenure maps.

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species. Information on EPBC Act permit requirements and application forms can be found at http://www.environment.gov.au/epbc/permits/index.html.

Commonwealth Lands:	12
Commonwealth Heritage Places:	2
Listed Marine Species:	82
Whales and Other Cetaceans:	11

Critical Habitats:	None
Commonwealth Reserves:	None

Report Summary for Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

Place on the RNE:	37
State and Territory Reserves:	7
Regional Forest Agreements:	None
Invasive Species:	18
Nationally Important Wetlands:	1

Details

Matters of National Environmental Significance

National Heritage Places [Resource Information]

Name	Status
Natural	
Royal National Park and Garawarra State	Listed place
Historic	
Kamay Botany Bay NSW	Nominated place

Wetlands of International Significance (RAMSAR Sites) [Resource Information]

Name	Proximity
Towra point nature reserve	Within Ramsar site

Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Name	Status	Type of Presence
Littoral Rainforest and Coastal Vine Thickets of Eastern Australia	Critically Endangered	Community likely to occur within area
Turpentine-Ironbark Forest in the Sydney Basin Bioregion	Critically Endangered	Community likely to occur within area

Threatened Species [Resource Information]

Name	Status	Type of Presence
BIRDS		
Anthochaera phrygia Regent Honeyeater [82338]	Endangered	Species or species habitat likely to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area

Diomedea exulans antipodensis Antipodean Albatross [82269]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans gibsoni Gibson's Albatross [82271]	Vulnerable	Species or species habitat may occur within area
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area
Lathamus discolor Swift Parrot [744]	Endangered	Species or species habitat likely to occur within area
Macronectes giganteus Southern Giant-Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant-Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat may occur within area
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Vulnerable	Species or species habitat may occur within area
Sternula nereis nereis Fairy Tern (Australian) [82950]	Vulnerable	Species or species habitat known to occur within area
Thalassarche bulleri Buller's Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta cauta Shy Albatross, Tasmanian Shy Albatross [82345]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta salvini Salvin's Albatross [82343]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta steadi White-capped Albatross [82344]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris impavida Campbell Albatross [82449]	Vulnerable	Species or species habitat may occur within area
FISH		
Prototroctes maraena Australian Grayling [26179]	Vulnerable	Species or species habitat likely to occur within area
FROGS		
Heleioporus australiacus Giant Burrowing Frog [1973]	Vulnerable	Species or species habitat likely to occur within area
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat likely to occur within area
Litoria littlejohni		

Littlejohn's Tree Frog, Heath Frog [64733]	Vulnerable	Species or species habitat may occur within area
Litoria raniformis		
Growling Grass Frog, Southern Bell Frog, Green and Golden Frog, Warty Swamp Frog [1828]	Vulnerable	Species or species habitat may occur within area
Mixophyes balbus		
Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat likely to occur within area
MAMMALS		
Chalinolobus dwyeri		
Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat may occur within area
Dasyurus maculatus maculatus (SE mainland population)		
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat may occur within area
Eubalaena australis		
Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area
Isoodon obesulus obesulus		
Southern Brown Bandicoot [68050]	Endangered	Species or species habitat likely to occur within area
Megaptera novaeangliae		
Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Petrogale penicillata		
Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area
Potorous tridactylus tridactylus		
Long-nosed Potoroo (SE mainland) [66645]	Vulnerable	Species or species habitat may occur within area
Pseudomys novaehollandiae		
New Holland Mouse [96]	Vulnerable	Species or species habitat known to occur within area
Pteropus poliocephalus		
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
PLANTS		
Acacia bynoeana		
Bynoe's Wattle, Tiny Wattle [8575]	Vulnerable	Species or species habitat likely to occur within area
Acacia pubescens		
Downy Wattle, Hairy Stemmed Wattle [18800]	Vulnerable	Species or species habitat likely to occur within area
Astrotricha crassifolia		
Thick-leaf Star-hair [10352]	Vulnerable	Species or species habitat likely to occur within area
Caladenia tessellata		
Thick-lipped Spider-orchid,	Vulnerable	Species or species habitat likely to occur within area

Daddy Long-legs [2119]		
Cryptostylis hunteriana		
Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area
Eucalyptus camfieldii		
Camfield's Stringybark [15460]	Vulnerable	Species or species habitat likely to occur within area
Grevillea parviflora subsp. parviflora		
Small-flower Grevillea [64910]	Vulnerable	Species or species habitat likely to occur within area
Melaleuca biconvexa		
Biconvex Paperbark [5583]	Vulnerable	Species or species habitat may occur within area
Melaleuca deanei		
Deane's Melaleuca [5818]	Vulnerable	Species or species habitat likely to occur within area
Pimelea curviflora var. curviflora		
[4182]	Vulnerable	Species or species habitat likely to occur within area
Prostanthera densa		
Villous Mintbush [12233]	Vulnerable	Species or species habitat likely to occur within area
Pterostylis saxicola		
Sydney Plains Greenhood [64537]	Endangered	Species or species habitat known to occur within area
Syzygium paniculatum		
Magenta Lilly Pilly, Magenta Cherry, Pocket-less Brush Cherry, Scrub Cherry, Creek Lilly Pilly, Brush Cherry [20307]	Vulnerable	Species or species habitat likely to occur within area
Thelymitra sp. Kangaloon (D.L.Jones 18108)		
Kangaloon Sun-orchid [81971]	Critically Endangered	Species or species habitat may occur within area
Thesium australe		
Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area
REPTILES		
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
Hoplocephalus bungaroides		
Broad-headed Snake [1182]	Vulnerable	Species or species habitat likely to occur within area
Natator depressus		

Flatback Turtle [59257]	Vulnerable	Species or species habitat likely to occur within area
SHARKS		
Carcharias taurus (east coast population)		
Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Species or species habitat may occur within area
Carcharodon carcharias		
Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Pristis zijsron		
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat may occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

Migratory Species [Resource Information]

Name	Status	Type of Presence
Migratory Marine Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat may occur within area
Ardea alba		
Great Egret, White Egret [59541]		Species or species habitat may occur within area
Ardea ibis		
Cattle Egret [59542]		Species or species habitat may occur within area
Diomedea antipodensis		
Antipodean Albatross [64458]	Vulnerable*	Species or species habitat may occur within area
Diomedea gibsoni		
Gibson's Albatross [64466]	Vulnerable*	Species or species habitat may occur within area
Macronectes giganteus		
Southern Giant-Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli		
Northern Giant-Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Sterna albifrons		
Little Tern [813]		Species or species habitat may occur within area
Thalassarche bulleri		
Buller's Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta (sensu stricto)		
Shy Albatross, Tasmanian Shy Albatross [64697]	Vulnerable*	Species or species habitat may occur within area
Thalassarche impavida		
Campbell Albatross [64459]	Vulnerable*	Species or species habitat may occur within area
Thalassarche salvini		
Salvin's Albatross [64463]	Vulnerable*	Species or species habitat may occur within area
Thalassarche steadi		
White-capped Albatross [64462]	Vulnerable*	Species or species habitat may occur within area
Migratory Marine Species		
Balaenoptera edeni		
Bryde's Whale [35]		Species or species habitat may occur within area
Caperea marginata		
Pygmy Right Whale [39]		Species or species habitat may occur within area
Carcharodon carcharias		

Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
Eubalaena australis		
Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area
Lagenorhynchus obscurus		
Dusky Dolphin [43]		Species or species habitat may occur within area
Lamna nasus		
Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area
Megaptera novaeangliae		
Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Species or species habitat likely to occur within area
Orcinus orca		
Killer Whale, Orca [46]		Species or species habitat may occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Migratory Terrestrial Species		
Haliaeetus leucogaster		
White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Hirundapus caudacutus		
White-throated Needletail [682]		Species or species habitat may occur within area
Merops ornatus		
Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis		
Black-faced Monarch [609]		Breeding may occur within area
Myiagra cyanoleuca		
Satin Flycatcher [612]		Breeding likely to occur within area
Neophema chrysogaster		
Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat may occur within area
Rhipidura rufifrons		
Rufous Fantail [592]		Breeding may occur within area
Xanthomyza phrygia		
Regent Honeyeater [430]	Endangered*	Species or species habitat likely to occur within area
Migratory Wetlands Species		

Actitis hypoleucos Common Sandpiper [59309]	Foraging, feeding or related behaviour known to occur within area
Ardea alba Great Egret, White Egret [59541]	Species or species habitat may occur within area
Ardea ibis Cattle Egret [59542]	Species or species habitat may occur within area
Arenaria interpres Ruddy Turnstone [872]	Foraging, feeding or related behaviour known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Foraging, feeding or related behaviour known to occur within area
Calidris alba Sanderling [875]	Foraging, feeding or related behaviour known to occur within area
Calidris canutus Red Knot, Knot [855]	Foraging, feeding or related behaviour known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Foraging, feeding or related behaviour known to occur within area
Calidris ruficollis Red-necked Stint [860]	Foraging, feeding or related behaviour known to occur within area
Calidris tenuirostris Great Knot [862]	Foraging, feeding or related behaviour known to occur within area
Charadrius bicinctus Double-banded Plover [895]	Foraging, feeding or related behaviour known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Foraging, feeding or related behaviour known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Foraging, feeding or related behaviour known to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]	Foraging, feeding or related behaviour known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Foraging, feeding or related behaviour may occur within area
Heteroscelus brevipes Grey-tailed Tattler [59311]	Foraging, feeding or related behaviour known to occur within area
Limicola falcinellus Broad-billed Sandpiper [842]	Foraging, feeding or related behaviour known to occur within area

Limosa lapponica Bar-tailed Godwit [844]		Foraging, feeding or related behaviour known to occur within area
Limosa limosa Black-tailed Godwit [845]		Foraging, feeding or related behaviour known to occur within area
Numenius madagascariensis Eastern Curlew [847]		Foraging, feeding or related behaviour known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Foraging, feeding or related behaviour likely to occur within area
Numenius phaeopus Whimbrel [849]		Foraging, feeding or related behaviour known to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Foraging, feeding or related behaviour known to occur within area
Pluvialis squatarola Grey Plover [865]		Foraging, feeding or related behaviour known to occur within area
Rostratula benghalensis s. lat. Painted Snipe [889]	Vulnerable*	Species or species habitat may occur within area
Xenus cinereus Terek Sandpiper [59300]		Foraging, feeding or related behaviour known to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land - Director of War Service Homes
Commonwealth Land - Australian Postal Commission
Commonwealth Land - Telstra Corporation Limited
Commonwealth Land - Australian & Overseas Telecommunications Corporation
Commonwealth Land - Commonwealth Trading Bank of Australia
Commonwealth Land - Australian Nuclear Science & Technology Organisation
Defence - SUTHERLAND MULTI-USER DEPOT
Commonwealth Land - Australian Postal Corporation
Commonwealth Land - Defence Housing Authority
Commonwealth Land - Australian Telecommunications Commission
Commonwealth Land -
Commonwealth Land - Defence Service Homes Corporation

Commonwealth Heritage Places [Resource Information]

Name	Status
Indigenous	
Cubbitch Barta National Estate Area NSW	Listed place
Historic	

Cronulla Post Office NSW Nominated place

Listed Marine Species [Resource Information]

Name	Status	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Foraging, feeding or related behaviour known to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat may occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat may occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Arenaria interpres Ruddy Turnstone [872]		Foraging, feeding or related behaviour known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Foraging, feeding or related behaviour known to occur within area
Calidris alba Sanderling [875]		Foraging, feeding or related behaviour known to occur within area
Calidris canutus Red Knot, Knot [855]		Foraging, feeding or related behaviour known to occur within area
Calidris ferruginea Curlew Sandpiper [856]		Foraging, feeding or related behaviour known to occur within area
Calidris ruficollis Red-necked Stint [860]		Foraging, feeding or related behaviour known to occur within area
Calidris subminuta Long-toed Stint [861]		Foraging, feeding or related behaviour known to occur within area
Calidris tenuirostris Great Knot [862]		Foraging, feeding or related behaviour known to occur within area
Charadrius bicinctus Double-banded Plover [895]		Foraging, feeding or related behaviour known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]		Foraging, feeding or related behaviour known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]		Foraging, feeding or related behaviour known to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Foraging, feeding or related behaviour known to occur within area
Charadrius veredus		

Oriental Plover, Oriental Dotterel [882]		Foraging, feeding or related behaviour known to occur within area
Diomedea antipodensis		
Antipodean Albatross [64458]	Vulnerable*	Species or species habitat may occur within area
Diomedea gibsoni		
Gibson's Albatross [64466]	Vulnerable*	Species or species habitat may occur within area
Gallinago hardwickii		
Latham's Snipe, Japanese Snipe [863]		Foraging, feeding or related behaviour may occur within area
Gallinago megala		
Swinhoe's Snipe [864]		Foraging, feeding or related behaviour likely to occur within area
Gallinago stenura		
Pin-tailed Snipe [841]		Foraging, feeding or related behaviour likely to occur within area
Haliaeetus leucogaster		
White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Heteroscelus brevipes		
Grey-tailed Tattler [59311]		Foraging, feeding or related behaviour known to occur within area
Heteroscelus incanus		
Wandering Tattler [59547]		Foraging, feeding or related behaviour known to occur within area
Himantopus himantopus		
Black-winged Stilt [870]		Foraging, feeding or related behaviour known to occur within area
Hirundapus caudacutus		
White-throated Needletail [682]		Species or species habitat may occur within area
Lathamus discolor		
Swift Parrot [744]	Endangered	Species or species habitat likely to occur within area
Limicola falcinellus		
Broad-billed Sandpiper [842]		Foraging, feeding or related behaviour known to occur within area
Limosa lapponica		
Bar-tailed Godwit [844]		Foraging, feeding or related behaviour known to occur within area
Limosa limosa		
Black-tailed Godwit [845]		Foraging, feeding or related behaviour known to occur within area
Macronectes giganteus		
Southern Giant-Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli		
Northern Giant-Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Merops ornatus		
Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis		
Black-faced Monarch [609]		Breeding may occur within area
Myiagra cyanoleuca		
Satin Flycatcher [612]		Breeding likely to occur within area

Neophema chrysogaster		
Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat may occur within area
Numenius madagascariensis		
Eastern Curlew [847]		Foraging, feeding or related behaviour known to occur within area
Numenius minutus		
Little Curlew, Little Whimbrel [848]		Foraging, feeding or related behaviour likely to occur within area
Numenius phaeopus		
Whimbrel [849]		Foraging, feeding or related behaviour known to occur within area
Pluvialis fulva		
Pacific Golden Plover [25545]		Foraging, feeding or related behaviour known to occur within area
Pluvialis squatarola		
Grey Plover [865]		Foraging, feeding or related behaviour known to occur within area
Recurvirostra novaehollandiae		
Red-necked Avocet [871]		Foraging, feeding or related behaviour known to occur within area
Rhipidura rufifrons		
Rufous Fantail [592]		Breeding may occur within area
Rostratula benghalensis s. lat.		
Painted Snipe [889]	Vulnerable*	Species or species habitat may occur within area
Sterna albifrons		
Little Tern [813]		Species or species habitat may occur within area
Thalassarche bulleri		
Buller's Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta (sensu stricto)		
Shy Albatross, Tasmanian Shy Albatross [64697]	Vulnerable*	Species or species habitat may occur within area
Thalassarche impavida		
Campbell Albatross [64459]	Vulnerable*	Species or species habitat may occur within area
Thalassarche salvini		
Salvin's Albatross [64463]	Vulnerable*	Species or species habitat may occur within area
Thalassarche steadi		
White-capped Albatross [64462]	Vulnerable*	Species or species habitat may occur within area
Xenus cinereus		
Terek Sandpiper [59300]		Foraging, feeding or related behaviour known to occur within area
Fish		
Acentronura tentaculata		
Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area
Festucalex cinctus		
Girdled Pipefish [66214]		Species or species habitat may occur within area
Filicampus tigris		
Tiger Pipefish [66217]		Species or species habitat may occur within area
Heraldia nocturna		
Upside-down Pipefish, Eastern		Species or species habitat may occur within area

Upside-down Pipefish, Eastern Upside-down Pipefish [66227]	
Hippichthys penicillus	
Beady Pipefish, Steep-nosed Pipefish [66231]	Species or species habitat may occur within area
Hippocampus abdominalis	
Bigbelly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]	Species or species habitat may occur within area
Hippocampus whitei	
White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Species or species habitat may occur within area
Histiogamphelus briggsii	
Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]	Species or species habitat may occur within area
Lissocampus runa	
Javelin Pipefish [66251]	Species or species habitat may occur within area
Maroubra perserrata	
Sawtooth Pipefish [66252]	Species or species habitat may occur within area
Notiocampus ruber	
Red Pipefish [66265]	Species or species habitat may occur within area
Phyllopteryx taeniolatus	
Common Seadragon, Weedy Seadragon [66268]	Species or species habitat may occur within area
Solegnathus spinosissimus	
Spiny Pipehorse, Australian Spiny Pipehorse [66275]	Species or species habitat may occur within area
Solenostomus cyanopterus	
Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]	Species or species habitat may occur within area
Solenostomus paegnius	
Rough-snout Ghost Pipefish [68425]	Species or species habitat may occur within area
Solenostomus paradoxus	
Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]	Species or species habitat may occur within area
Stigmatopora argus	
Spotted Pipefish, Gulf Pipefish [66276]	Species or species habitat may occur within area
Stigmatopora nigra	
Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]	Species or species habitat may occur within area
Syngnathoides biaculeatus	
Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]	Species or species habitat may occur within area
Trachyrhamphus bicoarctatus	
Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish	Species or species habitat may occur within area

[66280]
Urocampus carinirostris
Hairy Pipefish [66282] Species or species habitat may occur within area
Vanacampus margaritifer
Mother-of-pearl Pipefish [66283] Species or species habitat may occur within area

Mammals

Arctocephalus forsteri
New Zealand Fur-seal [20] Species or species habitat may occur within area
Arctocephalus pusillus
Australian Fur-seal, Australo-African Fur-seal [21] Species or species habitat may occur within area

Reptiles

Caretta caretta
Loggerhead Turtle [1763] Endangered Species or species habitat likely to occur within area

Chelonia mydas
Green Turtle [1765] Vulnerable Species or species habitat known to occur within area

Dermochelys coriacea
Leatherback Turtle, Leathery Turtle, Luth [1768] Endangered Species or species habitat likely to occur within area
Eretmochelys imbricata
Hawksbill Turtle [1766] Vulnerable Species or species habitat likely to occur within area

Natator depressus
Flatback Turtle [59257] Vulnerable Species or species habitat likely to occur within area

Pelamis platurus
Yellow-bellied Seasnake [1091] Species or species habitat may occur within area

Whales and Other Cetaceans [Resource Information]

Name	Status	Type of Presence

Mammals

Balaenoptera acutorostrata
Minke Whale [33] Species or species habitat may occur within area
Balaenoptera edeni
Bryde's Whale [35] Species or species habitat may occur within area
Caperea marginata
Pygmy Right Whale [39] Species or species habitat may occur within area
Delphinus delphis
Common Dophin, Short-beaked Common Dolphin [60] Species or species habitat may occur within area
Eubalaena australis
Southern Right Whale [40] Endangered Species or species habitat known to occur within area

Grampus griseus
Risso's Dolphin, Grampus [64] Species or species habitat may occur within area
Lagenorhynchus obscurus
Dusky Dolphin [43] Species or species habitat may occur within area
Megaptera novaeangliae
Humpback Whale [38] Vulnerable Species or species habitat known to occur within area

Orcinus orca Killer Whale, Orca [46]	Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]	Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]	Species or species habitat may occur within area

Extra Information

Places on the RNE **[Resource Information]**

Note that not all Indigenous sites may be listed.

Name	Status
Natural	
Bundeena Headland NSW	Indicative Place
Georges River Wetlands NSW	Indicative Place
Prince Edward Park NSW	Indicative Place
Shiprock Aquatic Reserve NSW	Indicative Place
Heathcote National Park NSW	Registered
Kurnell Peninsula Towra Point Area NSW	Registered
Marley Lagoon Basin NSW	Registered
Royal National Park (1977 boundary) NSW	Registered
Towra Point Aquatic Reserve NSW	Registered
Indigenous	
Gymea Bay Rock Shelter NSW	Indicative Place
Cubbitch Barta National Estate Area NSW	Registered
Curracurrang Area NSW	Registered
Uloola Area NSW	Registered
Woronora Area NSW	Registered
Historic	
Carss Bush Park Pool NSW	Indicative Place
Carss Park Urban Conservation Area NSW	Indicative Place
Como Pleasure Grounds NSW	Indicative Place
Como Tidal Pool NSW	Indicative Place
Connells Point Pool Remnants NSW	Indicative Place
Cronulla Beach Pool NSW	Indicative Place
Cronulla Main Ocean Pool NSW	Indicative Place
Cronulla Post Office NSW	Indicative Place
Cronulla Rock Pool NSW	Indicative Place
Gunnamatta Park Baths NSW	Indicative Place
Heathcote Railway Residences NSW	Indicative Place
Illawarra Aerial Telegraph Line NSW	Indicative Place
Lilli Pilli Baths NSW	Indicative Place
Lyons House NSW	Indicative Place
Oatley Park Pool NSW	Indicative Place
Oatley Urban Conservation Area NSW	Indicative Place
Old St Marks Church NSW	Indicative Place
Penshurst Urban Conservation Area NSW	Indicative Place
Sans Souci Baths Remnants NSW	Indicative Place
Woronora Crematorium NSW	Indicative Place

Woronora General Cemetery NSW	Indicative Place
Bonnie Vale Cabin Community NSW	Registered
Como Rail Bridge NSW	Registered

State and Territory Reserves [Resource Information]

Towra Point, NSW
Shiprock, NSW
Royal, NSW
Georges River, NSW
Towra Point, NSW
Towra Point - Stink Pot Bay, NSW
Heathcote, NSW

Invasive Species [Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Frogs		
Bufo marinus Cane Toad [1772]		Species or species habitat likely to occur within area
Mammals		
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Alternanthera philoxeroides Alligator Weed [11620]		Species or species habitat likely to occur within area
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Cabomba caroliniana Cabomba, Fanwort, Carolina Watershield, Fish Grass, Washington Grass, Watershield, Carolina Fanwort, Common Cabomba [5171]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lantana camara		

Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]	Species or species habitat likely to occur within area
Lycium ferocissimum	
African Boxthorn, Boxthorn [19235]	Species or species habitat may occur within area
Nassella neesiana	
Chilean Needle grass [67699]	Species or species habitat likely to occur within area
Nassella trichotoma	
Serrated Tussock, Yass River Tussock, Yass Tussock, Nassella Tussock (NZ) [18884]	Species or species habitat likely to occur within area
Pinus radiata	
Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]	Species or species habitat may occur within area
Rubus fruticosus aggregate	
Blackberry, European Blackberry [68406]	Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtiji	
Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]	Species or species habitat likely to occur within area
Salvinia molesta	
Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]	Species or species habitat likely to occur within area
Ulex europaeus	
Gorse, Furze [7693]	Species or species habitat likely to occur within area

Nationally Important Wetlands **[Resource Information]**

Towra Point Estuarine Wetlands, NSW

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World Heritage and Register of National Estate properties, Wetlands of International Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from

recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are indicated under 'type of presence'. For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

Only selected species covered by the following provisions of the EPBC Act have been mapped:
- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:
- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:
- non-threatened seabirds which have only been mapped for recorded breeding sites;
- seals which have only been mapped for breeding sites near the Australian continent.

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-34.05755 151.07025

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Department of Environment, Climate Change and Water, New South Wales
-Department of Sustainability and Environment, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment and Natural Resources, South Australia
-Parks and Wildlife Service NT, NT Dept of Natural Resources, Environment and the Arts
-Environmental and Resource Management, Queensland
-Department of Environment and Conservation, Western Australia
-Department of the Environment, Climate Change, Energy and Water
-Birds Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-SA Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium

-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Atherton and Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
-State Forests of NSW
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

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Appendix B

Telecommunication Towers in Bush Fire Prone Areas

Telecommunication Towers in Bush Fire Prone Areas

This Practice Note provides direction on the application of bush fire protection measures to Telecommunication Towers in Bush Fire Prone Areas.

Towers in Bush Fire Prone Areas are critical infrastructure for fire fighting communications and for providing warnings, information and communication channels for people in bush fire prone areas during bush fire emergencies.

Telecommunications sites support wide range of communications services, broadly they are those sites that have infrastructure associated with mobile phones, internet, microwave radio links, trunk mobile radio or private mobile radio (PMR). In some instances, a number of users establish autonomous sites adjacent to one another at the same geographic location. This is variable depending on the size, purpose, complexity and remoteness of the site and could be one hut connected to a shared antenna on a tower alternatively, It could be multiple huts on a location and connected to multiple towers.

As such, a 'precautionary approach' should be taken with respect to critical infrastructure associated with communications during emergencies.

Actions should be taken by owners/ operators to reduce the risk of loss of such infrastructure and associated infrastructure from the effects of bush fire attack.

The asset protection zone is only concerned with the underlying infrastructure required to support such services which are predominately structures and buildings. Essential equipment should be designed and housed in such a way as to minimise the impact of bush fires on the capabilities of the infrastructure to provide communications capability during bush fire emergencies.

When the RFS is asked for comment on new towers or for existing towers, a 10 metre APZ from the tower/ buildings/ infrastructure associated with the tower shall be provided.

Infrastructure does not include:

- road access to the site;
- power or other services to the site;
- associated fencing;

The APZ must be free of surface fuel and elevated fuel and should have minimum canopy.

When RFS provides comments on critical telecommunications infrastructure a recommendation to the owner of the critical infrastructure is made that the materials be designed to withstand 40kWm2 of radiant heat and to withstand ember penetration into the structure and associated infrastructure.

When considering notices to manage fuel, distances should be consistent with the above criteria.

Owners/operators of critical telecommunications infrastructure may accept the risk of loss of the structure from the effects of bush fire.

However, the RFS does not accept loss of such structures as it will have a direct impact on life safety within the fire ground.

Definitions

Critical telecommunications infrastructure is identified in a Bush Fire Risk Management Plan.

A **location** is defined as the area of land which includes one or more co located Telecommunications sites.

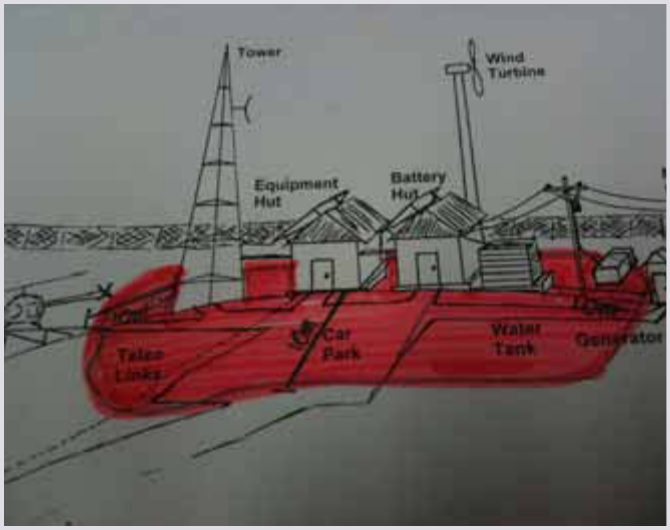

Figure 1: 10 metre APZ from the tower/ buildings/ infrastructure

Appendix C

Site Photos and Montages

Before

PROPOSED TELSTRA FACILITY

After

This is a representation only. The final installation may vary slightly in size,

Rev.	Date	Created	Revision Description
A	15.12.10	ZV	Preliminary

pixelwise
4/35 Morton St
Wollstonecraft
NSW 2065
P: +61 2 9460 2919
F: +61 2 9460 1673
www. pixelwise.com.au

aurecon
116 Military Road
Neutral Bay NSW 2089
P: +61 2 9465 5599
F: +61 2 9465 5598

Site Address
356 Plan MP144 Audley Rd
Royal National Park
Grays Point, NSW 2232

Drawing title
Photomontage View 1

BTS Site Name :
Grays Point

Site Number. :
N109299

Drawing No. :
M01

Telstra

Photographer :

Checker :

Approved :

Date :
15.12.10

REV.
A

PROPOSED TELSTRA FACILITY

Before

After

This is a representation only. The final installation may vary slightly in size,

Rev.	Date	Created	Revision Description
A	15.12.10	ZV	Preliminary

pixelwise
4/35 Morton St
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NSW 2065
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F: +61 2 9460 1673
www. pixelwise.com.au

aurecon
116 Military Road
Neutral Bay NSW 2089
P: +61 2 9465 5599
F: +61 2 9465 5598

Site Address
356 Plan MP144 Audley Rd
Royal National Park
Grays Point, NSW 2232

Drawing title
Photomontage View 2

BTS Site Name :
Grays Point

Site Number. :
N109299

Drawing No. :
M02

Telstra

Photographer :

Checker :

Approved :

Date :
15.12.10

REV.
A

PROPOSED TELSTRA FACILITY

Before

After

This is a representation only. The final installation may vary slightly in size,

Rev.	Date	Created	Revision Description
A	15.12.10	ZV	Preliminary

pixelwise
4/35 Morton St
Wollstonecraft
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www. pixelwise.com.au

aurecon
116 Military Road
Neutral Bay NSW 2089
P: +61 2 9465 5599
F: +61 2 9465 5598

Site Address
356 Plan MP144 Audley Rd
Royal National Park
Grays Point, NSW 2232

Drawing title
Photomontage View 3

BTS Site Name :
Grays Point

Site Number. :
N109299

Drawing No. :
M03

Telstra

Photographer :

Checker :

Approved :

Date :
15.12.10

REV.
A

Appendix D

Construction Details and Risk Assessment

ABN 24 115 000 336
Silcar Communications
Wireless Group
Unit 5, 1 The Crescent
Kingsgrove NSW 2208
Australia

Phone: + 61 2 8577 1200
Facsimile: + 61 2 8577 1222

1 August 2012

Attention: Liz Easton

Site No. 257459 **Site name: Grays Point**

1. Introduction

This report outlines the methodology for constructing a new Telstra mobile communication tower and associated equipment comprising of the following:

- A security fence around compound that measures 6m x10m
- Panel antennas (3off) secured to a concrete monopole which is 35m high.
- A prefabricated shelter (2.2mx3.2mx2.99m high) to house the telecommunications equipment
- A prefabricated concrete monopole that is 35m high and 5.1m below ground.
- Feeder cables (6off) to carry the signal from the pole mounted antennas to the communications equipment – Feeders cables are run inside the pole to avoid unsightly attachments to the pole.

2. Sustainability Measures

The site when up and running is very energy efficient and has nil water usage due to the following features:

- The ground around the compound is cleared from ground vegetation and shrubs as noted on the drawings. The cleared area is finished with 100mm thick layer of gravel on weed matt to control weeds and eliminate the use of herbicide to control weed growth.
- No new plants will be added around the compound which eliminate water usage and reduce the risk from fires propagating from the hut in the low probability event electrical equipment may catch fire.
- The shelter is prefabricated from refrigeration type panels to reduce solar heat gains and thereby minimise air conditioning loads and electrical consumption
- The temperature inside the hut is controlled by three stages of cooling to reduce electrical energy consumption:
    - Stage one is by natural ventilation utilising strategically located vents in the shelter
    - Stage two by the use of high efficiency DC fans when the internal hut temperature raises to between 25 and 28^{O}C and
    - Stage three with cooling only air conditioning unit when the internal hut temperature exceeds 28^{O}C.

- The use of pre-galvanised steel and concrete will minimise onsite maintenance and eliminate the need for painting thereby removing the risk of any chemical contamination from paint spills.
- The pole is constructed from steel re-enforced concrete to give long service life and low maintenance which further eliminates the need to bring heavy vehicles to site after the pole is installed.
- The feeders that carry the signal from the antennas to the communication shelter are made from recycled and raw copper and run inside the pole to improve the aesthetics.
- The monopole pole, shelter and equipment are all constructed from materials which can be recycled at the end of their service life.
- The hut is fitted with batteries that provide 8-hours of back up in the event of mains failure which avoids the need to install standby diesel generators and diesel tanks on site. Batteries are more efficient over their lifecycle and will be recycled at the end of their economic life.
- During construction temporary amenities will be installed on site for use by construction works. These will be removed once the site works are complete.

3. Electrical Power and fibre cable

The electrical power and fibre is brought to site through underground conduits buried in the access track. The conduits are laid in a 750mm deep X 300mm wide trench between the proposed site and Greenhaven road.

Once the conduits and pits are installed, all surfaces will be restored to pristine conditions. The conduits will have spare capacity for future fibre cables to avoid cutting up the access track again.

4. Construction timetable and equipment

The duration of construction period will take about 4-5 weeks from start to finish (assuming fine weather is experienced). All travel to site will be via Greenhaven road, Grays point.

To construct the works will require light weight vans to carry tools, a coring rig, a 60-80 tonne crane and cherry picker to install the new telecommunications tower:

- Flat top trucks to deliver the hut, monopole sections and materials
- The coring rig will be on site for 1 day
- Concrete delivery trucks for 1 day
- the crane will be on site for 5 days in the 5 week period
- Cherry picker will be on site for about 5-7 days in the 5 week period

All construction vehicles and plant will travel to sight via the access road weather permitting. If the road is very wet and soggy, vehicles will not be allowed to use the access track.

The proposed working hours during the construction period will be from 7:00AM to 5:00 PM Monday to Saturday.

5. Materials handling

A drilling rig will be floated to site to make the core hole which is 1500mm dia. by 5000mm deep. All dirt will be recycled for fill where possible depending on the degree of rock encountered.

Two concrete trucks will deliver the required concrete to fill in the pier around the pole butt.

Flat top trucks will be used to deliver the hut, monopole sections, Antenna mounts and materials. A boggy truck will be used to remove the spoil from site and delivery to a waste management depot.

All materials except the pole sections will be stored within the Telstra's compound. The pole sections will be delivered on the day when they will be installed to avoid long term site storage.

All rubbish will be removed from site on a daily basis.

6. Signage

The compound will have construction signs posted during construction to avoid persons wrongly entering the compound and to ensure safe work practices are adhered to.

At completion of the works there will be Telstra standard radiation Hazard and private property sign around the compound.

7. Remediation

The site will be left in a clean state with rubbish all removed from site and workmanship carried out to meet Australian Standards and local authority requirements.

The access track will be repaired were damaged by heavy vehicles and left in good conditions.

All trees and shrubs will not be disturbed unless by approval as per the approved drawings and DA conditions.

The compound will be surfaced with a 100mm thick gravel layer to provide natural water drainage, prevent weed growth and provide a safe all weather access around the telecommunications equipment.

Billy Mikhael
Project Specialist
Wireless Group
Silcar Communications

SILCAR Communications

SWMS / RISK ASSESSMENT RECORD

Assessment of	Construction of New Telstra RBS Site	Next Review Date	**TBA**	**Ref No.**	Grayspoint-SWMS01
Personnel Consulted	Billy Mikhael			Date	26/3/12
Evaluation Personnel Consulted	Roger Shallow, Darren Dacich			Date	26/3/12
Approved by	Billy Mikhael	Position	Project Specialist	Signed	*Billy Mikhael*
				Date	27/3/12

Updated due to: Legislation Change ☐ Incident ☐ Procedural Change ☐ Other *specify* _____

Remember to:

- *Inspect the site and surrounds*
- *consider not only your normal operation but others in your work space*
- *talk to people who work with you*
- *consider environment considerations, extremes in weather, wind, rain, heat*
- *use the risk rating matrix & hierarchy of controls to minimize hazards*

Additional hazards are listed in the Prompt Sheet at the end of this document

Think Incident Free!

WORK SAFELY – consider these 4 points!

PLANNING	PROPER TOOLS & EQUIPMENT
I do understand the task and how to perform it I have identified all associated hazards I have considered all safe work practices that apply to this task Do I need help to do this work safely?	I've the correct tool(s) & equipment to complete the task I've checked if tools / /equipment are in good working condition? I have the correct PPE I needed All electrical tools are correctly tagged
TRAINING	**STATE OF MIND**
I am trained to use the equipment and/or tools required? I have be deemed competent to do this work I understand the SOP / JSA for this task	**I will stay out of the line of fire!** I will give my full attentions to the task I will stop & redo my plan if something unforeseen happens? I am meeting or exceeding safety for this task

Risk Rating Matrix

Consequence → / Likelihood ↓	**Low (C1)** Near Hit with NO injury, but potential to cause injury Environmental incident with potential to damage the environment but with NO actual damage	**Minor (C2)** Minor Injury requiring first aid treatment, cuts/bruises (no stitches required), minor burns Minor Environmental release. Impact immediately managed or contained	**Moderate (C3)** Medical Treatment Injury recovery is likely, broken bones, stitches, burns requiring medical attention Environmental release with moderate detrimental effects requiring remedial action, reportable to authorities	**Major (C4)** Lost Time Injury, hospitalisation, permanent disability, serious internal and/or head injuries Environmental non-permanent impact with major detrimental effects	**Critical (C5)** Fatality or permanent disability to ten or more people Environmental permanent & significant impact in significant areas
Rare (L1) The event will occur only in exceptionally rare circumstances	**L2**	**L3**	**L4**	**M5**	**M6**
Unlikely (L2) The event may occur at some time but is unlikely to do so	**L3**	**L4**	**M5**	**M6**	**H7**
Possible (L3) The event could occur	**L4**	**M5**	**M6**	**H7**	**H8**
Likely (L4) The event will occur in most circumstances and is likely to do so	**M5**	**M6**	**H7**	**H8**	**E9**
Almost certain (L5) The event will almost certainly occur	**M6**	**H7**	**H8**	**E9**	**E10**

SWMS / RISK ASSESSMENT RECORD

Description of Task	**Construct new Telstra RBS in Gray's Point – Located in National Park**

Assessment							**Treatment Actions**					
Item	Activities *All steps and conditions*	Possible Hazard *Problem*	Risks / Impacts *Harm*	Initial Risk			Risk Control/Treatment *What will be done to make it safe?*	Personnel Responsible *Who will make it happen?*	Completion *Date and sign off*	Residual Risk		
				L	C	S				L	C	S
1.	Preliminary activities	• Unaware of site conditions /rules concerning work in NSW National parks and wildlife services • Unaware of project scope, NSW National Parks and wildlife services and council requirements	• Injury to persons and/or damage to property. • Unauthorised entry to areas causing damage. • Unauthorised works occurring putting people in danger.	2	2	L4	• Read Permit conditions • Induct all potential staff and visitors who will be expected to visit site • Advise of all site conditions and any permit conditions • Nominate appropriate PPE to be worn (long pants, safety boots, long sleeve shirt, hard hats, gloves, eye wear) • Work within Lease area only • Toolbox weekly to advise of safety and rules •	Contractor TBA Aurecon Parks and wild life protection officer		1	2	L3
2.	Confirm all construction certificates and insurances are available	• Workers conducting works without any licences, permits or certificates to carry out appropriate task. • Workers conducting works without any insurance protection	• Non-licenced workers can incur major fines and cause works to stop. • No insurance protection can cause large financial loss to stakeholders especially should a major incident occur.	2	3	M5	• Elimination: Non licenced workers cannot work on site. Insurance certificates must be available before works commence on site. • Substitution: Replace non-qualified contractors with more suitable and qualified contractors. • Admin: Ensure all necessary licence, Green card, permits and other trade certificates as well as any insurance certificates are available prior to commencement of works.	Contractor TBA Aurecon Telstra		1	3	L4

SILCAR Communications

SWMS / RISK ASSESSMENT RECORD

Description of Task	**Construct new Telstra RBS in Gray's Point – Located in National Park**

Assessment							**Treatment Actions**					
Item	Activities *All steps and conditions*	Possible Hazard *Problem*	Risks / Impacts *Harm*	Initial Risk			Risk Control/Treatment *What will be done to make it safe?*	Personnel Responsible *Who will make it happen?*	Completion *Date and sign off*	Residual Risk		
				L	C	S				L	C	S
3.	Mobilise to site	• Vehicular collisions • Physical injury • Equipment damage • Property damage • Logistics • Local Flora and Fauna	• Persons being injured during delivery of materials to site • Damage to surrounding property • Poor vehicle used for the available access • allergies plants and insects • animal bites	2	2	L4	• Eliminate: Reduce the amount of travel required, plan and combine visits. • Engineer: Purchase / hire appropriate safe vehicles (Air bags, 4-wheel drive). Provide hands-free mobiles. • Admin: Driver safety to be given during induction training. Talking on the phone is to be avoided. Make calls only when parked, use rest stops or service areas in preference to parking at road side. Minimise duration of phone calls received on hands free. • PPE: Boots, gloves, hard hat, High visibility vests, insect repellent, harness • Plan what materials need to move to site and ensure that correct truck and vehicles are available for the road conditions • Check medical history of all staff to confirm if free of allergies • Document action plan to respond animal bites	Contractor TBA		1	2	L3

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Description of Task	**Construct new Telstra RBS in Gray's Point – Located in National Park**

Assessment							**Treatment Actions**					
Item	Activities *All steps and conditions*	Possible Hazard *Problem*	Risks / Impacts *Harm*	Initial Risk			Risk Control/Treatment *What will be done to make it safe?*	Personnel Responsible *Who will make it happen?*	Completion *Date and sign off*	Residual Risk		
				L	C	S				L	C	S
4.	Site establishment and set out	• Slips, trips • falls from height, • minor cuts and abrasions • Manual Handling • Incorrect tools for task at hand	• Injury to persons • Damage to surroundings	2	2	L4	• Eliminate: Barricades to be used where necessary. • Admin: Ensure all staff are site inducted and are aware of site specific hazards and adequately trained to complete task at hand. • PPE: All staff to use appropriate Boots, gloves, hard hat, High visibility vests, insect repellent, harness	Contractor TBA		1	2	L3
5.	Lifting and Carrying	• Crush injury • Manual handling • Dropped loads	• Severe body injury/Death • Back & shoulder injuries • Muscular problems • Strains and sprains • Foot injuries	3	4	H7	• Eliminate: • Substitute: Subcontractor to use mechanical lifting equipment • Engineer: Subcontractor to consider sorting Equipment / material to in sizes which can be carried safely by personnel. • Admin: Training is to be provided. See Manual Handling procedure • PPE: Steel toe capped boots, Gloves to be used, dependent on the item being lifted.	Contractor TBA		1	4	M5

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				L	C	S				L	C	S
6.	Construction work in National parks areas	• Workers and hikers entering the National Park • EWP / crane overturning • Excavated materials being washed into the streams • Cigarette Smoking	• Bush fire • Damage access road and put public at risk. • Cause fire and put environment, animal life at risk • Discarded cigarette butts ignite brush and grass	2	4	M6	• Eliminate: setup crane/EWP in position such that it will not overturn • Eliminate: enforce no smoking policy while in National parks area • Substitute: Alternatively setup crane/EWP in position to minimise risk of overturning. • Substitute: Where the forecast is for a catastrophic fire danger, liaise with Manager /Supervisor to reschedule the job where possible. • Engineer: apply Geotech certificate and report for loading capacity of surrounding and setup areas. • Admin: Site specific induction incorporating hazards relating access track and natural work area. • PPE: Any workers around crane to have safety boots, hard hats, high vis vests, insect repellent. • Provide all with fire training and the use of fire extinguishers	Contractor TBA		1	4	M5

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				L	C	S				L	C	S
7.	Working at height, unprotected edge, from EWP or ladder.	• Fall from height • Falling objects (See Working outdoors)	• Physical injury • Disablement • Death	3	4	H7	• Eliminate: Subcontractor is to consider completing work on the ground to reduce time spent at height • Substitute: Subcontractor is to consider the use of EWP. • Engineer: Use all approved EWP or ladders that have been inspected and tested. • Admin: Subcontractor is to ensure: Qualified riggers are only personnel allowed to climb / work on towers; Tools are to be secured with lanyard to prevent failing; Area under the work is to be barricaded to prevent thoroughfare; If fall arrest system is used, ensure trained rescue personnel are on standby. Site induction to include WAH & fall arrest requirements. • PPE: Boots with grip, high visibility vest, fall arrest equipment, Hard hats with chin strap, insect repellent	Contractor TBA		1	4	M5

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				L	C	S				L	C	S
8.	Mark out new slab footing, trenches and general site layout for Telstra compound	• Sharps branches • Slips, trips • Incorrect tools for task at hand • Damage to surrounding	• minor cuts and abrasions • Damage to surroundings • Injury to persons	2	2	L4	• Substitute: Do not use hazardous markers, which could damage environment. MSDS for line marking paint to be kept in MSDS information pack. • Engineer: Barricades to be used around work area and where necessary. • Admin: Ensure all staff are site inducted and are aware of site specific hazards and adequately trained to complete task at hand. Check for uneven ground and rocks where appropriate. • PPE: Wear appropriate safety gear (boots long pants, gloves, mask, etc…)	Contractor TBA		1	2	L3
9.	Remove/trim tree branches	• Fall from heights • Physical injury • Equipment/property damage • Slips/trips	• minor cuts and abrasions • Injury to persons • Environmental damage • Property damage	2	3	M5	• Isolate: Barricade surrounding area. • Engineer: Use approved elevation platforms. Use approved cutting tools. • Admin: Put construction signage in work area • PPE: Wear appropriate clothing (boots, gloves, eye wear, long sleeve, insect repellent, pants and shits)	Contractor TBA		1	3	L4

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				L	C	S				L	C	S
10.	Excavation	• Dust / Noise. • Confined space - if more than 1.8 m deep. • Caving in of sides. • Slips and trips. • Falls into excavated pier. • Manual handling • Faulty machinery	• Physical injury to hikers and staff • Property damage • Environmental damage	2	4	M6	• Eliminate: Conduct a dial before you dig. Conduct surface scan of area for underground services. • Eliminate: Keep plant well maintained • Isolate: Use barricades around work area especially the pole pier. • Engineer: Site excavation to avoid existing services where possible. Refer to Geotech report to prevent collapse.(Check depth) • Admin: Subcontractor to ensure spoil is piled at least 3m from excavation edge. Remove from site if weather forecast is for rains. Keep vehicles / plant a safe distance away from edges, pump ground water out of the excavation. Use ditches to divert surface water. Do not use portable generators inside excavation. Use artificial lighting if required. Ensure suitable access. Barricade and use signage. Cover all open excavation and barricade. • PPE: Hard hat, steel toe cap boots, high visibility vest, insulated equipment	Contractor TBA		1	4	M5

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				L	C	S				L	C	S
11.	Use of diesel or hazardous chemicals or dangerous goods	• Explosion • Toxic solids, liquids & vapours, fumes	• Physical injury • Burns • poison • Asphyxiation • Death • Environmental impact	2	3	M5	• Eliminate: Avoid using toxic chemicals if other alternative is possible and locate diesel generators well away from flammable materials • Substitute: Subcontractor to select less toxic chemical where possible. • Engineer: Subcontractors to Barriers / ensure Isolation where possible • Admin: Conduct risk assessment for use, storage, transport and environmental impact on each chemical used. Train personnel on mitigation of Hazchem / dangerous goods. Train personnel on emergencies (spill kits). • PPE: gloves, eye protection goggles, Spill kits, Hazchem suit, mask, breathing apparatus; suitable PPE maybe required	Contractor TBA		1	3	L4

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				L	C	S				L	C	S
12.	Pour concrete Slab and Pole footings	• Manual Handling • Slips/trips, cuts and abrasions • Falls from heights • Incorrect tools for task at hand • Excessive concrete • Exposure to concrete	• Injury to persons • Concrete dumped in surroundings • Environmental impact • Asphyxiation • Acid burns	3	3	M6	• Elimination: Use qualified concrete company. • Engineer: Accurately measure concrete amount. Any excessive concrete to be disposed of correctly. • Admin: Mark out position of concrete truck to stop avoiding any concrete spoil outside Telstra boundary. • Provide trip free work zone and barriers to avoid falling in pier full of concrete slurry • Put construction signage in work area • PPE: boots, gloves, high vis vest	Contractor TBA		1	3	L4

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				L	C	S				L	C	S
13.	Connect Electrical services to the supply point and energising hut	• Electrocution • Equipment damage • Manual handling • Working from Heights	• Personal injury • Death • Physical injury • Crush injury • Damage to Telstra equipment property	3	4	H7	• Eliminate: Power down LV power prior to commencing work. Confirm no power with electrical tests meter. • Substitute: Only qualified electrical contractors to carry out isolation works. • Isolate: Use insulation on cables around work area. • Engineer: All EWP, cranes to be reviewed prior to carrying out works. Only qualified personnel to use machine. • Admin: Only Licensed Electricians are allowed to perform electrical work. Check for live cables prior to commencing work – employ level 2 electrical contractor to connect consumer mains at the supply point. Switchboards can have multiple power sources. • Barricade work area. Lockout and tag live electrical circuits. • PPE: Use insulated equipment, fibreglass ladders, Gloves, mat, Safety kit, Harness	Contractor TBA		1	4	M5

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				L	C	S				L	C	S
14.	Lift and position Monopole sections into position.	• Excessive loads • Poor crane setup • Pole falling • Working from heights • Excess rain – poor soil loading capacity	• Major injury /Death • Damage to surrounding environment • Major equipment damage • Physical injury / Crush Injury • Crane tipping over / damaging	4	4	H7	• Only qualified riggers to carry out works. • Engineer: All EWP and crane maintenance records to be reviewed prior to carrying out works. Only qualified personnel to use machine. Use correct lifting procedures and a qualified crane company. • Admin: Barricade work areas to prevent hikers moving into the work zone. Have all permits licences and crane documentation prior to commencement of crane lift. • Check softness of soil prior to crane setup • PPE: Use Gloves, Safety Harness, gloves and glasses	Contractor TBA		1	4	M5

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				L	C	S				L	C	S
15.	Lift and position shelter into position	• Damage to equipment • Manual Handling • Slips/trips	• Personal injury • Damage of Telstra equipment • Cuts and abrasions	3	3	M6	• Isolate: No one to be under load while lifting into position. • Engineering: Use correct crane lifting procedure, appropriate lifting lugs, spreader bar certified for the weight loading. • Admin: Correct manual handling techniques to be used. • PPE: Use appropriate safety gear (boots, gloves, hard hat)	Contractor TBA		1	3	L4
16.	Lift and position Circular headframe and Antenna in position	• Incorrect use of machine • Falls from height • Equipment failure	• Physical injury • Environmental damage • Damage to pole and shelter	2	4	M6	• Isolate: Use barricades around work area. • Engineer: ensure that crane is certified to lift the pole section, headframe and Antenna • Engineer: Use EWP or crane man box in lieu of climbing the pole • Administration: ensure that crane plan is available correctly setup crane. • PPE: Hard hat, steel toe cap boots, high visibility vest	Contractor TBA		1	4	M5

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				L	C	S				L	C	S
17.	Excavate / trench for earth straps	• Physical injury • Slips/trips • Cuts and abrasions • Damage to underground services	• Personal injury • Environmental damage • Interrupt other client services • Environmental damage	3	3	M6	• Substitute: Only trained person to use excavator. Keep excavator within boundary to avoid damage to other compound surroundings. Ensure excavator has current log and maintenance details on site. • Engineer: Barricade surrounding area. Put construction signage in work area. Dispose of spoil correctly. • Admin: Obtain tickets for qualified operators. • PPE: Use appropriate safety gear (boots, gloves high vis vest) •	Contractor TBA		1	3	L4
18.	Install earth rods/straps	• Cuts and abrasions • Slips/trips • Incorrect tools for work at hand	• Personal injury	3	3	M6	• Engineer: Only trained person to install earth straps/rods. Barricade opening to avoid fall hazard. Cover protruding rods while no one working on them. • PPE: Wear appropriate safety gear (boots, gloves)	Contractor TBA		1	3	L4

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				L	C	S				L	C	S
19.	Install feeder cables and tilt cables and Test feeders	• Falls from heights • Damage to equipment • Work around live power	• Major injury due to fall from heights / Death • Damage to Telstra equipment • Electrocution	2	4	M6	• Elimination: No one to be under load while lifting cables into position. • Engineering: Correct manual handling techniques to be used. All EWP, cranes to be reviewed prior to carrying out works. Only qualified personnel to use machine. Barricade work area. • Admin: All tickets and permits to be available prior to commencement of work. • PPE: Use appropriate safety gear (boots, gloves, hard hat, harness)	Contractor TBA		1	4	M5
20.	Build fencing around Telstra compound	• Physical injury • Manual handling • Tensioned wire come undone	• Cuts and abrasions	2	3	M5	• Engineering: Use correct tools while cutting and tightening wires. • PPE: Use appropriate safety gear (boots, gloves, long sleeve pants/shirt)	Contractor TBA		1	3	L4

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				L	C	S				L	C	S
21.	Carry out electrical installation from new metered DB to shelter	• Non electrician working • Falls from heights • Damage to property and equipment • Physical injury • Working around live power	• Major injury / Death • Damage to Telstra equipment • Electrocution • Cuts and Abrasions • Trips / Slips	2	5	H7	• Substitute: Only qualified electrical contractors to carry out works. Use appropriate tools. • Engineering: Never work on live loads. Use safety signage advising of electrical works. • PPE: Wear appropriate safety gear (boots, gloves, safety kit)	Contractor TBA		1	5	M6
22.	Terminate all specified cabling and test (PIM)	• Damage to cable • Incorrect testing • Radiation	• Damage to Telstra equipment • Radiation exposure	2	2	L4	• Engineering: Use correct tools. • Keep away the minimum distance from the antenna faces when PIM testing • • Admin: Trained person to carry out testing. • PPE: Boots, gloves	Contractor TBA		1	2	L3
23.	Clean surrounding and revert back to original state.	• Damage to surroundings	• Environmental damage	2	2	L4	• Substitution: revert site back to pre-construction conditions. Plant/replace any tree damaged or removed from excavation. • Admin: Refer to scope and permit for any additional environmental works. • PPE: Boots, gloves	Contractor TBA		1	2	L3

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				L	C	S				L	C	S
24.	Demobilise off site	• Vehicular collisions • Physical injury • Equipment damage • Property damage	• Persons being injured during removal of materials from site • Damage to surrounding property	2	2	L4	• Eliminate: Reduce the amount of travel required, plan and combine visits. • Engineer: Purchase / hire appropriate safe vehicles (Air bags). Provide hands-free mobiles. • Admin: Driver safety to be given during induction training. Talking on the phone is to be avoided. Make calls only when parked, use rest stops or service areas in preference to parking at road side. Minimise duration of phone calls received on hands free. • PPE: High visibility vests	Contractor TBA		1	2	L3
25.	Working in the vicinity of or after a bushfire	Fire, flames	Loss of life, burns, loss of equipment	L3	C5	H8	• Elimination: if Extreme fire danger reschedule the works to a more favourable time • Admin: Obtain regular situation updates from supervisor, news outlets etc. Evacuate area as required. • Engineering: Ensure mobile phones are available and have coverage or have access to a GPS phone.	All site personnel.		L1	C5	M6

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				L	C	S				L	C	S
26.		Radiant Heat	Burns, equipment damage	L3	C4	H7	• PPE e.g. full clothing, overalls etc. Ensure mobile phones available and have coverage.	All site personnel.		L1	C4	M5
27.		Radiant heat	Dehydration	L3	C3	M6	• Adequate water supply • PPE e.g. full clothing, overalls etc. Ensure mobile phones available and have coverage.	All site personnel.		L1	C3	L4
28.		Smoke	Inhalation, asphyxiation	L3	C3	M6	• PPE e.g. face masks. Ensure mobile phones available and have coverage.	All site personnel.		L1	C3	L4
29.		Dust and Ash	Eye irritation, breathing problems, asphyxiation	L3	C3	M6	• PPE e.g. face masks, first aid kit. Ensure mobile phones available and have coverage.	All site personnel.		L1	C3	L4
30.		Restricted access and egress from affected area	Exposure, injury, dehydration	L3	C4	H7	• Obtain regular situation updates from coordinator. Ensure mobile phones available and have coverage.	All site personnel.		L1	C3	M5
31.		Retention of heat in pits, lids, cables etc	Burns, equipment damage	L3	C2	M5	• Handle with care, use appropriate PPE e.g. leather gloves.	All site personnel.		L2	C2	L4

Mandatory PPE:	Safety Boots, Gloves, Hard Hats, Eye wear, Ear protection, Long sleeve pants and shirts, High visible vests, Harness

Hierarchy or Preferred Order of Control

(1) Eliminate the hazard, remove the hazard or process from the workplace.	**(3) Isolate** the hazard, ie. installing screen or barriers, marking off hazardous areas	**(5) Administrative control**, introducing work practices that reduce the risk, i.e. limiting the amount of time a person is exposed to a particular hazard
(2) Substitute or replace the hazard or hazardous work practice with a less hazardous one	**(4) Engineer** the hazard out ie. modifications to tools or equipment, guarding to machinery	**(6) Personal protective equipment**

Safety / Emergency Equipment Required	**First Aid Kit, Electrical Safety kit**
Associated Procedures, Programs, References	Site inductions, Toolbox talks and daily work site checks
Other Comment(s)	A task specific risk assessment MUST be completed if additional or changes in risk are identified

Legal & Advisory Documentation that supports this Risk Assessment.	
ACTS	*Occupational Health and Safety Act 2000*
Regulations	*OH&S training for construction work* *OHS Regulation 2001*
Codes of Practice	*National standard and code of practice for manual handling* *National standard and ode of practice for occupational noise* *Noise in the work place* *Safe working at heights* *Electrical Practices for construction work* *NSW National Parks and wildlife services*
Other Legislation Applicable	*AS3000:2007* *See separately attached sheet (Reference to Legislation and Codes)*

Personnel qualifications and experience required to complete the task	Specific training required to complete this task	Engineering Details/Certificates/WorkSafe/WorkCover Approvals

Hierarchy or Preferred Order of Control

(1) Eliminate the hazard, remove the hazard or process from the workplace.	**(3) Isolate** the hazard, ie. installing screen or barriers, marking off hazardous areas	**(5) Administrative control**, introducing work practices that reduce the risk, i.e. limiting the amount of time a person is exposed to a particular hazard
(2) Substitute or replace the hazard or hazardous work practice with a less hazardous one	**(4) Engineer** the hazard out ie. modifications to tools or equipment, guarding to machinery	**(6) Personal protective equipment**

SILCAR Communications

SWMS / RISK ASSESSMENT RECORD

This Risk Assessment has been developed in consultation with the employees & subcontractors involved in this process.
This risk assessment has been read, understood & signed by ALL people involved in this process
Signature is confirmation that this procedure in its entirety will be adhered to!

Name	Signature	Date	Name	Signature	Date

Hierarchy or Preferred Order of Control

(1) Eliminate the hazard, remove the hazard or process from the workplace.	**(3) Isolate** the hazard, ie. installing screen or barriers, marking off hazardous areas	**(5) Administrative control**, introducing work practices that reduce the risk, i.e. limiting the amount of time a person is exposed to a particular hazard
(2) Substitute or replace the hazard or hazardous work practice with a less hazardous one	**(4) Engineer** the hazard out ie. modifications to tools or equipment, guarding to machinery	**(6) Personal protective equipment**

Prompt Sheet

Review below for additional hazards, when present write these hazards and their controls into your Risk Assessment

A	**Entanglement**
☐	Can anyone's hair, clothing, gloves, rags, or other materials become entangled with electrical tools, or materials in motion?
B	**Crushing**
☐	Can anyone be crushed due to material falling from heights?
C	**Fall from Heights**
☐	Can anyone fall from a height due to: a) Lack of a proper work platform?
☐	b) Lack of proper stairs or ladders?
☐	c) Lack of guardrails or other suitable edge protection?
☐	d) Unprotected holes, penetrations or gaps?
☐	e) Poor floor or walking surfaces, such as the lack of a slip-resistant surface?
☐	f) Steep walking surfaces?
☐	g) Lack of training?
☐	h) Collapse of the supporting structure?
D	**Cutting, Stabbing And Puncturing**
☐	Can anyone be cut or stabbed, or struck by moving objects due to: a) Coming in contact with sharp objects?
☐	b) Coming in contact with moving parts of electrical equipment?
☐	c) Coming into contact with hand tools?
☐	d) Uncontrolled or unexpected?
E	**Friction/Burns**
☐	Can anyone be burnt due to contact with moving parts or surfaces, or handling hot material?
F	**Striking**
☐	Can anyone be struck by moving objects?
G	**High Pressure Fluids**
☐	Can anyone come into contact with fluids under high pressure, due to plant failure or misuse of the plant?
H	**Electrical**
☐	Can anyone be injured by electrical shock or burnt due to: a) No RCD switch at main board?
☐	b) Incorrect use of equipment?
☐	c) Overload of electrical circuits?
☐	d) Damaged or poorly maintained electrical leads and cables?
☐	e) Damaged electrical switches?
☐	f) Water near electrical equipment?
☐	g) Lack of isolation procedures?

I	**Slipping, Tripping And Falling**
☐	Can people, slip, trip or fall due to: a) Uneven or slippery work surfaces?
☐	b) Poor housekeeping?
☐	c) Obstacles being placed in the vicinity of work area?
J	**Ergonomics**
☐	Can anyone be injured due to: a) Repetitive body movement?
☐	b) Constrained body posture or the need for excessive effort?
☐	c) Lack of consideration given to human error or human behaviour?
☐	d) Mismatch of task with human traits and natural limitations?
K	**Thermal Temperature Effects Or Fire**
☐	a) Can anyone come into contact with objects at high or extreme low temperatures?
☐	b) Can anyone suffer ill health due to exposure to high or low temperatures?
L	**Other Hazards**
☐	Can anyone be injured or suffer ill-health from exposure to: a) Chemicals?
☐	b) Toxic gases or vapours?
☐	c) Fumes?
☐	d) Dust?
☐	e) Noise?
☐	f) Vibration?
M	**Manual Handling**
☐	Can anyone be injured due to manual handling process? a) Moving?
☐	b) Assembling?
☐	c) Lifting?
☐	d) Digging?
☐	e) Carrying product?
N	**Environmental Aspects & Impacts to be considered**
☐	Can environment harm be caused by: a) Emissions to air?
☐	b) Releases to water and waterways?
☐	c) Waste management?
☐	d) Dust?
☐	e) Noise?

Appendix E

Map – Surrounding Network

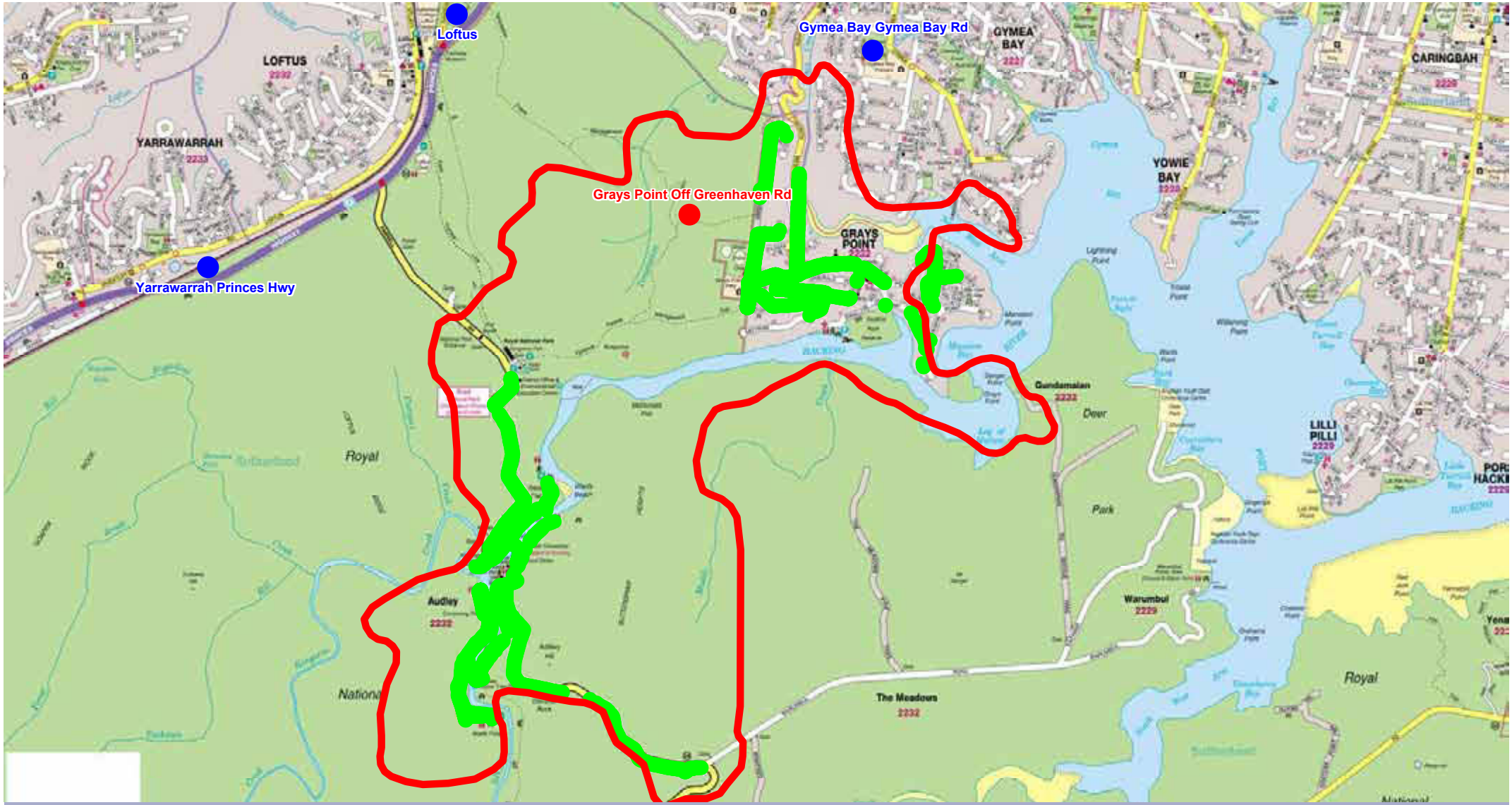
surrounding network locations

Appendix F

Map – Enhanced Coverage Area

Telstra Next G™ Network Coverage - Area Of Proposed Enhancement

14/02/2011



Customers should be aware that the Telstra wireless coverage maps displayed have been created using tools that predict the likely areas of coverage. Not every particular location within the identified coverage areas has been individually tested for coverage. This means that while the footprint of coverage outlined on the maps is generally accurate, there will be specific areas described as being within a coverage area where a customer's device will not work. This is a common characteristic of wireless systems. For example, coverage could be degraded or not existent in specific locations due to certain physical structures or geographic features. Physical structures which may block or inhibit coverage could include basements, lifts, underground car parks, concrete buildings, tunnels and road cuttings. Geographic features which may block or inhibit coverage could include formations such as hills and mountains or even trees.

Customers should also be aware the Telstra wireless coverage maps also may indicate planned coverage expansions of the Telstra wireless network. Coverage planned for the future is based on Telstra's rollout schedule. Telstra reserves the right to modify this schedule without notice, as required from time to time.

Data speeds experienced on Telstra's wireless networks may be affected by network availability, the type and configuration of customer equipment, the performance of external networks (for example the Internet), the signal strength of the device used and other factors such as the type of application being used.

Next G™ coverage

- Area of Proposed Telstra Next G™ Network Coverage Enhancement
- Service
- No Service

Appendix G

EME Report

O

Summary of Estimated RF EME Levels around the Proposed Mobile Phone Base Station at off Greenhaven Rd, Grays Point NSW 2232

Introduction:

Date 21/6/2011

NSA Site No (2232014)

This report summarises the estimated maximum cumulative radiofrequency (RF) electromagnetic energy (EME) levels at ground level emitted from the existing Mobile Phone Base Station antennas at off Greenhaven Rd Grays Point NSW 2232. Maximum EME levels are estimated in 360° circular bands out to 500m from the base station. The procedures for making the estimates have been developed by the Australian Radiation Protection And Nuclear Safety Agency (ARPANSA)[1]. These are documented in the ARPANSA Technical Report; "Radio Frequency EME Exposure Levels - Prediction Methodologies" which is available at http://www.arpansa.gov.au

EME Health Standard

ARPANSA, an Australian Government agency in the Health and Ageing portfolio has established a Radiation Protection Standard[2] specifying limits for continuous exposure of the general public to RF transmissions at frequencies used by mobile phone base stations. Further information can be gained from the ARPANSA web site.

The Australian Communications and Media Authority (ACMA)[3] mandates exposure limits for continuous exposure of the general public to RF EME from mobile phone base stations. Further information can be found at the ACMA website http://emr.acma.gov.au

Existing Site Radio Systems

There are currently no existing radio systems for this site.

Proposed Site Radio Systems

Telstra / WCDMA850			

Table of Predicted EME Levels – Proposed

Distance from the antennas at off Greenhaven Rd in 360° circular bands	Maximum Cumulative EME Level – All carriers at this site (% of ARPANSA exposure limits[2]) Public exposure limit = 100%
0m to 50m	0.0075%
50m to 100m	0.024%
100m to 200m	0.19%
200m to 300m	0.14%
300m to 400m	0.1%
400m to 500m	0.058%
Maximum EME level 161.32 m, from the antennas at off Greenhaven Rd	0.19%

Note: Estimation for the maximum level of RF EME at 1.5m above the ground from the existing and proposed antennas assuming level ground. The estimated levels have been calculated on the maximum mobile phone call capacity anticipated for this site. This estimation does not include possible radio signal attenuation due to buildings and the general environment. The actual EME levels will generally be significantly less than predicted due to path losses and the base station automatically minimising transmitter power to only serve established phone calls[5]. Where applicable, particular locations of interest in the area surrounding the base station, including topographical variations, are assessed in Appendix A "Other areas of Interest" table on the last page.

Summary – Proposed Radio Systems

RF EME levels have been estimated from the existing and proposed antennas at **off Greenhaven Rd** Grays Point NSW 2232. The maximum cumulative EME level at 1.5 m above ground level is estimated to be **0.19** % of the ARPANSA public exposure limits.

Reference Notes:

1. The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) is a Federal Government agency incorporated under the Health and Ageing portfolio. ARPANSA is charged with responsibility for protecting the health and safety of people, and the environment, from the harmful effects of radiation (ionising and non-ionising).

2. Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), 2002, 'Radiation Protection Standard: Maximum Exposure Levels to Radiofrequency Fields — 3 kHz to 300 GHz', Radiation Protection Series Publication No. 3, ARPANSA, Yallambie Australia.
[Printed version: ISBN 0-642-79400-6 ISSN 1445-9760]
[Web version: ISBN 0-642-79402-2 ISSN 1445-9760]

3. The Australian Communications and Media Authority (ACMA) is responsible for the regulation of broadcasting, radiocommunications, telecommunications and online content. Information on EME is available at http://emr.acma.gov.au/

4. The EME predictions in this report assume a near worst-case scenario including:
- base station transmitters operating at maximum power (no automatic power reduction)
- simultaneous telephone calls on all channels
- an unobstructed line of sight view to the antennas.
In practice a worst-case scenario is rarely the case. There are often trees and buildings in the immediate vicinity, and cellular networks automatically adjust transmit power to suit the actual telephone traffic. The level of EME may also be affected where significant landscape features are present and predicted EME levels might not be the absolute maximum at all locations.

5. Further explanation of this report may be found in "Understanding the ARPANSA Environmental EME Report" and other documents on the ARPANSA web site, http://www.arpansa.gov.au

Appendix A

Table of Other Areas of Interest

Additional Locations	Height / Scan relative to location ground level	Maximum Cumulative EME Level All Carriers at this site (% of ARPANSA exposure limits[2]) Public exposure limit = 100%
Grays Point Public School Grays Point Activity Centre	0m to 5m 0m to 5m	0.014% 0.0092%

Note: Estimation for the maximum EME levels at selected areas of interest over a height range relative to the specific ground level at the area of interest. This table includes any existing and proposed radio systems.

Estimation Notes / Assumptions – Other Areas of Interest

Variable ground topography has been included in the assessment of the "Other Areas of Interest" as per ARPANSA methodology

Appendix H

Reconnaissance – Alternative Locations

A – D: ALTERNATIVE LOCATIONS WITHIN THE RNP

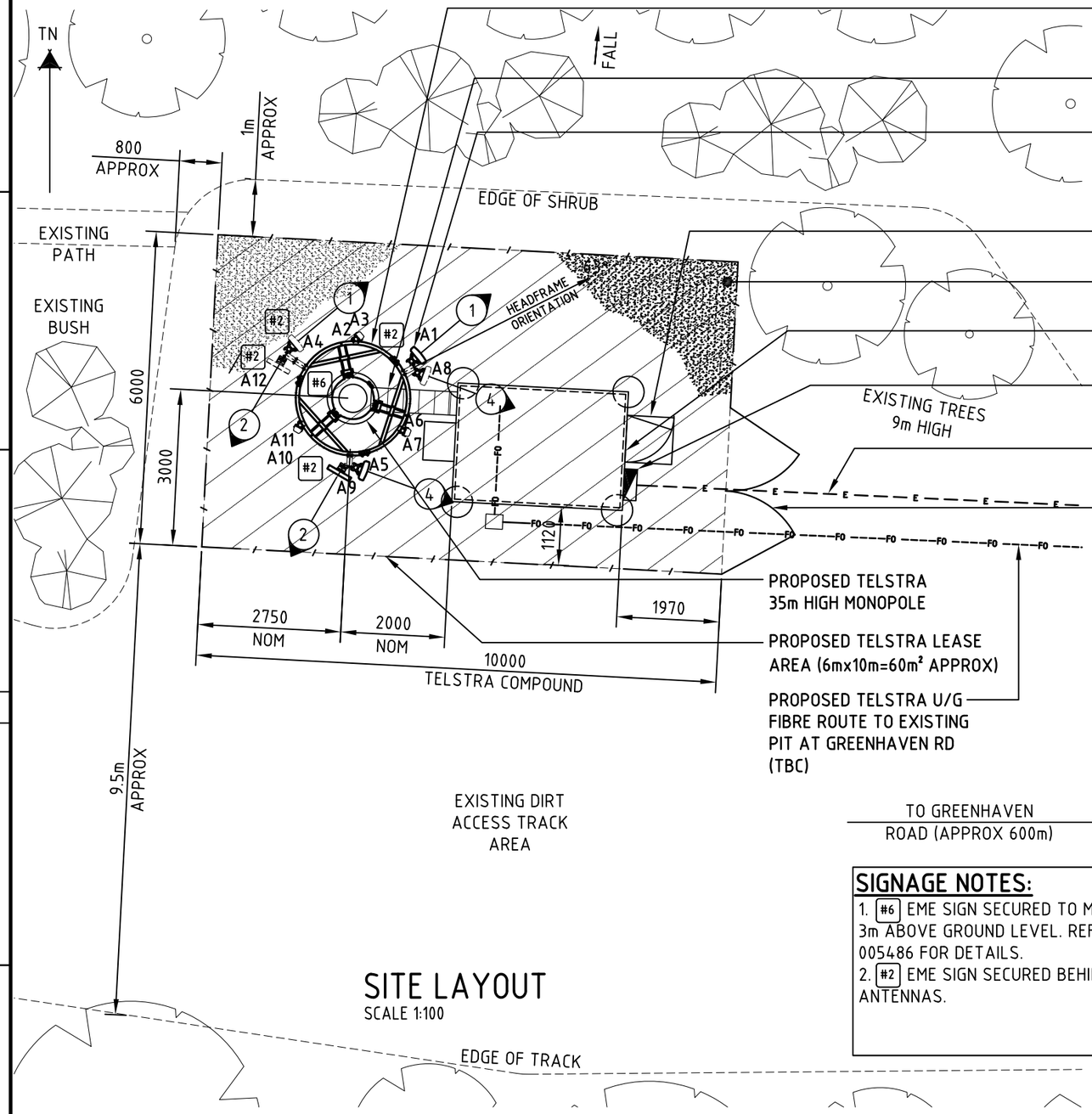
E: EXISTING LIGHTING POLE WITHIN THE SPORTING OVAL, ANGLE ROAD

F: RFS, INGLEWOOD ROAD

G: LOCAL SHOPPING CENTRE, GRAYS POINT ROAD

Appendix I

Site Drawings and Locality



PROPOSED TELSTRA CIRCULAR HEADFRAME AT EL 35m

PROPOSED TELSTRA 450 WIDE ELEVATED CABLE LADDER

PROPOSED TELSTRA PANEL ANTENNAS ON MONOPOLE (3-OFF PROPOSED & 9-OFF FUTURE POLE MOUNTED ON HEADFRAME AT EL 35m)

PROPOSED TELSTRA 900 SQ PRECAST CONCRETE SLAB

PROPOSED TELSTRA GRAVEL COVER OVER COMPOUND

PROPOSED TELSTRA EQUIPMENT SHELTER ON ELEVATED PIERS, COLOUR: PALE EUCALYPT

PROPOSED TELSTRA ELECTRICAL BOX ON SHELTER

PROPOSED TELSTRA U/G SUBMAIN ROUTE TO EXISTING PILLAR AT GREENHAVEN RD (TBC)

PROPOSED TELSTRA COMPOUND SECURITY FENCE WITH 3000 WIDE DOUBLE ACCESS GATES

PROPOSED TELSTRA 35m HIGH MONOPOLE

PROPOSED TELSTRA LEASE AREA (6mx10m=60m² APPROX)

PROPOSED TELSTRA U/G FIBRE ROUTE TO EXISTING PIT AT GREENHAVEN RD (TBC)

SIGNAGE NOTES:

1. #6 EME SIGN SECURED TO MONOPOLE 3m ABOVE GROUND LEVEL. REFER TO 005486 FOR DETAILS.
2. #2 EME SIGN SECURED BEHIND ALL ANTENNAS.

SITE LAYOUT

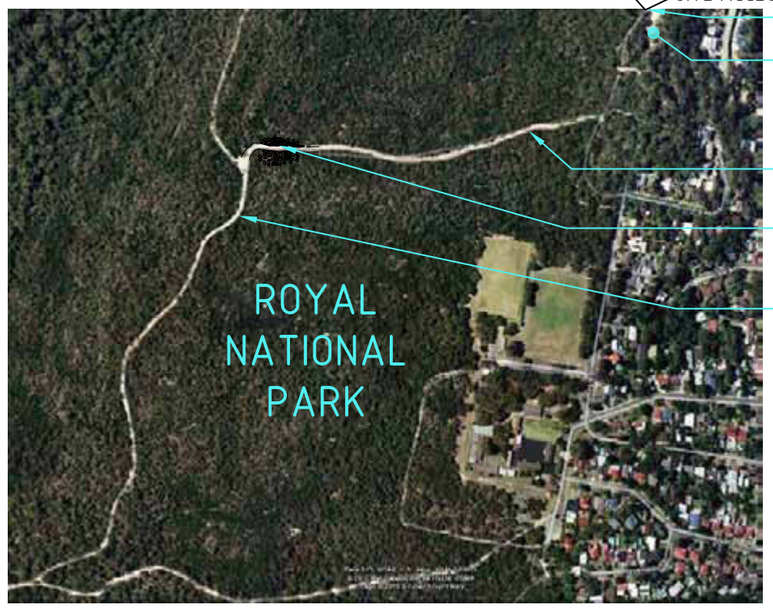
SCALE 1:100

NOTES:
1. FOR EME SIGNS NOTATED #X REFER TO 005486 FOR DETAILS.
PROPOSED LEASE AREA

RFNSA SITE No. TBA

LOCALITY PLAN NOT TO SCALE

SYDNEY UBD MAP 332 GRID P13



SITE ACCESS

SCALE 1:10000

SCALE 1:10000 100m 0 100m 200m 300m 400m 500m

PRELIMINARY

SITE STRUCTURE CO-ORDINATES GPS READING ACCURACY: ±10m CENTRE OF MONOPOLE	
LATITUDE (S)	-34.055316 (GDA 94)
LONGITUDE (E)	151.068702 (GDA 94)

NEXT NETWORK™

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New South Wales 2089 Australia Email: sydney@ap.aurecongroup.com

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
NA05634	AQ	AQ	ISSUED FOR APPROVAL SP70644182W001A	PM	NT	11.11.10	1
NA05634	AQ	AQ	ISSUED FOR APPROVAL SP70644182W001A	PM	NT	23.11.10	2

Telstra

MOBILE NETWORK SITE 257459

GRAYS POINT OFF GREENHAVEN RD

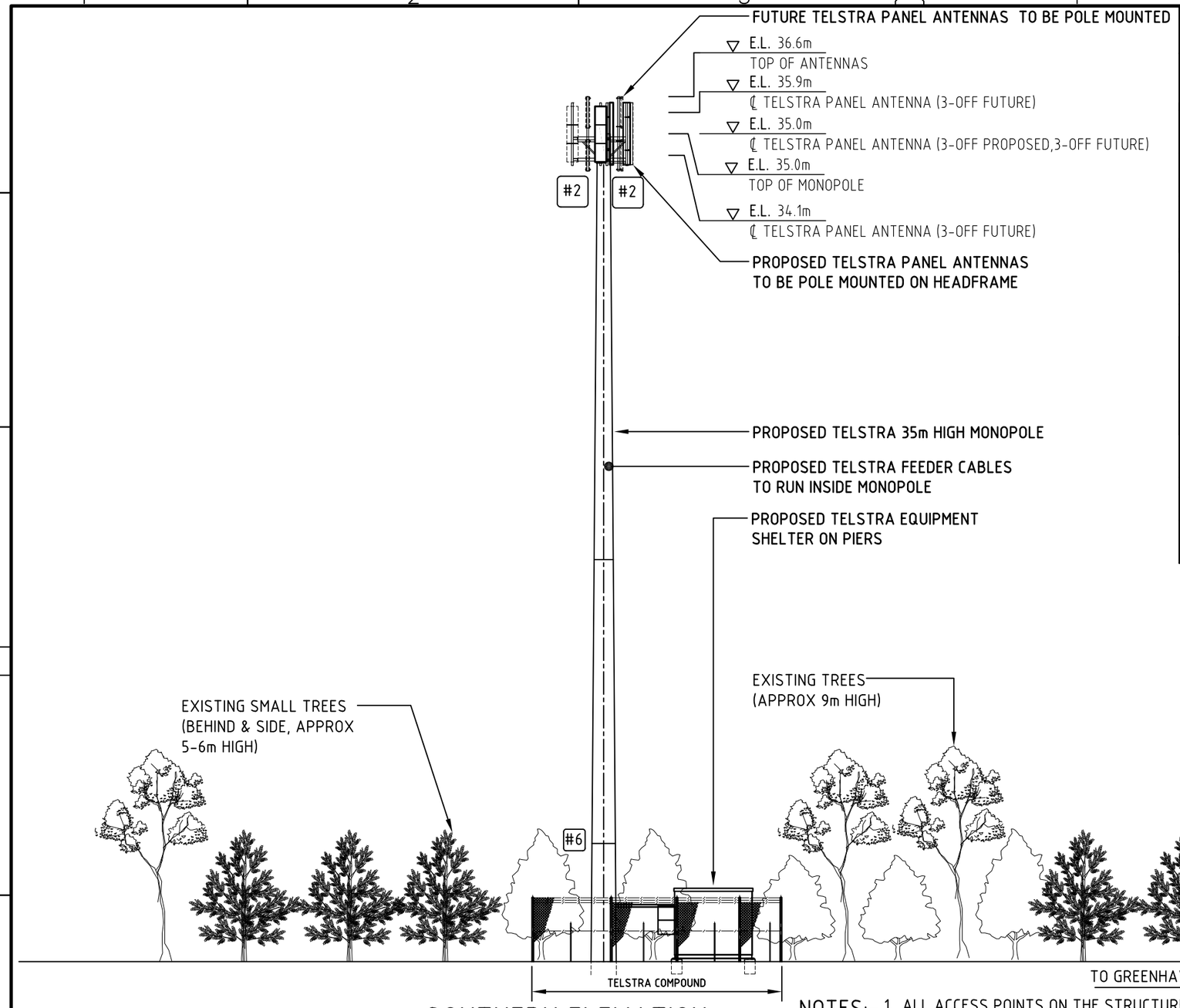
SITE LAYOUT AND ACCESS

356 PLAN MP144 AUDLEY RD, ROYAL NATIONAL PARK

DWG NO. N109299

SHT NO. S1 INDEX

A3



SOUTHERN ELEVATION

SCALE 1:200 (VIEW FROM TRACK)

2m 0 2m 4m 6m 8m 10m SCALE 1:200

TELSTRA ANTENNA CONFIGURATION TABLE

ANTENNA No	ANTENNA TYPE & SIZE H x W x D	ANTENNA STATUS	ANTENNA HEIGHT C/L A.G.L.	ANTENNA BEARING (x°T)	SECTOR NO. & SYSTEM
A1	ARGUS CPX310R-V1 PANEL 2630 x 300 x 115	PROPOSED	35.0m	50°	S1: WCDMA850 S1: WCDMA850
A5	ARGUS CPX310R-V1 PANEL 2630 x 300 x 115	PROPOSED	35.0m	110°	S4: WCDMA850 S4: WCDMA850
A9	ARGUS CPX209R-L-V1 PANEL 2350 X 480 X 95	PROPOSED	35.0m	210°	S2: WCDMA850 S2: WCDMA850
A2	ARGUS NPX310R PANEL 1330 x 160 x 95	FUTURE	35.9m	50°	FUTURE / FUTURE
A6	ARGUS NPX310R PANEL 1330 x 160 x 95	FUTURE	35.9m	110°	FUTURE / FUTURE
A10	ARGUS NPX310R PANEL 1330 x 160 x 95	FUTURE	35.9m	210°	FUTURE / FUTURE
A3	ARGUS NPX310R PANEL 1330 x 160 x 95	FUTURE	34.1m	50°	FUTURE / FUTURE
A7	ARGUS NPX310R PANEL 1330 x 160 x 95	FUTURE	34.1m	110°	FUTURE / FUTURE
A11	ARGUS NPX310R PANEL 1330 x 160 x 95	FUTURE	34.1m	210°	FUTURE / FUTURE
A4	ARGUS CPX310R-V1 PANEL 2630 x 300 x 115	FUTURE	35.0m	50°	FUTURE FUTURE
A8	ARGUS CPX310R-V1 PANEL 2630 x 300 x 115	FUTURE	35.0m	110°	FUTURE FUTURE
A12	ARGUS CPX209R-L-V1 PANEL 2350 X 480 X 95	FUTURE	35.0m	210°	FUTURE FUTURE

SIGNAGE NOTES:

1. #6 EME SIGN SECURED TO MONOPOLE 3m ABOVE GROUND LEVEL. REFER TO 005486 FOR DETAILS.
2. #2 EME SIGN SECURED BEHIND ALL ANTENNAS.

NOTES:-

1. ALL ACCESS POINTS ON THE STRUCTURE MUST BE BIRD PROOFED AS PER EXTERNAL PLANT POLICY 003615.
2. FOR EME SIGNS NOTATED #X REFER TO 005486 FOR DETAILS.
3. THIS DRAWING SET IS A PRELIMINARY DRAWING ONLY AND IS ISSUED FOR COMMENT. IT IS NOT A DETAILED SURVEY / STRUCTURAL DRAWING AND THEREFORE COULD BE SUBJECT TO CHANGE.
4. ANTENNAS, HEADFRAME & MONOPOLE TO BE PAINTED WITH 'PALE EUCALYPT'.
5. MONOPOLE FOOTING TYPE TO BE BASED ON GEOTECHNICAL INVESTIGATION.

PRELIMINARY

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
NA05634	AQ	AQ	ISSUED FOR APPROVAL SP70644182W001A	PM	NT	11.11.10	1
NA05634	AQ	AQ	ISSUED FOR APPROVAL SP70644182W001A	PM	NT	23.11.10	2

NEXT NETWORK™

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Telstra

MOBILE NETWORK SITE 257459
GRAYS POINT OFF GREENHAVEN RD
SOUTHERN ELEVATION
356 PLAN MP144 AUDLEY RD, ROYAL NATIONAL PARK

DWG NO. N109299 SHT NO. S3 INDEX

Appendix J

Sutherland Shire Zoning Map (SSLEP 2006)

Sutherland Shire
Local Environmental Plan 2006
under the Environmental Planning & Assessment Act 1979

Zoning (Amendment No 8)

Ratio 1 : 8000

0 50 100 200 300 400 m

Legend

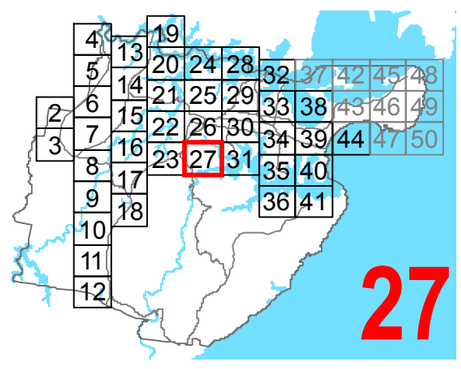
- Zone 1 - Environmental Housing (Environmentally Sensitive Land)
- Zone 2 - Environmental Housing (Scenic Quality)
- Zone 3 - Environmental Housing (Bushland)
- Zone 4 - Local Housing
- Zone 5 - Multiple Dwelling A
- Zone 6 - Multiple Dwelling B
- Zone 7 - Mixed Use - Kirrawee
- Zone 8 - Urban Centre
- Zone 9 - Local Centre
- Zone 10 - Neighbourhood Centre
- Zone 11 - Employment
- Zone 12 - Special Uses
- Zone 13 - Public Open Space
- Zone 14 - Public Open Space (Bushland)
- Zone 15 - Private Recreation
- Zone 16 - Environmental Protection (Waterways)
- Zone 17 - Environmental Protection (Low Impact Rural)
- Zone 18 - Environmental Protection (Water Catchment)
- Zone 19 - Aquatic Reserves
- Zone 20 - National Parks, Nature Reserves and State Conservation Areas
- Zone 21 - Railway
- Zone 22 - Arterial Road
- Zone 23 - Road
- Zone 24 - Transport Reservation
- deferred matter - existing zoning under SSLEP 2000 or Menai Town Centre LEP 1992 continues until resolved
- Land Referred to in Clause 11 (Zone 4 - Local Housing) - Medical Facilities and High Technology Medical Industry
- Land Referred to in Clause 11 (Zone 8 - Urban Centre) - Residential Flat Buildings
- Land Referred to in Clause 11 (Zone 11 - Employment) - Bulky Goods Premises
- 20m Foreshore Building Line
- SSC LGA Boundary
- Excluded

Relationship with other Plans.
These maps are to be read in conjunction with Sutherland Shire Local Environmental Plan 2006.

Sutherland Shire Council
Environmental Planning Unit

Council File Number:	LP/03/500868
DoP File Number:	S09/013351-1

This map is part of the set of maps included with the plan.
It was prepared on 30 July, 2010.
It was in effect on 30 July, 2010.



Appendix K

AHIMS Report

AHIMS Web Services (AWS)
Search Result

Your Ref Number : Grays Point E/N Buffer

Client Service ID : 80188

Davina Knox
116 Military Road
Neutral Bay New South Wales 2089

Attention: Davina Knox

Email: davina.knox@aurecongroup.com

Date: 14 September 2012

Dear Sir or Madam:

AHIMS Web Service search for the following area at Datum :GDA, Zone : 56, Eastings : 321740 - 321770, Northings : 6230020 - 6230040 with a Buffer of 50 meters. conducted by Davina Knox on 14 September 2012

A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

0	**Aboriginal sites are recorded in or near the above location.**
0	**Aboriginal places have been declared in or near the above location. ***

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (http://www.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date .Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

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Australia
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E sydney@aurecongroup.com
W aurecongroup.com

Our Ref: 411035_REO_001

BM_01.F25_V1

7 October 2011

Aurecon
PO Box 538
Neutral Bay NSW 2089

Attention: Carly Mellor

Dear Carly

RE: Terrestrial Ecology Assessment, Proposed Telstra Mobile Phone Base Station, Royal National Park, via Greenhaven Road, Grays Point

1. Introduction

In response to a request from the NSW Office of the Environment and Heritage (OEH) for additional information, Orogen was commissioned by Aurecon Australia Pty Ltd to undertake a Terrestrial Ecology Assessment for a proposed mobile phone tower in the Royal National Park, Grays Point, NSW. The tower is proposed to be situated mostly within a small clearing on the northern side of the Anana Management Trail within the far northern section of the Royal National Park.

Discussions with OEH's Mr Grant Millar confirmed that the ecology scope of work would comprise a botanical survey and a Section 5A Assessment based on field surveys (flora) and habitat assessment (fauna). OEH agreed that no fauna surveys were warranted given the negligible area of vegetation proposed for removal to accommodate the mobile phone tower (*pers. comm*. Mr Grant Millar, 29 September 2011).

2. Description of the Proposal

The Telstra proposal comprises the following features, detailed in the REF for the project (Aurecon, 2011):

- Construction of a new 35m high monopole;
- Initial installation of 3 new panel antennas mounted on the new monopole;
- Future installation of 9 panel antennas mounted on the new monopole; and
- Installation of ancillary equipment on the new monopole and within a new Telstra shelter located at the base of the new monopole.

Based on the Survey Plan provided to Orogen by Aurecon (**Figure 1**), a total of 57.5 m^2 (0.00575 ha) of native vegetation would require removal for the proposed mobile phone tower and ancillary facilities.

3. Methodology

An online search of the NSW Wildlife Atlas (Royal National Park search area) was undertaken in October 2011 to determine records of locally occurring Threatened flora and fauna species, to assist in determining which species to target during field surveys (flora) as part of a Section 5A assessment.

A botanical survey was undertaken by Orogen Senior Botanist Isaac Mamott on 30 September 2011 in fine conditions over a 3.5 hour period to inventory vascular plants within the study area. For the purposes of this study, the study area is defined as a 15 metre arc radius north of the survey pegs established by Aurecon surveyors at the proposed tower site. A total of 4 x 30 m tape reels were set out in an arc (180˚) to delineate the study area in the field. All vascular taxa within the study area were recorded on a field proforma along with other bio-physiographic attributes such as vegetative structure, soils and geology, slope, aspect, topographic position, location, time since last fire event and forms of disturbance, other than fire.

The structural classification used for the community description follows Walker and Hopkins (1990). Subformation names for vegetation types follows the classification proposed by Beadle and Costin (1952). Botanical nomenclature follows Harden (1990-1993, 2000, 2003) and recent prescriptions of the NSW National Herbarium in botanical journals and *PlantNet* website. The vegetation communities are named after dominant indicator species of the tallest stratum and could be considered as 'associations' as defined by Beadle (1981).

Assessment of the conservation status of the vegetation communities recorded in the study area follows the Preliminary and Final Scientific Committee Determinations listed under the *TSC Act*.

The survey was supplemented with dedicated searches for locally occurring TSC listed and ROTAP taxa associated with Sydney Sandstone Ridgetop Woodland habitats within the study area, including *Eucalyptus camfieldii, Melaleuca deanei, Grevillea parviflora, Darwinia diminuta, Darwinia biflora and Persoonia hirsuta*.

4. Survey Results

Vegetation Community Description

A Low Open Dry Sclerophyll Woodland/Sandstone Open Heath intergrade community was recorded in the study area during the botanical survey on shallow, low nutrient, dry to slightly moist sandy soils on Hawkesbury Sandstone. Sandstone outcropping was extensive throughout the study area. No ironstone was recorded mantling the bedrock. The intergrade community occurred on a semi-broad ridge that runs along the Anana Management Trail at an elevation of approximately 107 m AHD in the study area.

The community contained elements typical of both Sydney Sandstone Ridgetop Woodland (*eg. Eucalyptus spp.*) and Open and Closed Heath/Scrub communities (*eg. Allocasuarina distyla, Banksia ericifolia, Darwinia fascicularis subsp fascicularis, Angophora hispida*). The author has often recorded community

intergrades of this type in a number of Sydney Sandstone reserves (Woronora and Hornsby Plateaux) and is it considered to be a relatively common feature of the Sydney Sandstone flora, particularly on poorly drained plateau areas, low slope ridges and ridgetops with skeletal sandy soils (author's *pers. obs*.).

Floristic Summary

A structural and floristic summary of the intergrade community recorded in the study area is provided below.

Upper (Tree) Stratum: 6-7m tall. Projected Canopy Cover 15%

Eucalyptus racemosa x *Eucalyptus haemastoma (hybrid), Corymbia gummifera, Eucalyptus punctata.*

Mid Stratum (Upper): 2-4m tall. Projected Canopy Cover 35%

Angophora hispida, Allocasuarina distyla, Leptospermum trinervium, Persoonia levis, Banksia ericifolia subsp ericifolia, Banksia serrata.

Mid Stratum (Lower): 1-2m tall. Projected Canopy Cover 35%

Lambertia formosa, Grevillea sericea subsp. sericea, Grevillea buxifolia subsp. buxifolia, Hakea teretifolia, Persoonia pinifolia, Darwinia fascicularius subsp fascicularis, Epacris longiflora, Petrophile pulchella, Isopogon anemonifolius, Monotoca scoparia, Leptospermum arachnoides, Leucopogon esquamatus, Acacia suaveolens

Ground Cover: 0-1 m tall. Projected Canopy Cover 50%

Entolasia stricta, Patersonia glabrata, Lomandra glauca, Cyathochaeta diandra, Lepyrodia scariosa, Lepidosperma filiforme?, Lepidosperma laterale, Lepidosperma viscidum, Platysace linearifolia, Tetraria capillaris, Brachyscome multifida, Schoenus sp.

Conservation Status

At the time of report preparation, data on extant area for this vegetation community intergrade both in the Royal National Park and on the greater Woronora plateau was not available from OEH. In the absence of this data, however, it can be reasonably assumed that given the community intergrade's local occurrence on exposed ridges and plateau tops, the community is expected to be well represented (ie. conserved) in the locality's conservation reserves (Royal, Heathcote NPs) as well as in the adjoining Sydney Water Supply Catchment (considered as a de facto reserve).

The vegetation community intergrade is not considered to be analogous to any TSC or EPBC listed EECs.

Threatened Plants

No rare or Threatened plants were recorded in the study area during the survey. The Threatened tree *Eucalyptus camfieldii* was tentatively (and opportunistically) recorded approximately 200 metres from the study area in a similar vegetation type south of the Anana Management Trail. No disturbance to the tree would be expected from the proposal as it is well outside the area of vegetation to be cleared.

5. Impact Assessment

Vegetation Removal

The proposed phone tower and surrounding perimeter compound fence would be wholly contained within a small, existing clearing on the northern side of the Anana Management Trail and thus no clearing of vegetation would be required for the physical plant equipment (tower, shelter and fence).

Advice from Aurecon confirmed that a 3 m cleared area around the perimeter fence would be needed for access and fire protection purposes. The 3 m setback would require the removal of approximately 57.5 m^2 (**Figure 1**) of the vegetation community intergrade described above in **Section 4** of this letter report. In the absence of extant mapping data for the Royal National Park and greater Woronora Plateau at the time of report preparation, a precise quantitative measure of the absolute total % loss of this community intergrade cannot be made. Nevertheless, as noted in **Section 4**, if one takes into account the community intergrade's broad occurrence in the locality's formal conservation reserves and de facto reserves based on its landform and geological characteristics, one can reasonably conclude that the removal of 57.5 m^2 of this community is 'negligible' in this local context and would not be expected to significantly impact the community's local occurrence or viability.

Threatened Species

A Section 5A Assessment (short tablature form) was undertaken for those TSC/EPBC listed species considered as possible occurrences within the study area based on each species' known habitats and distribution as well as vegetation type/habitats recorded in the study area (**Attachment A**). Such species are referred to as 'Subject Species'. Subject Species for the proposal are listed below:

Flora

Eucalyptus camfieldii, Astrotricha crassifolia, Prostanthera densa, Darwinia biflora, Melaleuca deanei, Genoplesium bauera, Grevillea parviflora subsp parviflora, Persoonia hirsuta and Pimelea curviflora var curviflora, Genoplesium baueri.

It should be noted that species such as *Prostanthera densa*, *Melaleuca deanei* and *Pimelea curviflora var curviflora* are considered to have only a low to moderate likelihood of occurrence in the study area, as the author has only recorded these species on laterite overlying sandstone which is absent on the site.

The Threatened orchid, *Genoplesium baueri*, was not targeted during the survey as it dies back annually to an underground tubestock following flowering and seed set. A targeted search for this species is recommended during its summer flowering period.

Fauna

Broad headed Snake (*Hoplocephalus bungaroides*), Rosenberg's Goanna (*Varanus rosenbergi*), Greater Broad nosed Bat (*Scoteanax rueppellii*), Southern Myotis (*Myotis macropus*), Eastern Bentwing-bat (*Miniopterus schreibersii oceanensis*), Eastern False Pipistrelle (*Falsistrellus tasmaniensis*), Large eared Pied Bat (*Chalinolobus dwyeri*), Koala (*Phascolarctos cinereus*), Grey headed Flying Fox (*Pteropus poliocephalus*), Spotted tailed Quoll (*Dasyurus maculatus*), Eastern Pygmy Possum (*Cercartetus nanus*), Powerful Owl (*Ninox strenua*), Masked Owl (*Tyto novaehollandiae*), Sooty Owl (*Tyto tenebricosa*), Barking Owl (*Ninox connivens*), Little Lorikeet (*Glossopsitta pusilla*), Varied Sitella (*Daphoenositta chrysoptera*), Gang Gang Cockatoo (*Callocephalon fimbriatum*), Osprey (*Pandion haliaetus*), Square tailed Kite (*Lophoictinia isura*), Little Eagle (*Hieraaetus morphnoides*), Red crowned Toadlet (*Pseudophryne australis*), Giant Burrowing Frog (*Heleioporus australiacus*).

The study area represents potential foraging habitat only for microbats and the large forest owls given the absence of roosting habitat for this suite of species such as tree hollows and cave/cave substitutes.

The Section 5A Assessment (**Attachment A**) concluded that the proposed removal of 57.5 m^2 (0.00575 ha) of vegetation is unlikely to result in a significant impact on threatened species, populations or ecological communities.

6. Mitigation Measures

The following mitigation measures are recommended to minimise impacts to flora and fauna:

- A pre construction search for the Threatened orchid *Genoplesium baueri* should be undertaken during its known flowering period (December—March) in an attempt to confirm or discount its presence on the site. Results from an online Wildlife Atlas search show two (2) records for the species less than 500 m from the study area;
- Clearing of vegetation for the 3 m setback from the perimeter fence should be kept to an absolute minimum so that no vegetation over and above what is required for the proposal is removed. The clearing Contractor should be inducted by Aurecon personnel and made aware of the clearing limitations. Temporary plastic mesh fencing or a suitable alternative should be established to delineate the clearing zone for the clearing Contractor;
- Vegetation should be felled away from adjoining (retained) vegetation and towards the tower footprint;
- Felled trees should be relocated into adjoining low woodland habitat for reuse as terrestrial ground debris. Trees are considered to be small enough for two (2) personnel to manually lift without the need for machinery;
- Given the absence of hollows and the small area of vegetation proposed for removal (57.5 m^2), no ecological clearing supervision, pre clearing surveys or compensatory nest box program is deemed warranted;
- It is likely that the setback zone will need to be maintained by slashing on a periodic basis. Maintenance slashing should similarly be restricted to the defined setback zone with no disturbance

to the adjoining (retained) vegetation. Slashing should be undertaken by a whipper snipper rather than a ride on commercial slasher; and

- To minimise the introduction of pathogens to the site, Telstra, Aurecon and its Contractors should adopt personal and vehicle hygiene practices during all pre construction, construction and post construction maintenance activities at the site, including the use of a bleach/water solution on all vehicles, tyres and plant equipment prior to entering the site.

7. Natural Heritage Values of the Royal National Park

The Royal National Park and Garawarra State Conservation Area were included in the National Heritage List as a 'place of national significance' pursuant to section 324J of the *Environment Protection and Biodiversity Conservation Act 1999*.

The listing was gazetted in the Commonwealth Government Gazette on 15 December 2006. The following National Heritage Values were listed for the site:

> *"The place is important for its richness in a wide array of species including heaths (Epacridaceae), peas and wattles (Mimosaceae and Fabaceae), orchids (Orchidaceae), grevilleas and banksias (Proteaceae) and members of the eucalypt family (Myrtaceae). The place is also extremely important as a centre of temperate animal species richness for a range of groups including perching birds (Passeriformes) especially honeyeaters (Meliphagidae), tree-frogs (Hylidae), reptiles (Reptilia) and butterflies (Lepidoptera). The place can be regarded as exemplifying the biodiverse Hawkesbury Sandstone environment (Braby 2000; DEH 2004; DEH 2006; NSW NPWS 2000)."*

Consideration of the National Heritage Values and the potential impacts of the proposed clearing on these (flora and fauna groups contained therein) have been addressed in this Terrestrial Ecology assessment. The Section 5A Assessment () concluded that the proposed clearing of 57.5 m2 of vegetation around the perimeter fence of the compound would be unlikely to result in a significant impact on any species, populations or ecological communities. Therefore, the proposed activity is unlikely to adversely affect the National Heritage Values of the Royal National Park. In addition mitigation measures as described in the Section 6 will ensure that the clearing works will not adversely impact on the surrounding environment.

8. Commonwealth Environment Protection and Biodiversity Conservation Act 1999 Assessment

General Overview

The *Commonwealth Environmental Protection and Biodiversity Conservation Act 1999* (*EPBC Act*) requires that assessment must be made to determine if an activity is likely to impact upon eight identified matters of National Environmental Significance (NES). Activities considered likely to cause a significant impact to matters of NES require Commonwealth approval under the provisions of the *EPBC Act.*

The eight matters of NES listed under the *EPBC Act* are:

- World Heritage properties;
- National heritage places;
- Wetlands of international importance (Ramsar wetlands);
- Great Barrier Reef Marine Park;
- Commonwealth marine areas;
- Listed Threatened species'
- Listed ecological communities; and
- Listed Migratory species.

Assessment

The relevance of each matter of NES when considering the proposed development is discussed below in Table 8.1. This assessment was undertaken with reference to an Environment Protection and Biodiversity Conservation Act Online Database search, with a buffer area of 10 km. A copy of the EPBC search results is provided in Attachment B.

Table 8.1 - Consideration of EPBC Act Matters of NES

Consideration	Assessment
World Heritage Properties	The subject site is not listed as a World Heritage Area. There are no other World Heritage Areas listed in the locality.
National Heritage Places	The subject site is located in the Royal National Park and Garawarra State Conservation Area, which are included in the National Heritage List as a 'place of national significance' pursuant to section 324J of the *Environment Protection and Biodiversity Conservation Act 1999*. As detailed in **Section 5**, the proposed activity will not adversely impact upon the National Heritage Values of the Royal national Park. One other (historic) National Heritage Place is nominated for listing in the locality (Kamay, Botany Bay), however, the proposed activity will not affect this place.
Wetlands of International Significance (RAMSAR Wetlands)	The subject site is not located within an area of wetlands. The nearest RAMSAR wetland (Towra Point Nature Reserve) is located approximately 10 km to the east of the study area. The proposed activity will not impact upon Towra Point Nature Reserve.
Great Barrier Reef Marine Park	The Great Barrier Reef Marine Park is not in the locality.
Commonwealth Marine areas	There are no Commonwealth marine areas listed in the locality.
Listed Ecological Communities	Two EPBC-listed ecological communities occur within the locality (Littoral Rainforest and Coastal Vine Thickets of Eastern Australia and Turpentine-Ironbark Forest in the Sydney Basin Bioregion). These two communities do not occur on the subject site. The proposed clearing will therefore not affect any EPBC Act listed Ecological Communities.

Table 8.1 - Consideration of EPBC Act Matters of NES

Consideration	Assessment
Listed Threatened Species	A total of 57 EPBC-listed species are recorded as being in the locality (10 km radius). Of these, 10 species were considered as possibly occurring in the study area based on habitat requirements, these being: Giant Burrowing Frog (*Heleioporus australiacus*); Large-eared Pied Bat (*Chalinolobus dwyeri*); Grey-headed Flying-fox (*Pteropus poliocephalus*); Broad-headed Snake (*Hoplocephalus bungaroides*); Thick-leaf Star-hair (*Astrotricha crassifolia*); Camfield's Stringybark (*Eucalyptus camfieldii*); Small-flower Grevillea (*Grevillea parviflora subsp. parviflora*); Deane's Melaleuca (*Melaleuca deanei*); *Pimelea curviflora var. curviflora;* and Villous Mintbush (*Prostanthera densa*). None of the six flora species listed were located in the clearing area, though *Eucalyptus camfieldii* was tentatively identified approximately 200m form the study area. The four fauna species were subject to the s5A Assessment (**Section 5**), which concluded no significant impact. The proposed development is therefore considered unlikely to cause a significant impact to any Threatened species listed under the *EPBC Act.*
Listed Migratory Species	A total of 61 EPBC-listed migratory species were recorded as being in the locality. No habitat exists on the subject site for any of these listed migratory species. The proposed activity is therefore unlikely to cause a significant impact to any the listed migratory species, including those on JAMBA/CAMBA.

Other Matters Protected by the EPBC Act

In addition to the Matters of National Environmental Significance, consideration must be given to other matters protected by the *EPBC Act* when assessing proposals. These matters are summarised in **Table 8.2** and this assessment was undertaken with reference to an Environment Protection and Biodiversity Conservation Act Online Database search, with a buffer area of 10 km.

Table 8.2 - Consideration of Other Matters under EPBC Act

Consideration	Assessment
Commonwealth Lands	A total of 12 EPBC-listed Commonwealth Lands are recorded in the locality. None of these lands are located within the subject site. The proposed development will not impact upon any Commonwealth Lands.
Commonwealth Heritage Places	There is one EPBC-listed Commonwealth Heritage Place within the locality of the subject site (Indigenous- Cubbitch Barta National Estate Area). This place, however, is located 14 km to the west at Holsworthy. The proposed activity will therefore not impact upon any Commonwealth Heritage Places.
Listed Marine Species	The subject site is not located in a marine environment.
Whales and Other Cetaceans	The subject site is not located in a marine environment.
Critical Habitats	No critical habitats listed under the *EPBC Act* have been identified within the locality.
Commonwealth Reserves.	No Commonwealth Reserves occur within the locality.

Assessment Conclusion

It is submitted that the proposed activity will not result in the potential for a significant effect on Threatened Species and Threatened Ecological Communities listed under the *EPBC Act.*

There are no Wetlands of International Significance, Migratory Species, EPBC listed Threatened species or any other matters protected by the *EPBC Act* that will be significantly affected by the proposed development. It is therefore considered that the proposed development would not require Commonwealth approval under the provisions of the *EPBC Act.*

9. Conclusion

The proposed removal of 57.5 m2 (0.00575 ha) of vegetation around the perimeter fence of the compound is unlikely to result in a significant impact on any threatened species, populations of ecological communities. Further, Natural Heritage values of the Royal National Park as gazetted under the *Environment Protection and Biodiversity Conservation Act 1999* have been considered and it is concluded that the removal of this vegetation will not adversely impact upon these values of the Royal National Park. Implementation of appropriate mitigation as discussed in Section 8 will ensure that there are no adverse impacts on the surrounding vegetation and habitat as a result of the proposed vegetation removal.

Should you have any queries, please do not hesitate to contact the undersigned.

Yours faithfully
Orogen Pty Ltd

Signed copy on file

TONY FISH
Business Manager/Project Director

Figure 1 – Survey plan of site compound boundary and surrounding vegetation

Attachment A — Section 5A Assessment

Attachment B — EPBC Act Protected Matters Search Results

References

Beadle, N.C.W. (1981) *The Vegetation of Australia*. Cambridge University Press, Cambridge.

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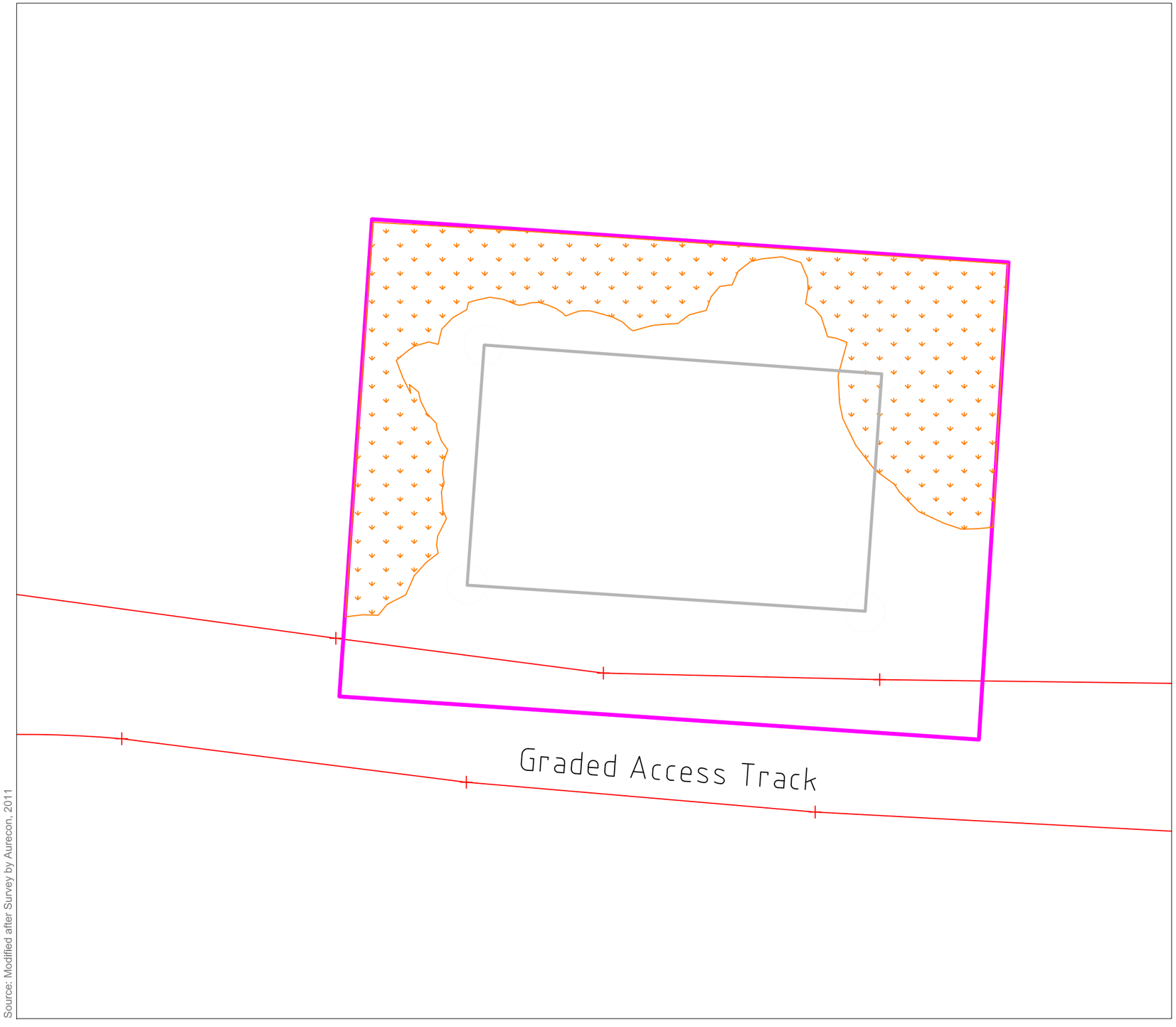

LEGEND

Site Compound Boundary

3 m boundary fence clearance

Low Dry Sclerophyll Open Woodland/Sandstone Open Heath Intergrade community - approximate area to be cleared = 0.00575 ha

Source: Modified after Survey by Aurecon, 2011

Figure 1 - Survey Plan of Site Compound Boundary and Surrounding Vegetation

Attachment A

Attachment A – Section 5A Assessment, Royal National Park, via Greenhaven Drive, Grays Point, NSW (October 2011)

1.1.1 Background

The *Threatened Species Conservation Amendment Act 2002* amended the *EP&A Act 1979* by the identification of seven (7) factors that must be considered when assessing the impacts of a particular proposal on Threatened species, populations and ecological communities. The objective of the Section 5A Assessment is to determine if a proposal is likely to have a *significant effect* on Threatened species, populations or ecological communities, or their habitats. This assessment was undertaken with reference to the Threatened species assessment guidelines — 'The assessment of significance' (DECC 2007).

1.1.2 Definitions

Local Population

The *TSC Act* defines a "local population" as "a population that occurs within the study area, unless the existence of contiguous or proximal occupied habitat and the movement of individuals or exchange of genetic material across the boundary of the study area can be demonstrated" (NPWS, 1996).

The local population of a species in the area of the proposal would be limited to the habitats in the local area, rather than the population residing within the study area. Although some individuals may reside within the study area, populations are generally linked to more extensive tracts of vegetation. For the purposes of this assessment the local population is considered as the population which resides within the subject site and habitats in the local area.

Viability of the Local Population

The Section 5A Assessment requires that a determination be made as to whether the viability of a local population will be compromised by the proposal in question. A viable local population is defined by the NPWS (1996) as "*a population that has the capacity to live, develop and reproduce under normal conditions*". In respect of the proposed clearing, to determine that the local population would be detrimentally affected, it would be necessary to prove that partial removal of the habitat within the study area would affect the life cycles of Subject Species to the extent that local populations may become extinct.

Regional Population

The term region is defined by the *TSC Act* as "a bioregion defined in a national system of bioregionalisation that is determined by the Director-General to be appropriate for those purposes". The study area is situated within the New South Wales Sydney Basin biogeographic region, which extends from the Hunter Valley south to about Nowra and westward to the coastal ranges (Thackway & Cresswell, 1995).

1.1.3 Subject Species

A 'Subject Species, Population or Ecological Community is defined as one which is:

- Listed in Schedules 1-3 under the TSC Act; and
- Either recorded or predicted to occur within the subject site based on site habitats and known species habitats and distribution; and

- Predicted to be impacted upon by the proposal (ie. occurs within an area proposed for disturbance).

A total of 33 Subject Species, Populations and Ecological Communities (10 plant species, 23 fauna species) were subject to the S5A Assessment for the Telstra proposal (refer **Section 5 of main report for a list of relevant Subject Species**).

The Section 5A Assessment is provided below in tablature form and is based on the removal of 57m^2 of native vegetation detailed in the accompanying ecology report prepared by Orogen.

Table A.1 - Section 5A Assessment

Part	Section 5A Criteria	Assessment
a)	*In the case of a Threatened species, whether the action proposed is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction*	The proposed activity is unlikely to have an adverse effect on the life cycle of any of the 33 subject species such that a viable local population is likely to be placed at risk of extinction. The removal of 57.5 m^2 of Sydney Sandstone Ridgetop Woodland/Open Heath/Open Scrub is considered 'negligible' in the context of the habitat available in the local conservation reserves and de facto reserves. None of the 33 subject species would be expected to be exclusively reliant on the 57.5 m^2 of Sydney Sandstone Ridgetop Woodland/Open Heath/Open Scrub proposed for removal on the site.
b)	*In the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction;*	Not Applicable. There will be no impact to any listed Endangered Populations.
c)	*In the case of a critically endangered or endangered ecological community, whether the action proposed:*	
	i) Is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or	Not Applicable. There will be no impact to any listed EECs.
	ii) Is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction;	Not Applicable. There will be no impact to any listed EECs.
d)	*In relation to the habitat of a threatened species, population or ecological community:*	
	i) The extent to which habitat is likely to be removed or modified as a result of the action proposed, and	Refer (a)
	ii) Whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and	No areas of habitat will become fragmented or isolated from other areas of habitat as a result of the proposed activity.
	iii) The importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.	Refer (a)

Table A.1 - Section 5A Assessment

Part	Section 5A Criteria	Assessment
e)	***Whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly);***	The proposed activity will not have an adverse effect on critical habitat.
f)	***Whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan;***	The removal of any potential habitat may not be considered consistent with particular objects of some recovery plans. Despite this, the habitat proposed to be removed is not considered a significant area (in terms of size and importance) for any of the subject species.
g)	***Whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process;***	
	Anthropogenic climate change	The use of machinery during construction and clearing of some vegetation will make a contribution to anthropogenic climate change through release of stored carbon from vegetation and greenhouse gas emissions associated with use of fossil fuels. The clearing of vegetation will also reduce the vegetation available for Carbon dioxide cycling.
	Clearing of native vegetation	The removal of 57.5 m^2 of Sandstone Ridgetop Woodland/Heath/Scrub intergrade will contribute to this KTP albeit to a minor extent.
	Bushrock removal	The proposal would be likely to involve the relocation of small outcrops of bushrock to adjoining (retained) woodland habitats for use as ground debris.
	Infection of native plants by Phytophthora cinnamomi	All Contractors would be inducted with a personal and vehicle hygiene protocol to minimise the likelihood of introducing plant pathogens to the site.
	Introduction and establishment of exotic rust fungi on plants of the family Myrtaceae	As above.
	Invasion and/or establishment of Native Plant Communities by Lantana camara*, exotic perennial grasses, and exotic vines and scramblers	The proposed clearing of vegetation would not be expected to provide opportunities for KTP listed weed species becoming established within or adjoining the clearing areas as once skeletal soils are removed with the vegetation, few weeds can successfully colonise bedrock without a soil horizon.
	The remaining KTP's listed by Schedule 3 the *TSC Act* are not considered relevant to the proposed activity.	

1.2 Conclusion

Based on information provided in Table A.1, it is concluded that the proposed activity is unlikely to have a significant effect on Threatened species, populations or ecological communities, or their habitats. The preparation of a Species Impact Statement is therefore not required for the proposed activity.

Attachment B

Australian Government
Department of Sustainability, Environment, Water, Population and Communities

EPBC Act Protected Matters Report: Coordinates

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information about the EPBC Act including significance guidelines, forms and application process details can be found at http://www.environment.gov.au/epbc/assessmentsapprovals/index.html

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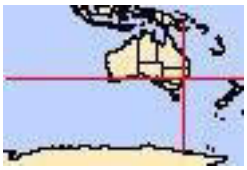

This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2010

Coordinates
Buffer: 10.0Km

Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance - see http://www.environment.gov.au/epbc/assessmentsapprovals/guidelines/index.html.

World Heritage Properties:	None
National Heritage Places:	2
Wetlands of International Significance (Ramsar Wetlands):	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Areas:	None
Threatened Ecological Communitites:	2
Threatened Species:	57
Migratory Species:	61

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place and the heritage values of a place on the Register of the National Estate. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage/index.html

Please note that the current dataset on Commonwealth land is not complete. Further information on Commonwealth land would need to be obtained from relevant sources including Commonwealth agencies, local agencies, and land tenure maps.

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species. Information on EPBC Act permit requirements and application forms can be found at http://www.environment.gov.au/epbc/permits/index.html.

Commonwealth Lands:	12
Commonwealth Heritage Places:	2
Listed Marine Species:	82
Whales and Other Cetaceans:	11

Critical Habitats:	None
Commonwealth Reserves:	None

Report Summary for Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

Place on the RNE:	37
State and Territory Reserves:	7
Regional Forest Agreements:	None
Invasive Species:	18
Nationally Important Wetlands:	1

Details

Matters of National Environmental Significance

National Heritage Places [Resource Information]

Name	Status
Natural	
Royal National Park and Garawarra State	Listed place
Historic	
Kamay Botany Bay NSW	Nominated place

Wetlands of International Significance (RAMSAR Sites) [Resource Information]

Name	Proximity
Towra point nature reserve	Within Ramsar site

Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Name	Status	Type of Presence
Littoral Rainforest and Coastal Vine Thickets of Eastern Australia	Critically Endangered	Community likely to occur within area
Turpentine-Ironbark Forest in the Sydney Basin Bioregion	Critically Endangered	Community likely to occur within area

Threatened Species [Resource Information]

Name	Status	Type of Presence
BIRDS		
Anthochaera phrygia Regent Honeyeater [82338]	Endangered	Species or species habitat likely to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area

Diomedea exulans antipodensis Antipodean Albatross [82269]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans gibsoni Gibson's Albatross [82271]	Vulnerable	Species or species habitat may occur within area
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area
Lathamus discolor Swift Parrot [744]	Endangered	Species or species habitat likely to occur within area
Macronectes giganteus Southern Giant-Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant-Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat may occur within area
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Vulnerable	Species or species habitat may occur within area
Sternula nereis nereis Fairy Tern (Australian) [82950]	Vulnerable	Species or species habitat known to occur within area
Thalassarche bulleri Buller's Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta cauta Shy Albatross, Tasmanian Shy Albatross [82345]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta salvini Salvin's Albatross [82343]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta steadi White-capped Albatross [82344]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris impavida Campbell Albatross [82449]	Vulnerable	Species or species habitat may occur within area
FISH		
Prototroctes maraena Australian Grayling [26179]	Vulnerable	Species or species habitat likely to occur within area
FROGS		
Heleioporus australiacus Giant Burrowing Frog [1973]	Vulnerable	Species or species habitat likely to occur within area
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat likely to occur within area
Litoria littlejohni		

Littlejohn's Tree Frog, Heath Frog [64733]	Vulnerable	Species or species habitat may occur within area
Litoria raniformis		
Growling Grass Frog, Southern Bell Frog, Green and Golden Frog, Warty Swamp Frog [1828]	Vulnerable	Species or species habitat may occur within area
Mixophyes balbus		
Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat likely to occur within area
MAMMALS		
Chalinolobus dwyeri		
Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat may occur within area
Dasyurus maculatus maculatus (SE mainland population)		
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat may occur within area
Eubalaena australis		
Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area
Isoodon obesulus obesulus		
Southern Brown Bandicoot [68050]	Endangered	Species or species habitat likely to occur within area
Megaptera novaeangliae		
Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Petrogale penicillata		
Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area
Potorous tridactylus tridactylus		
Long-nosed Potoroo (SE mainland) [66645]	Vulnerable	Species or species habitat may occur within area
Pseudomys novaehollandiae		
New Holland Mouse [96]	Vulnerable	Species or species habitat known to occur within area
Pteropus poliocephalus		
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
PLANTS		
Acacia bynoeana		
Bynoe's Wattle, Tiny Wattle [8575]	Vulnerable	Species or species habitat likely to occur within area
Acacia pubescens		
Downy Wattle, Hairy Stemmed Wattle [18800]	Vulnerable	Species or species habitat likely to occur within area
Astrotricha crassifolia		
Thick-leaf Star-hair [10352]	Vulnerable	Species or species habitat likely to occur within area
Caladenia tessellata		
Thick-lipped Spider-orchid,	Vulnerable	Species or species habitat likely to occur within area

Daddy Long-legs [2119]		
Cryptostylis hunteriana		
Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area
Eucalyptus camfieldii		
Camfield's Stringybark [15460]	Vulnerable	Species or species habitat likely to occur within area
Grevillea parviflora subsp. parviflora		
Small-flower Grevillea [64910]	Vulnerable	Species or species habitat likely to occur within area
Melaleuca biconvexa		
Biconvex Paperbark [5583]	Vulnerable	Species or species habitat may occur within area
Melaleuca deanei		
Deane's Melaleuca [5818]	Vulnerable	Species or species habitat likely to occur within area
Pimelea curviflora var. curviflora		
[4182]	Vulnerable	Species or species habitat likely to occur within area
Prostanthera densa		
Villous Mintbush [12233]	Vulnerable	Species or species habitat likely to occur within area
Pterostylis saxicola		
Sydney Plains Greenhood [64537]	Endangered	Species or species habitat known to occur within area
Syzygium paniculatum		
Magenta Lilly Pilly, Magenta Cherry, Pocket-less Brush Cherry, Scrub Cherry, Creek Lilly Pilly, Brush Cherry [20307]	Vulnerable	Species or species habitat likely to occur within area
Thelymitra sp. Kangaloon (D.L.Jones 18108)		
Kangaloon Sun-orchid [81971]	Critically Endangered	Species or species habitat may occur within area
Thesium australe		
Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area
REPTILES		
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
Hoplocephalus bungaroides		
Broad-headed Snake [1182]	Vulnerable	Species or species habitat likely to occur within area
Natator depressus		

Flatback Turtle [59257]	Vulnerable	Species or species habitat likely to occur within area
SHARKS		
Carcharias taurus (east coast population)		
Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Species or species habitat may occur within area
Carcharodon carcharias		
Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Pristis zijsron		
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat may occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

Migratory Species [Resource Information]

Name	Status	Type of Presence
Migratory Marine Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat may occur within area
Ardea alba		
Great Egret, White Egret [59541]		Species or species habitat may occur within area
Ardea ibis		
Cattle Egret [59542]		Species or species habitat may occur within area
Diomedea antipodensis		
Antipodean Albatross [64458]	Vulnerable*	Species or species habitat may occur within area
Diomedea gibsoni		
Gibson's Albatross [64466]	Vulnerable*	Species or species habitat may occur within area
Macronectes giganteus		
Southern Giant-Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli		
Northern Giant-Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Sterna albifrons		
Little Tern [813]		Species or species habitat may occur within area
Thalassarche bulleri		
Buller's Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta (sensu stricto)		
Shy Albatross, Tasmanian Shy Albatross [64697]	Vulnerable*	Species or species habitat may occur within area
Thalassarche impavida		
Campbell Albatross [64459]	Vulnerable*	Species or species habitat may occur within area
Thalassarche salvini		
Salvin's Albatross [64463]	Vulnerable*	Species or species habitat may occur within area
Thalassarche steadi		
White-capped Albatross [64462]	Vulnerable*	Species or species habitat may occur within area
Migratory Marine Species		
Balaenoptera edeni		
Bryde's Whale [35]		Species or species habitat may occur within area
Caperea marginata		
Pygmy Right Whale [39]		Species or species habitat may occur within area
Carcharodon carcharias		

Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
Eubalaena australis		
Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area
Lagenorhynchus obscurus		
Dusky Dolphin [43]		Species or species habitat may occur within area
Lamna nasus		
Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area
Megaptera novaeangliae		
Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Species or species habitat likely to occur within area
Orcinus orca		
Killer Whale, Orca [46]		Species or species habitat may occur within area
Rhincodon typus		
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Migratory Terrestrial Species		
Haliaeetus leucogaster		
White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Hirundapus caudacutus		
White-throated Needletail [682]		Species or species habitat may occur within area
Merops ornatus		
Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis		
Black-faced Monarch [609]		Breeding may occur within area
Myiagra cyanoleuca		
Satin Flycatcher [612]		Breeding likely to occur within area
Neophema chrysogaster		
Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat may occur within area
Rhipidura rufifrons		
Rufous Fantail [592]		Breeding may occur within area
Xanthomyza phrygia		
Regent Honeyeater [430]	Endangered*	Species or species habitat likely to occur within area
Migratory Wetlands Species		

Actitis hypoleucos Common Sandpiper [59309]	Foraging, feeding or related behaviour known to occur within area
Ardea alba Great Egret, White Egret [59541]	Species or species habitat may occur within area
Ardea ibis Cattle Egret [59542]	Species or species habitat may occur within area
Arenaria interpres Ruddy Turnstone [872]	Foraging, feeding or related behaviour known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Foraging, feeding or related behaviour known to occur within area
Calidris alba Sanderling [875]	Foraging, feeding or related behaviour known to occur within area
Calidris canutus Red Knot, Knot [855]	Foraging, feeding or related behaviour known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Foraging, feeding or related behaviour known to occur within area
Calidris ruficollis Red-necked Stint [860]	Foraging, feeding or related behaviour known to occur within area
Calidris tenuirostris Great Knot [862]	Foraging, feeding or related behaviour known to occur within area
Charadrius bicinctus Double-banded Plover [895]	Foraging, feeding or related behaviour known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Foraging, feeding or related behaviour known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Foraging, feeding or related behaviour known to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]	Foraging, feeding or related behaviour known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Foraging, feeding or related behaviour may occur within area
Heteroscelus brevipes Grey-tailed Tattler [59311]	Foraging, feeding or related behaviour known to occur within area
Limicola falcinellus Broad-billed Sandpiper [842]	Foraging, feeding or related behaviour known to occur within area

Limosa lapponica Bar-tailed Godwit [844]		Foraging, feeding or related behaviour known to occur within area
Limosa limosa Black-tailed Godwit [845]		Foraging, feeding or related behaviour known to occur within area
Numenius madagascariensis Eastern Curlew [847]		Foraging, feeding or related behaviour known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Foraging, feeding or related behaviour likely to occur within area
Numenius phaeopus Whimbrel [849]		Foraging, feeding or related behaviour known to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Foraging, feeding or related behaviour known to occur within area
Pluvialis squatarola Grey Plover [865]		Foraging, feeding or related behaviour known to occur within area
Rostratula benghalensis s. lat. Painted Snipe [889]	Vulnerable*	Species or species habitat may occur within area
Xenus cinereus Terek Sandpiper [59300]		Foraging, feeding or related behaviour known to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land - Director of War Service Homes
Commonwealth Land - Australian Postal Commission
Commonwealth Land - Telstra Corporation Limited
Commonwealth Land - Australian & Overseas Telecommunications Corporation
Commonwealth Land - Commonwealth Trading Bank of Australia
Commonwealth Land - Australian Nuclear Science & Technology Organisation
Defence - SUTHERLAND MULTI-USER DEPOT
Commonwealth Land - Australian Postal Corporation
Commonwealth Land - Defence Housing Authority
Commonwealth Land - Australian Telecommunications Commission
Commonwealth Land -
Commonwealth Land - Defence Service Homes Corporation

Commonwealth Heritage Places [Resource Information]

Name	Status
Indigenous	
Cubbitch Barta National Estate Area NSW	Listed place
Historic	

Cronulla Post Office NSW Nominated place

Listed Marine Species [Resource Information]

Name	Status	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Foraging, feeding or related behaviour known to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat may occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat may occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Arenaria interpres Ruddy Turnstone [872]		Foraging, feeding or related behaviour known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Foraging, feeding or related behaviour known to occur within area
Calidris alba Sanderling [875]		Foraging, feeding or related behaviour known to occur within area
Calidris canutus Red Knot, Knot [855]		Foraging, feeding or related behaviour known to occur within area
Calidris ferruginea Curlew Sandpiper [856]		Foraging, feeding or related behaviour known to occur within area
Calidris ruficollis Red-necked Stint [860]		Foraging, feeding or related behaviour known to occur within area
Calidris subminuta Long-toed Stint [861]		Foraging, feeding or related behaviour known to occur within area
Calidris tenuirostris Great Knot [862]		Foraging, feeding or related behaviour known to occur within area
Charadrius bicinctus Double-banded Plover [895]		Foraging, feeding or related behaviour known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]		Foraging, feeding or related behaviour known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]		Foraging, feeding or related behaviour known to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Foraging, feeding or related behaviour known to occur within area
Charadrius veredus		

Oriental Plover, Oriental Dotterel [882]		Foraging, feeding or related behaviour known to occur within area
Diomedea antipodensis		
Antipodean Albatross [64458]	Vulnerable*	Species or species habitat may occur within area
Diomedea gibsoni		
Gibson's Albatross [64466]	Vulnerable*	Species or species habitat may occur within area
Gallinago hardwickii		
Latham's Snipe, Japanese Snipe [863]		Foraging, feeding or related behaviour may occur within area
Gallinago megala		
Swinhoe's Snipe [864]		Foraging, feeding or related behaviour likely to occur within area
Gallinago stenura		
Pin-tailed Snipe [841]		Foraging, feeding or related behaviour likely to occur within area
Haliaeetus leucogaster		
White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Heteroscelus brevipes		
Grey-tailed Tattler [59311]		Foraging, feeding or related behaviour known to occur within area
Heteroscelus incanus		
Wandering Tattler [59547]		Foraging, feeding or related behaviour known to occur within area
Himantopus himantopus		
Black-winged Stilt [870]		Foraging, feeding or related behaviour known to occur within area
Hirundapus caudacutus		
White-throated Needletail [682]		Species or species habitat may occur within area
Lathamus discolor		
Swift Parrot [744]	Endangered	Species or species habitat likely to occur within area
Limicola falcinellus		
Broad-billed Sandpiper [842]		Foraging, feeding or related behaviour known to occur within area
Limosa lapponica		
Bar-tailed Godwit [844]		Foraging, feeding or related behaviour known to occur within area
Limosa limosa		
Black-tailed Godwit [845]		Foraging, feeding or related behaviour known to occur within area
Macronectes giganteus		
Southern Giant-Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli		
Northern Giant-Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Merops ornatus		
Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis		
Black-faced Monarch [609]		Breeding may occur within area
Myiagra cyanoleuca		
Satin Flycatcher [612]		Breeding likely to occur within area

Neophema chrysogaster		
Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat may occur within area
Numenius madagascariensis		
Eastern Curlew [847]		Foraging, feeding or related behaviour known to occur within area
Numenius minutus		
Little Curlew, Little Whimbrel [848]		Foraging, feeding or related behaviour likely to occur within area
Numenius phaeopus		
Whimbrel [849]		Foraging, feeding or related behaviour known to occur within area
Pluvialis fulva		
Pacific Golden Plover [25545]		Foraging, feeding or related behaviour known to occur within area
Pluvialis squatarola		
Grey Plover [865]		Foraging, feeding or related behaviour known to occur within area
Recurvirostra novaehollandiae		
Red-necked Avocet [871]		Foraging, feeding or related behaviour known to occur within area
Rhipidura rufifrons		
Rufous Fantail [592]		Breeding may occur within area
Rostratula benghalensis s. lat.		
Painted Snipe [889]	Vulnerable*	Species or species habitat may occur within area
Sterna albifrons		
Little Tern [813]		Species or species habitat may occur within area
Thalassarche bulleri		
Buller's Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta (sensu stricto)		
Shy Albatross, Tasmanian Shy Albatross [64697]	Vulnerable*	Species or species habitat may occur within area
Thalassarche impavida		
Campbell Albatross [64459]	Vulnerable*	Species or species habitat may occur within area
Thalassarche salvini		
Salvin's Albatross [64463]	Vulnerable*	Species or species habitat may occur within area
Thalassarche steadi		
White-capped Albatross [64462]	Vulnerable*	Species or species habitat may occur within area
Xenus cinereus		
Terek Sandpiper [59300]		Foraging, feeding or related behaviour known to occur within area
Fish		
Acentronura tentaculata		
Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area
Festucalex cinctus		
Girdled Pipefish [66214]		Species or species habitat may occur within area
Filicampus tigris		
Tiger Pipefish [66217]		Species or species habitat may occur within area
Heraldia nocturna		
Upside-down Pipefish, Eastern		Species or species habitat may occur within area

Upside-down Pipefish, Eastern Upside-down Pipefish [66227]	
Hippichthys penicillus	
Beady Pipefish, Steep-nosed Pipefish [66231]	Species or species habitat may occur within area
Hippocampus abdominalis	
Bigbelly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]	Species or species habitat may occur within area
Hippocampus whitei	
White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Species or species habitat may occur within area
Histiogamphelus briggsii	
Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]	Species or species habitat may occur within area
Lissocampus runa	
Javelin Pipefish [66251]	Species or species habitat may occur within area
Maroubra perserrata	
Sawtooth Pipefish [66252]	Species or species habitat may occur within area
Notiocampus ruber	
Red Pipefish [66265]	Species or species habitat may occur within area
Phyllopteryx taeniolatus	
Common Seadragon, Weedy Seadragon [66268]	Species or species habitat may occur within area
Solegnathus spinosissimus	
Spiny Pipehorse, Australian Spiny Pipehorse [66275]	Species or species habitat may occur within area
Solenostomus cyanopterus	
Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]	Species or species habitat may occur within area
Solenostomus paegnius	
Rough-snout Ghost Pipefish [68425]	Species or species habitat may occur within area
Solenostomus paradoxus	
Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]	Species or species habitat may occur within area
Stigmatopora argus	
Spotted Pipefish, Gulf Pipefish [66276]	Species or species habitat may occur within area
Stigmatopora nigra	
Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]	Species or species habitat may occur within area
Syngnathoides biaculeatus	
Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]	Species or species habitat may occur within area
Trachyrhamphus bicoarctatus	
Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish	Species or species habitat may occur within area

[66280]
Urocampus carinirostris
Hairy Pipefish [66282] Species or species habitat may occur within area
Vanacampus margaritifer
Mother-of-pearl Pipefish [66283] Species or species habitat may occur within area

Mammals

Arctocephalus forsteri
New Zealand Fur-seal [20] Species or species habitat may occur within area
Arctocephalus pusillus
Australian Fur-seal, Australo-African Fur-seal [21] Species or species habitat may occur within area

Reptiles

Caretta caretta
Loggerhead Turtle [1763] Endangered Species or species habitat likely to occur within area

Chelonia mydas
Green Turtle [1765] Vulnerable Species or species habitat known to occur within area

Dermochelys coriacea
Leatherback Turtle, Leathery Turtle, Luth [1768] Endangered Species or species habitat likely to occur within area
Eretmochelys imbricata
Hawksbill Turtle [1766] Vulnerable Species or species habitat likely to occur within area

Natator depressus
Flatback Turtle [59257] Vulnerable Species or species habitat likely to occur within area

Pelamis platurus
Yellow-bellied Seasnake [1091] Species or species habitat may occur within area

Whales and Other Cetaceans [Resource Information]

Name	Status	Type of Presence

Mammals

Balaenoptera acutorostrata
Minke Whale [33] Species or species habitat may occur within area
Balaenoptera edeni
Bryde's Whale [35] Species or species habitat may occur within area
Caperea marginata
Pygmy Right Whale [39] Species or species habitat may occur within area
Delphinus delphis
Common Dophin, Short-beaked Common Dolphin [60] Species or species habitat may occur within area
Eubalaena australis
Southern Right Whale [40] Endangered Species or species habitat known to occur within area

Grampus griseus
Risso's Dolphin, Grampus [64] Species or species habitat may occur within area
Lagenorhynchus obscurus
Dusky Dolphin [43] Species or species habitat may occur within area
Megaptera novaeangliae
Humpback Whale [38] Vulnerable Species or species habitat known to occur within area

Orcinus orca Killer Whale, Orca [46]	Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]	Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]	Species or species habitat may occur within area

Extra Information

Places on the RNE **[Resource Information]**

Note that not all Indigenous sites may be listed.

Name	Status
Natural	
Bundeena Headland NSW	Indicative Place
Georges River Wetlands NSW	Indicative Place
Prince Edward Park NSW	Indicative Place
Shiprock Aquatic Reserve NSW	Indicative Place
Heathcote National Park NSW	Registered
Kurnell Peninsula Towra Point Area NSW	Registered
Marley Lagoon Basin NSW	Registered
Royal National Park (1977 boundary) NSW	Registered
Towra Point Aquatic Reserve NSW	Registered
Indigenous	
Gymea Bay Rock Shelter NSW	Indicative Place
Cubbitch Barta National Estate Area NSW	Registered
Curracurrang Area NSW	Registered
Uloola Area NSW	Registered
Woronora Area NSW	Registered
Historic	
Carss Bush Park Pool NSW	Indicative Place
Carss Park Urban Conservation Area NSW	Indicative Place
Como Pleasure Grounds NSW	Indicative Place
Como Tidal Pool NSW	Indicative Place
Connells Point Pool Remnants NSW	Indicative Place
Cronulla Beach Pool NSW	Indicative Place
Cronulla Main Ocean Pool NSW	Indicative Place
Cronulla Post Office NSW	Indicative Place
Cronulla Rock Pool NSW	Indicative Place
Gunnamatta Park Baths NSW	Indicative Place
Heathcote Railway Residences NSW	Indicative Place
Illawarra Aerial Telegraph Line NSW	Indicative Place
Lilli Pilli Baths NSW	Indicative Place
Lyons House NSW	Indicative Place
Oatley Park Pool NSW	Indicative Place
Oatley Urban Conservation Area NSW	Indicative Place
Old St Marks Church NSW	Indicative Place
Penshurst Urban Conservation Area NSW	Indicative Place
Sans Souci Baths Remnants NSW	Indicative Place
Woronora Crematorium NSW	Indicative Place

Woronora General Cemetery NSW	Indicative Place
Bonnie Vale Cabin Community NSW	Registered
Como Rail Bridge NSW	Registered

State and Territory Reserves [Resource Information]

Towra Point, NSW
Shiprock, NSW
Royal, NSW
Georges River, NSW
Towra Point, NSW
Towra Point - Stink Pot Bay, NSW
Heathcote, NSW

Invasive Species [Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Frogs		
Bufo marinus Cane Toad [1772]		Species or species habitat likely to occur within area
Mammals		
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Alternanthera philoxeroides Alligator Weed [11620]		Species or species habitat likely to occur within area
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Cabomba caroliniana Cabomba, Fanwort, Carolina Watershield, Fish Grass, Washington Grass, Watershield, Carolina Fanwort, Common Cabomba [5171]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lantana camara		

Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]	Species or species habitat likely to occur within area
Lycium ferocissimum	
African Boxthorn, Boxthorn [19235]	Species or species habitat may occur within area
Nassella neesiana	
Chilean Needle grass [67699]	Species or species habitat likely to occur within area
Nassella trichotoma	
Serrated Tussock, Yass River Tussock, Yass Tussock, Nassella Tussock (NZ) [18884]	Species or species habitat likely to occur within area
Pinus radiata	
Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]	Species or species habitat may occur within area
Rubus fruticosus aggregate	
Blackberry, European Blackberry [68406]	Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtiji	
Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]	Species or species habitat likely to occur within area
Salvinia molesta	
Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]	Species or species habitat likely to occur within area
Ulex europaeus	
Gorse, Furze [7693]	Species or species habitat likely to occur within area

Nationally Important Wetlands **[Resource Information]**

Towra Point Estuarine Wetlands, NSW

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World Heritage and Register of National Estate properties, Wetlands of International Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from

recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are indicated under 'type of presence'. For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

Only selected species covered by the following provisions of the EPBC Act have been mapped:
- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:
- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:
- non-threatened seabirds which have only been mapped for recorded breeding sites;
- seals which have only been mapped for breeding sites near the Australian continent.

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-34.05755 151.07025

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Department of Environment, Climate Change and Water, New South Wales
-Department of Sustainability and Environment, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment and Natural Resources, South Australia
-Parks and Wildlife Service NT, NT Dept of Natural Resources, Environment and the Arts
-Environmental and Resource Management, Queensland
-Department of Environment and Conservation, Western Australia
-Department of the Environment, Climate Change, Energy and Water
-Birds Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-SA Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium

-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Atherton and Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
-State Forests of NSW
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

Department of Sustainability, Environment, Water, Population and Communities
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Telecommunication Towers in Bush Fire Prone Areas

This Practice Note provides direction on the application of bush fire protection measures to Telecommunication Towers in Bush Fire Prone Areas.

Towers in Bush Fire Prone Areas are critical infrastructure for fire fighting communications and for providing warnings, information and communication channels for people in bush fire prone areas during bush fire emergencies.

Telecommunications sites support wide range of communications services, broadly they are those sites that have infrastructure associated with mobile phones, internet, microwave radio links, trunk mobile radio or private mobile radio (PMR). In some instances, a number of users establish autonomous sites adjacent to one another at the same geographic location. This is variable depending on the size, purpose, complexity and remoteness of the site and could be one hut connected to a shared antenna on a tower alternatively, It could be multiple huts on a location and connected to multiple towers.

As such, a 'precautionary approach' should be taken with respect to critical infrastructure associated with communications during emergencies.

Actions should be taken by owners/ operators to reduce the risk of loss of such infrastructure and associated infrastructure from the effects of bush fire attack.

The asset protection zone is only concerned with the underlying infrastructure required to support such services which are predominately structures and buildings. Essential equipment should be designed and housed in such a way as to minimise the impact of bush fires on the capabilities of the infrastructure to provide communications capability during bush fire emergencies.

When the RFS is asked for comment on new towers or for existing towers, a 10 metre APZ from the tower/ buildings/ infrastructure associated with the tower shall be provided.

Infrastructure does not include:

- road access to the site;
- power or other services to the site;
- associated fencing;

The APZ must be free of surface fuel and elevated fuel and should have minimum canopy.

When RFS provides comments on critical telecommunications infrastructure a recommendation to the owner of the critical infrastructure is made that the materials be designed to withstand 40kWm2 of radiant heat and to withstand ember penetration into the structure and associated infrastructure.

When considering notices to manage fuel, distances should be consistent with the above criteria.

Owners/operators of critical telecommunications infrastructure may accept the risk of loss of the structure from the effects of bush fire.

However, the RFS does not accept loss of such structures as it will have a direct impact on life safety within the fire ground.

Definitions

Critical telecommunications infrastructure is identified in a Bush Fire Risk Management Plan.

A **location** is defined as the area of land which includes one or more co located Telecommunications sites.

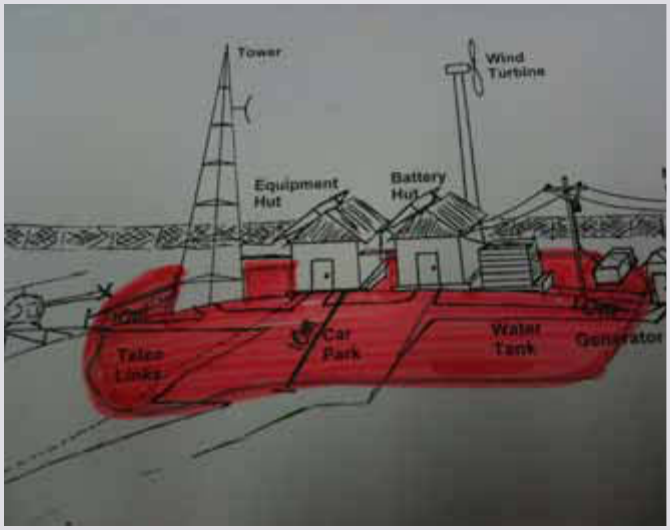

Figure 1: 10 metre APZ from the tower/ buildings/ infrastructure

Before

PROPOSED TELSTRA FACILITY

After

This is a representation only. The final installation may vary slightly in size,

Rev.	Date	Created	Revision Description
A	15.12.10	ZV	Preliminary

pixelwise
4/35 Morton St
Wollstonecraft
NSW 2065
P: +61 2 9460 2919
F: +61 2 9460 1673
www. pixelwise.com.au

aurecon
116 Military Road
Neutral Bay NSW 2089
P: +61 2 9465 5599
F: +61 2 9465 5598

Site Address
356 Plan MP144 Audley Rd
Royal National Park
Grays Point, NSW 2232

Drawing title
Photomontage View 1

BTS Site Name :
Grays Point

Site Number. :
N109299

Drawing No. :
M01

Telstra

Photographer :

Checker :

Approved :

Date :
15.12.10

REV.
A

PROPOSED TELSTRA FACILITY

Before

After

This is a representation only. The final installation may vary slightly in size,

Rev.	Date	Created	Revision Description
A	15.12.10	ZV	Preliminary

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F: +61 2 9465 5598

Site Address
356 Plan MP144 Audley Rd
Royal National Park
Grays Point, NSW 2232

Drawing title
Photomontage View 2

BTS Site Name :
Grays Point

Site Number. :
N109299

Drawing No. :
M02

Telstra

Photographer :

Checker :

Approved :

Date :
15.12.10

REV.
A

PROPOSED TELSTRA FACILITY

Before

After

This is a representation only. The final installation may vary slightly in size,

Rev.	Date	Created	Revision Description
A	15.12.10	ZV	Preliminary

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116 Military Road
Neutral Bay NSW 2089
P: +61 2 9465 5599
F: +61 2 9465 5598

Site Address
356 Plan MP144 Audley Rd
Royal National Park
Grays Point, NSW 2232

Drawing title
Photomontage View 3

BTS Site Name :
Grays Point

Site Number. :
N109299

Drawing No. :
M03

Telstra

Photographer :

Checker :

Approved :

Date :
15.12.10

REV.
A

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Australia

Phone: + 61 2 8577 1200
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1 August 2012

Attention: Liz Easton

Site No. 257459 **Site name: Grays Point**

1. Introduction

This report outlines the methodology for constructing a new Telstra mobile communication tower and associated equipment comprising of the following:

- A security fence around compound that measures 6m x10m
- Panel antennas (3off) secured to a concrete monopole which is 35m high.
- A prefabricated shelter (2.2mx3.2mx2.99m high) to house the telecommunications equipment
- A prefabricated concrete monopole that is 35m high and 5.1m below ground.
- Feeder cables (6off) to carry the signal from the pole mounted antennas to the communications equipment – Feeders cables are run inside the pole to avoid unsightly attachments to the pole.

2. Sustainability Measures

The site when up and running is very energy efficient and has nil water usage due to the following features:

- The ground around the compound is cleared from ground vegetation and shrubs as noted on the drawings. The cleared area is finished with 100mm thick layer of gravel on weed matt to control weeds and eliminate the use of herbicide to control weed growth.
- No new plants will be added around the compound which eliminate water usage and reduce the risk from fires propagating from the hut in the low probability event electrical equipment may catch fire.
- The shelter is prefabricated from refrigeration type panels to reduce solar heat gains and thereby minimise air conditioning loads and electrical consumption
- The temperature inside the hut is controlled by three stages of cooling to reduce electrical energy consumption:
    - Stage one is by natural ventilation utilising strategically located vents in the shelter
    - Stage two by the use of high efficiency DC fans when the internal hut temperature raises to between 25 and 28^{O}C and
    - Stage three with cooling only air conditioning unit when the internal hut temperature exceeds 28^{O}C.

- The use of pre-galvanised steel and concrete will minimise onsite maintenance and eliminate the need for painting thereby removing the risk of any chemical contamination from paint spills.
- The pole is constructed from steel re-enforced concrete to give long service life and low maintenance which further eliminates the need to bring heavy vehicles to site after the pole is installed.
- The feeders that carry the signal from the antennas to the communication shelter are made from recycled and raw copper and run inside the pole to improve the aesthetics.
- The monopole pole, shelter and equipment are all constructed from materials which can be recycled at the end of their service life.
- The hut is fitted with batteries that provide 8-hours of back up in the event of mains failure which avoids the need to install standby diesel generators and diesel tanks on site. Batteries are more efficient over their lifecycle and will be recycled at the end of their economic life.
- During construction temporary amenities will be installed on site for use by construction works. These will be removed once the site works are complete.

3. Electrical Power and fibre cable

The electrical power and fibre is brought to site through underground conduits buried in the access track. The conduits are laid in a 750mm deep X 300mm wide trench between the proposed site and Greenhaven road.

Once the conduits and pits are installed, all surfaces will be restored to pristine conditions. The conduits will have spare capacity for future fibre cables to avoid cutting up the access track again.

4. Construction timetable and equipment

The duration of construction period will take about 4-5 weeks from start to finish (assuming fine weather is experienced). All travel to site will be via Greenhaven road, Grays point.

To construct the works will require light weight vans to carry tools, a coring rig, a 60-80 tonne crane and cherry picker to install the new telecommunications tower:

- Flat top trucks to deliver the hut, monopole sections and materials
- The coring rig will be on site for 1 day
- Concrete delivery trucks for 1 day
- the crane will be on site for 5 days in the 5 week period
- Cherry picker will be on site for about 5-7 days in the 5 week period

All construction vehicles and plant will travel to sight via the access road weather permitting. If the road is very wet and soggy, vehicles will not be allowed to use the access track.

The proposed working hours during the construction period will be from 7:00AM to 5:00 PM Monday to Saturday.

5. Materials handling

A drilling rig will be floated to site to make the core hole which is 1500mm dia. by 5000mm deep. All dirt will be recycled for fill where possible depending on the degree of rock encountered.

Two concrete trucks will deliver the required concrete to fill in the pier around the pole butt.

Flat top trucks will be used to deliver the hut, monopole sections, Antenna mounts and materials. A boggy truck will be used to remove the spoil from site and delivery to a waste management depot.

All materials except the pole sections will be stored within the Telstra's compound. The pole sections will be delivered on the day when they will be installed to avoid long term site storage.

All rubbish will be removed from site on a daily basis.

6. Signage

The compound will have construction signs posted during construction to avoid persons wrongly entering the compound and to ensure safe work practices are adhered to.

At completion of the works there will be Telstra standard radiation Hazard and private property sign around the compound.

7. Remediation

The site will be left in a clean state with rubbish all removed from site and workmanship carried out to meet Australian Standards and local authority requirements.

The access track will be repaired were damaged by heavy vehicles and left in good conditions.

All trees and shrubs will not be disturbed unless by approval as per the approved drawings and DA conditions.

The compound will be surfaced with a 100mm thick gravel layer to provide natural water drainage, prevent weed growth and provide a safe all weather access around the telecommunications equipment.

Billy Mikhael
Project Specialist
Wireless Group
Silcar Communications

SILCAR Communications

SWMS / RISK ASSESSMENT RECORD

Assessment of	Construction of New Telstra RBS Site	Next Review Date	**TBA**	**Ref No.**	Grayspoint-SWMS01
Personnel Consulted	Billy Mikhael			Date	26/3/12
Evaluation Personnel Consulted	Roger Shallow, Darren Dacich			Date	26/3/12
Approved by	Billy Mikhael	Position	Project Specialist	Signed	*Billy Mikhael*
				Date	27/3/12

Updated due to: Legislation Change ☐ Incident ☐ Procedural Change ☐ Other *specify* _____

Remember to:

- *Inspect the site and surrounds*
- *consider not only your normal operation but others in your work space*
- *talk to people who work with you*
- *consider environment considerations, extremes in weather, wind, rain, heat*
- *use the risk rating matrix & hierarchy of controls to minimize hazards*

Additional hazards are listed in the Prompt Sheet at the end of this document

Think Incident Free!

WORK SAFELY – consider these 4 points!

PLANNING	PROPER TOOLS & EQUIPMENT
I do understand the task and how to perform it I have identified all associated hazards I have considered all safe work practices that apply to this task Do I need help to do this work safely?	I've the correct tool(s) & equipment to complete the task I've checked if tools / /equipment are in good working condition? I have the correct PPE I needed All electrical tools are correctly tagged
TRAINING	**STATE OF MIND**
I am trained to use the equipment and/or tools required? I have be deemed competent to do this work I understand the SOP / JSA for this task	**I will stay out of the line of fire!** I will give my full attentions to the task I will stop & redo my plan if something unforeseen happens? I am meeting or exceeding safety for this task

Risk Rating Matrix

Consequence → / Likelihood ↓	**Low (C1)** Near Hit with NO injury, but potential to cause injury Environmental incident with potential to damage the environment but with NO actual damage	**Minor (C2)** Minor Injury requiring first aid treatment, cuts/bruises (no stitches required), minor burns Minor Environmental release. Impact immediately managed or contained	**Moderate (C3)** Medical Treatment Injury recovery is likely, broken bones, stitches, burns requiring medical attention Environmental release with moderate detrimental effects requiring remedial action, reportable to authorities	**Major (C4)** Lost Time Injury, hospitalisation, permanent disability, serious internal and/or head injuries Environmental non-permanent impact with major detrimental effects	**Critical (C5)** Fatality or permanent disability to ten or more people Environmental permanent & significant impact in significant areas
Rare (L1) The event will occur only in exceptionally rare circumstances	**L2**	**L3**	**L4**	**M5**	**M6**
Unlikely (L2) The event may occur at some time but is unlikely to do so	**L3**	**L4**	**M5**	**M6**	**H7**
Possible (L3) The event could occur	**L4**	**M5**	**M6**	**H7**	**H8**
Likely (L4) The event will occur in most circumstances and is likely to do so	**M5**	**M6**	**H7**	**H8**	**E9**
Almost certain (L5) The event will almost certainly occur	**M6**	**H7**	**H8**	**E9**	**E10**

SWMS / RISK ASSESSMENT RECORD

Description of Task	**Construct new Telstra RBS in Gray's Point – Located in National Park**

Assessment							**Treatment Actions**					
Item	Activities *All steps and conditions*	Possible Hazard *Problem*	Risks / Impacts *Harm*	Initial Risk			Risk Control/Treatment *What will be done to make it safe?*	Personnel Responsible *Who will make it happen?*	Completion *Date and sign off*	Residual Risk		
				L	C	S				L	C	S
1.	Preliminary activities	• Unaware of site conditions /rules concerning work in NSW National parks and wildlife services • Unaware of project scope, NSW National Parks and wildlife services and council requirements	• Injury to persons and/or damage to property. • Unauthorised entry to areas causing damage. • Unauthorised works occurring putting people in danger.	2	2	L4	• Read Permit conditions • Induct all potential staff and visitors who will be expected to visit site • Advise of all site conditions and any permit conditions • Nominate appropriate PPE to be worn (long pants, safety boots, long sleeve shirt, hard hats, gloves, eye wear) • Work within Lease area only • Toolbox weekly to advise of safety and rules •	Contractor TBA Aurecon Parks and wild life protection officer		1	2	L3
2.	Confirm all construction certificates and insurances are available	• Workers conducting works without any licences, permits or certificates to carry out appropriate task. • Workers conducting works without any insurance protection	• Non-licenced workers can incur major fines and cause works to stop. • No insurance protection can cause large financial loss to stakeholders especially should a major incident occur.	2	3	M5	• Elimination: Non licenced workers cannot work on site. Insurance certificates must be available before works commence on site. • Substitution: Replace non-qualified contractors with more suitable and qualified contractors. • Admin: Ensure all necessary licence, Green card, permits and other trade certificates as well as any insurance certificates are available prior to commencement of works.	Contractor TBA Aurecon Telstra		1	3	L4

SILCAR Communications

SWMS / RISK ASSESSMENT RECORD

Description of Task	**Construct new Telstra RBS in Gray's Point – Located in National Park**

Assessment							**Treatment Actions**					
Item	Activities *All steps and conditions*	Possible Hazard *Problem*	Risks / Impacts *Harm*	Initial Risk			Risk Control/Treatment *What will be done to make it safe?*	Personnel Responsible *Who will make it happen?*	Completion *Date and sign off*	Residual Risk		
				L	C	S				L	C	S
3.	Mobilise to site	• Vehicular collisions • Physical injury • Equipment damage • Property damage • Logistics • Local Flora and Fauna	• Persons being injured during delivery of materials to site • Damage to surrounding property • Poor vehicle used for the available access • allergies plants and insects • animal bites	2	2	L4	• Eliminate: Reduce the amount of travel required, plan and combine visits. • Engineer: Purchase / hire appropriate safe vehicles (Air bags, 4-wheel drive). Provide hands-free mobiles. • Admin: Driver safety to be given during induction training. Talking on the phone is to be avoided. Make calls only when parked, use rest stops or service areas in preference to parking at road side. Minimise duration of phone calls received on hands free. • PPE: Boots, gloves, hard hat, High visibility vests, insect repellent, harness • Plan what materials need to move to site and ensure that correct truck and vehicles are available for the road conditions • Check medical history of all staff to confirm if free of allergies • Document action plan to respond animal bites	Contractor TBA		1	2	L3

Hierarchy or Preferred Order of Control

(1) Eliminate the hazard, remove the hazard or process from the workplace.	**(3) Isolate** the hazard, ie. installing screen or barriers, marking off hazardous areas	**(5) Administrative control**, introducing work practices that reduce the risk, i.e. limiting the amount of time a person is exposed to a particular hazard
(2) Substitute or replace the hazard or hazardous work practice with a less hazardous one	**(4) Engineer** the hazard out ie. modifications to tools or equipment, guarding to machinery	**(6) Personal protective equipment**

Description of Task	**Construct new Telstra RBS in Gray's Point – Located in National Park**

Assessment							**Treatment Actions**					
Item	Activities *All steps and conditions*	Possible Hazard *Problem*	Risks / Impacts *Harm*	Initial Risk			Risk Control/Treatment *What will be done to make it safe?*	Personnel Responsible *Who will make it happen?*	Completion *Date and sign off*	Residual Risk		
				L	C	S				L	C	S
4.	Site establishment and set out	• Slips, trips • falls from height, • minor cuts and abrasions • Manual Handling • Incorrect tools for task at hand	• Injury to persons • Damage to surroundings	2	2	L4	• Eliminate: Barricades to be used where necessary. • Admin: Ensure all staff are site inducted and are aware of site specific hazards and adequately trained to complete task at hand. • PPE: All staff to use appropriate Boots, gloves, hard hat, High visibility vests, insect repellent, harness	Contractor TBA		1	2	L3
5.	Lifting and Carrying	• Crush injury • Manual handling • Dropped loads	• Severe body injury/Death • Back & shoulder injuries • Muscular problems • Strains and sprains • Foot injuries	3	4	H7	• Eliminate: • Substitute: Subcontractor to use mechanical lifting equipment • Engineer: Subcontractor to consider sorting Equipment / material to in sizes which can be carried safely by personnel. • Admin: Training is to be provided. See Manual Handling procedure • PPE: Steel toe capped boots, Gloves to be used, dependent on the item being lifted.	Contractor TBA		1	4	M5

Hierarchy or Preferred Order of Control

(1) Eliminate the hazard, remove the hazard or process from the workplace.	**(3) Isolate** the hazard, ie. installing screen or barriers, marking off hazardous areas	**(5) Administrative control**, introducing work practices that reduce the risk, i.e. limiting the amount of time a person is exposed to a particular hazard
(2) Substitute or replace the hazard or hazardous work practice with a less hazardous one	**(4) Engineer** the hazard out ie. modifications to tools or equipment, guarding to machinery	**(6) Personal protective equipment**

Description of Task	**Construct new Telstra RBS in Gray's Point – Located in National Park**

Assessment							**Treatment Actions**					
Item	Activities *All steps and conditions*	Possible Hazard *Problem*	Risks / Impacts *Harm*	Initial Risk			Risk Control/Treatment *What will be done to make it safe?*	Personnel Responsible *Who will make it happen?*	Completion *Date and sign off*	Residual Risk		
				L	C	S				L	C	S
6.	Construction work in National parks areas	• Workers and hikers entering the National Park • EWP / crane overturning • Excavated materials being washed into the streams • Cigarette Smoking	• Bush fire • Damage access road and put public at risk. • Cause fire and put environment, animal life at risk • Discarded cigarette butts ignite brush and grass	2	4	M6	• Eliminate: setup crane/EWP in position such that it will not overturn • Eliminate: enforce no smoking policy while in National parks area • Substitute: Alternatively setup crane/EWP in position to minimise risk of overturning. • Substitute: Where the forecast is for a catastrophic fire danger, liaise with Manager /Supervisor to reschedule the job where possible. • Engineer: apply Geotech certificate and report for loading capacity of surrounding and setup areas. • Admin: Site specific induction incorporating hazards relating access track and natural work area. • PPE: Any workers around crane to have safety boots, hard hats, high vis vests, insect repellent. • Provide all with fire training and the use of fire extinguishers	Contractor TBA		1	4	M5

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(2) Substitute or replace the hazard or hazardous work practice with a less hazardous one	**(4) Engineer** the hazard out ie. modifications to tools or equipment, guarding to machinery	**(6) Personal protective equipment**

Description of Task	**Construct new Telstra RBS in Gray's Point – Located in National Park**

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Item	Activities *All steps and conditions*	Possible Hazard *Problem*	Risks / Impacts *Harm*	Initial Risk			Risk Control/Treatment *What will be done to make it safe?*	Personnel Responsible *Who will make it happen?*	Completion *Date and sign off*	Residual Risk		
				L	C	S				L	C	S
7.	Working at height, unprotected edge, from EWP or ladder.	• Fall from height • Falling objects (See Working outdoors)	• Physical injury • Disablement • Death	3	4	H7	• Eliminate: Subcontractor is to consider completing work on the ground to reduce time spent at height • Substitute: Subcontractor is to consider the use of EWP. • Engineer: Use all approved EWP or ladders that have been inspected and tested. • Admin: Subcontractor is to ensure: Qualified riggers are only personnel allowed to climb / work on towers; Tools are to be secured with lanyard to prevent failing; Area under the work is to be barricaded to prevent thoroughfare; If fall arrest system is used, ensure trained rescue personnel are on standby. Site induction to include WAH & fall arrest requirements. • PPE: Boots with grip, high visibility vest, fall arrest equipment, Hard hats with chin strap, insect repellent	Contractor TBA		1	4	M5

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				L	C	S				L	C	S
8.	Mark out new slab footing, trenches and general site layout for Telstra compound	• Sharps branches • Slips, trips • Incorrect tools for task at hand • Damage to surrounding	• minor cuts and abrasions • Damage to surroundings • Injury to persons	2	2	L4	• Substitute: Do not use hazardous markers, which could damage environment. MSDS for line marking paint to be kept in MSDS information pack. • Engineer: Barricades to be used around work area and where necessary. • Admin: Ensure all staff are site inducted and are aware of site specific hazards and adequately trained to complete task at hand. Check for uneven ground and rocks where appropriate. • PPE: Wear appropriate safety gear (boots long pants, gloves, mask, etc…)	Contractor TBA		1	2	L3
9.	Remove/trim tree branches	• Fall from heights • Physical injury • Equipment/property damage • Slips/trips	• minor cuts and abrasions • Injury to persons • Environmental damage • Property damage	2	3	M5	• Isolate: Barricade surrounding area. • Engineer: Use approved elevation platforms. Use approved cutting tools. • Admin: Put construction signage in work area • PPE: Wear appropriate clothing (boots, gloves, eye wear, long sleeve, insect repellent, pants and shits)	Contractor TBA		1	3	L4

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				L	C	S				L	C	S
10.	Excavation	• Dust / Noise. • Confined space - if more than 1.8 m deep. • Caving in of sides. • Slips and trips. • Falls into excavated pier. • Manual handling • Faulty machinery	• Physical injury to hikers and staff • Property damage • Environmental damage	2	4	M6	• Eliminate: Conduct a dial before you dig. Conduct surface scan of area for underground services. • Eliminate: Keep plant well maintained • Isolate: Use barricades around work area especially the pole pier. • Engineer: Site excavation to avoid existing services where possible. Refer to Geotech report to prevent collapse.(Check depth) • Admin: Subcontractor to ensure spoil is piled at least 3m from excavation edge. Remove from site if weather forecast is for rains. Keep vehicles / plant a safe distance away from edges, pump ground water out of the excavation. Use ditches to divert surface water. Do not use portable generators inside excavation. Use artificial lighting if required. Ensure suitable access. Barricade and use signage. Cover all open excavation and barricade. • PPE: Hard hat, steel toe cap boots, high visibility vest, insulated equipment	Contractor TBA		1	4	M5

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				L	C	S				L	C	S
11.	Use of diesel or hazardous chemicals or dangerous goods	• Explosion • Toxic solids, liquids & vapours, fumes	• Physical injury • Burns • poison • Asphyxiation • Death • Environmental impact	2	3	M5	• Eliminate: Avoid using toxic chemicals if other alternative is possible and locate diesel generators well away from flammable materials • Substitute: Subcontractor to select less toxic chemical where possible. • Engineer: Subcontractors to Barriers / ensure Isolation where possible • Admin: Conduct risk assessment for use, storage, transport and environmental impact on each chemical used. Train personnel on mitigation of Hazchem / dangerous goods. Train personnel on emergencies (spill kits). • PPE: gloves, eye protection goggles, Spill kits, Hazchem suit, mask, breathing apparatus; suitable PPE maybe required	Contractor TBA		1	3	L4

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				L	C	S				L	C	S
12.	Pour concrete Slab and Pole footings	• Manual Handling • Slips/trips, cuts and abrasions • Falls from heights • Incorrect tools for task at hand • Excessive concrete • Exposure to concrete	• Injury to persons • Concrete dumped in surroundings • Environmental impact • Asphyxiation • Acid burns	3	3	M6	• Elimination: Use qualified concrete company. • Engineer: Accurately measure concrete amount. Any excessive concrete to be disposed of correctly. • Admin: Mark out position of concrete truck to stop avoiding any concrete spoil outside Telstra boundary. • Provide trip free work zone and barriers to avoid falling in pier full of concrete slurry • Put construction signage in work area • PPE: boots, gloves, high vis vest	Contractor TBA		1	3	L4

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				L	C	S				L	C	S
13.	Connect Electrical services to the supply point and energising hut	• Electrocution • Equipment damage • Manual handling • Working from Heights	• Personal injury • Death • Physical injury • Crush injury • Damage to Telstra equipment property	3	4	H7	• Eliminate: Power down LV power prior to commencing work. Confirm no power with electrical tests meter. • Substitute: Only qualified electrical contractors to carry out isolation works. • Isolate: Use insulation on cables around work area. • Engineer: All EWP, cranes to be reviewed prior to carrying out works. Only qualified personnel to use machine. • Admin: Only Licensed Electricians are allowed to perform electrical work. Check for live cables prior to commencing work – employ level 2 electrical contractor to connect consumer mains at the supply point. Switchboards can have multiple power sources. • Barricade work area. Lockout and tag live electrical circuits. • PPE: Use insulated equipment, fibreglass ladders, Gloves, mat, Safety kit, Harness	Contractor TBA		1	4	M5

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				L	C	S				L	C	S
14.	Lift and position Monopole sections into position.	• Excessive loads • Poor crane setup • Pole falling • Working from heights • Excess rain – poor soil loading capacity	• Major injury /Death • Damage to surrounding environment • Major equipment damage • Physical injury / Crush Injury • Crane tipping over / damaging	4	4	H7	• Only qualified riggers to carry out works. • Engineer: All EWP and crane maintenance records to be reviewed prior to carrying out works. Only qualified personnel to use machine. Use correct lifting procedures and a qualified crane company. • Admin: Barricade work areas to prevent hikers moving into the work zone. Have all permits licences and crane documentation prior to commencement of crane lift. • Check softness of soil prior to crane setup • PPE: Use Gloves, Safety Harness, gloves and glasses	Contractor TBA		1	4	M5

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				L	C	S				L	C	S
15.	Lift and position shelter into position	• Damage to equipment • Manual Handling • Slips/trips	• Personal injury • Damage of Telstra equipment • Cuts and abrasions	3	3	M6	• Isolate: No one to be under load while lifting into position. • Engineering: Use correct crane lifting procedure, appropriate lifting lugs, spreader bar certified for the weight loading. • Admin: Correct manual handling techniques to be used. • PPE: Use appropriate safety gear (boots, gloves, hard hat)	Contractor TBA		1	3	L4
16.	Lift and position Circular headframe and Antenna in position	• Incorrect use of machine • Falls from height • Equipment failure	• Physical injury • Environmental damage • Damage to pole and shelter	2	4	M6	• Isolate: Use barricades around work area. • Engineer: ensure that crane is certified to lift the pole section, headframe and Antenna • Engineer: Use EWP or crane man box in lieu of climbing the pole • Administration: ensure that crane plan is available correctly setup crane. • PPE: Hard hat, steel toe cap boots, high visibility vest	Contractor TBA		1	4	M5

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				L	C	S				L	C	S
17.	Excavate / trench for earth straps	• Physical injury • Slips/trips • Cuts and abrasions • Damage to underground services	• Personal injury • Environmental damage • Interrupt other client services • Environmental damage	3	3	M6	• Substitute: Only trained person to use excavator. Keep excavator within boundary to avoid damage to other compound surroundings. Ensure excavator has current log and maintenance details on site. • Engineer: Barricade surrounding area. Put construction signage in work area. Dispose of spoil correctly. • Admin: Obtain tickets for qualified operators. • PPE: Use appropriate safety gear (boots, gloves high vis vest) •	Contractor TBA		1	3	L4
18.	Install earth rods/straps	• Cuts and abrasions • Slips/trips • Incorrect tools for work at hand	• Personal injury	3	3	M6	• Engineer: Only trained person to install earth straps/rods. Barricade opening to avoid fall hazard. Cover protruding rods while no one working on them. • PPE: Wear appropriate safety gear (boots, gloves)	Contractor TBA		1	3	L4

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				L	C	S				L	C	S
19.	Install feeder cables and tilt cables and Test feeders	• Falls from heights • Damage to equipment • Work around live power	• Major injury due to fall from heights / Death • Damage to Telstra equipment • Electrocution	2	4	M6	• Elimination: No one to be under load while lifting cables into position. • Engineering: Correct manual handling techniques to be used. All EWP, cranes to be reviewed prior to carrying out works. Only qualified personnel to use machine. Barricade work area. • Admin: All tickets and permits to be available prior to commencement of work. • PPE: Use appropriate safety gear (boots, gloves, hard hat, harness)	Contractor TBA		1	4	M5
20.	Build fencing around Telstra compound	• Physical injury • Manual handling • Tensioned wire come undone	• Cuts and abrasions	2	3	M5	• Engineering: Use correct tools while cutting and tightening wires. • PPE: Use appropriate safety gear (boots, gloves, long sleeve pants/shirt)	Contractor TBA		1	3	L4

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				L	C	S				L	C	S
21.	Carry out electrical installation from new metered DB to shelter	• Non electrician working • Falls from heights • Damage to property and equipment • Physical injury • Working around live power	• Major injury / Death • Damage to Telstra equipment • Electrocution • Cuts and Abrasions • Trips / Slips	2	5	H7	• Substitute: Only qualified electrical contractors to carry out works. Use appropriate tools. • Engineering: Never work on live loads. Use safety signage advising of electrical works. • PPE: Wear appropriate safety gear (boots, gloves, safety kit)	Contractor TBA		1	5	M6
22.	Terminate all specified cabling and test (PIM)	• Damage to cable • Incorrect testing • Radiation	• Damage to Telstra equipment • Radiation exposure	2	2	L4	• Engineering: Use correct tools. • Keep away the minimum distance from the antenna faces when PIM testing • • Admin: Trained person to carry out testing. • PPE: Boots, gloves	Contractor TBA		1	2	L3
23.	Clean surrounding and revert back to original state.	• Damage to surroundings	• Environmental damage	2	2	L4	• Substitution: revert site back to pre-construction conditions. Plant/replace any tree damaged or removed from excavation. • Admin: Refer to scope and permit for any additional environmental works. • PPE: Boots, gloves	Contractor TBA		1	2	L3

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				L	C	S				L	C	S
24.	Demobilise off site	• Vehicular collisions • Physical injury • Equipment damage • Property damage	• Persons being injured during removal of materials from site • Damage to surrounding property	2	2	L4	• Eliminate: Reduce the amount of travel required, plan and combine visits. • Engineer: Purchase / hire appropriate safe vehicles (Air bags). Provide hands-free mobiles. • Admin: Driver safety to be given during induction training. Talking on the phone is to be avoided. Make calls only when parked, use rest stops or service areas in preference to parking at road side. Minimise duration of phone calls received on hands free. • PPE: High visibility vests	Contractor TBA		1	2	L3
25.	Working in the vicinity of or after a bushfire	Fire, flames	Loss of life, burns, loss of equipment	L3	C5	H8	• Elimination: if Extreme fire danger reschedule the works to a more favourable time • Admin: Obtain regular situation updates from supervisor, news outlets etc. Evacuate area as required. • Engineering: Ensure mobile phones are available and have coverage or have access to a GPS phone.	All site personnel.		L1	C5	M6

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				L	C	S				L	C	S
26.		Radiant Heat	Burns, equipment damage	L3	C4	H7	• PPE e.g. full clothing, overalls etc. Ensure mobile phones available and have coverage.	All site personnel.		L1	C4	M5
27.		Radiant heat	Dehydration	L3	C3	M6	• Adequate water supply • PPE e.g. full clothing, overalls etc. Ensure mobile phones available and have coverage.	All site personnel.		L1	C3	L4
28.		Smoke	Inhalation, asphyxiation	L3	C3	M6	• PPE e.g. face masks. Ensure mobile phones available and have coverage.	All site personnel.		L1	C3	L4
29.		Dust and Ash	Eye irritation, breathing problems, asphyxiation	L3	C3	M6	• PPE e.g. face masks, first aid kit. Ensure mobile phones available and have coverage.	All site personnel.		L1	C3	L4
30.		Restricted access and egress from affected area	Exposure, injury, dehydration	L3	C4	H7	• Obtain regular situation updates from coordinator. Ensure mobile phones available and have coverage.	All site personnel.		L1	C3	M5
31.		Retention of heat in pits, lids, cables etc	Burns, equipment damage	L3	C2	M5	• Handle with care, use appropriate PPE e.g. leather gloves.	All site personnel.		L2	C2	L4

Mandatory PPE:	Safety Boots, Gloves, Hard Hats, Eye wear, Ear protection, Long sleeve pants and shirts, High visible vests, Harness

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Safety / Emergency Equipment Required	**First Aid Kit, Electrical Safety kit**
Associated Procedures, Programs, References	Site inductions, Toolbox talks and daily work site checks
Other Comment(s)	A task specific risk assessment MUST be completed if additional or changes in risk are identified

Legal & Advisory Documentation that supports this Risk Assessment.	
ACTS	*Occupational Health and Safety Act 2000*
Regulations	*OH&S training for construction work* *OHS Regulation 2001*
Codes of Practice	*National standard and code of practice for manual handling* *National standard and ode of practice for occupational noise* *Noise in the work place* *Safe working at heights* *Electrical Practices for construction work* *NSW National Parks and wildlife services*
Other Legislation Applicable	*AS3000:2007* *See separately attached sheet (Reference to Legislation and Codes)*

Personnel qualifications and experience required to complete the task	Specific training required to complete this task	Engineering Details/Certificates/WorkSafe/WorkCover Approvals

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SILCAR Communications

SWMS / RISK ASSESSMENT RECORD

This Risk Assessment has been developed in consultation with the employees & subcontractors involved in this process.
This risk assessment has been read, understood & signed by ALL people involved in this process
Signature is confirmation that this procedure in its entirety will be adhered to!

Name	Signature	Date	Name	Signature	Date

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Prompt Sheet

Review below for additional hazards, when present write these hazards and their controls into your Risk Assessment

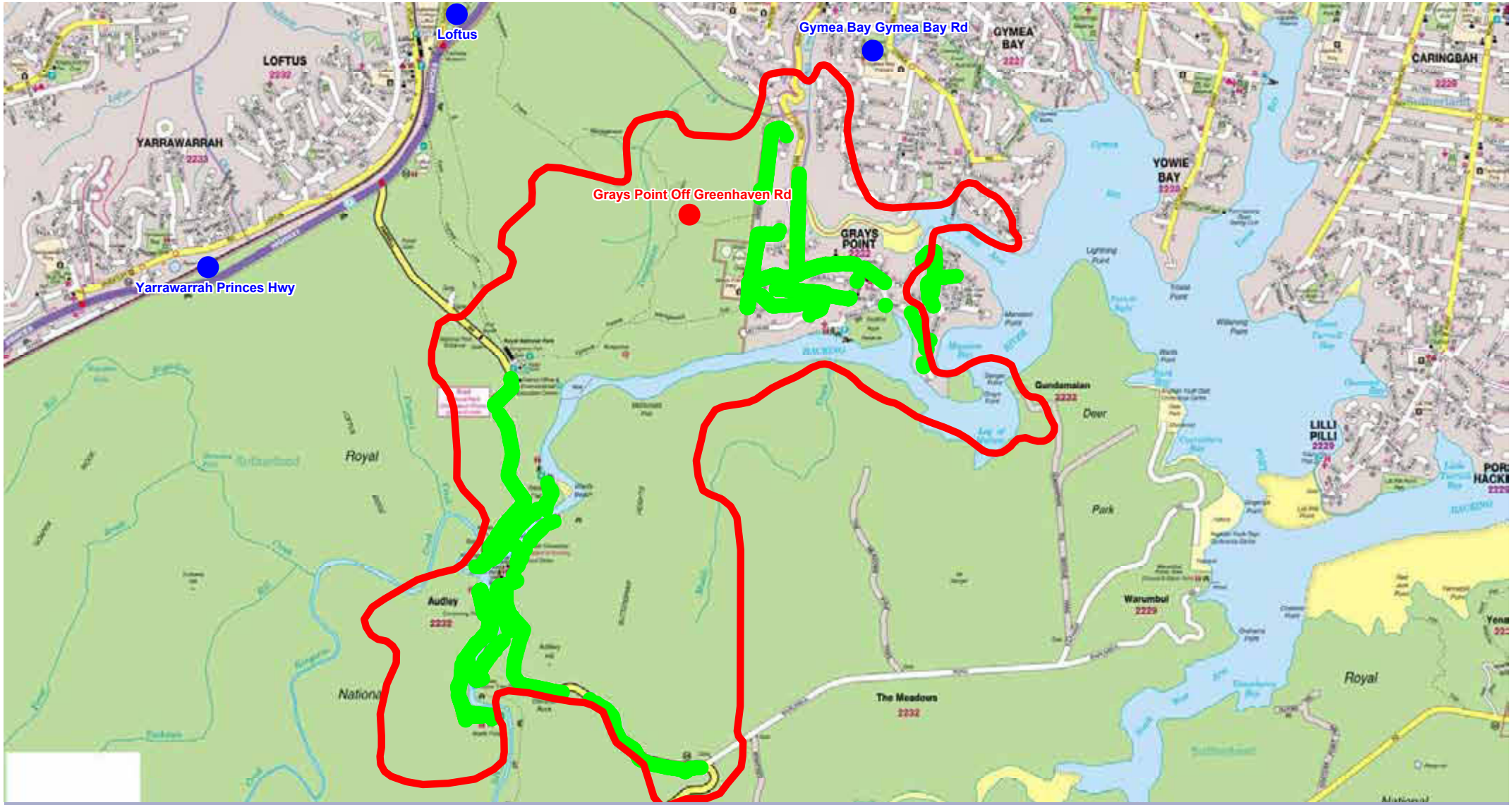
A	**Entanglement**
☐	Can anyone's hair, clothing, gloves, rags, or other materials become entangled with electrical tools, or materials in motion?
B	**Crushing**
☐	Can anyone be crushed due to material falling from heights?
C	**Fall from Heights**
☐	Can anyone fall from a height due to: a) Lack of a proper work platform?
☐	b) Lack of proper stairs or ladders?
☐	c) Lack of guardrails or other suitable edge protection?
☐	d) Unprotected holes, penetrations or gaps?
☐	e) Poor floor or walking surfaces, such as the lack of a slip-resistant surface?
☐	f) Steep walking surfaces?
☐	g) Lack of training?
☐	h) Collapse of the supporting structure?
D	**Cutting, Stabbing And Puncturing**
☐	Can anyone be cut or stabbed, or struck by moving objects due to: a) Coming in contact with sharp objects?
☐	b) Coming in contact with moving parts of electrical equipment?
☐	c) Coming into contact with hand tools?
☐	d) Uncontrolled or unexpected?
E	**Friction/Burns**
☐	Can anyone be burnt due to contact with moving parts or surfaces, or handling hot material?
F	**Striking**
☐	Can anyone be struck by moving objects?
G	**High Pressure Fluids**
☐	Can anyone come into contact with fluids under high pressure, due to plant failure or misuse of the plant?
H	**Electrical**
☐	Can anyone be injured by electrical shock or burnt due to: a) No RCD switch at main board?
☐	b) Incorrect use of equipment?
☐	c) Overload of electrical circuits?
☐	d) Damaged or poorly maintained electrical leads and cables?
☐	e) Damaged electrical switches?
☐	f) Water near electrical equipment?
☐	g) Lack of isolation procedures?

I	**Slipping, Tripping And Falling**
☐	Can people, slip, trip or fall due to: a) Uneven or slippery work surfaces?
☐	b) Poor housekeeping?
☐	c) Obstacles being placed in the vicinity of work area?
J	**Ergonomics**
☐	Can anyone be injured due to: a) Repetitive body movement?
☐	b) Constrained body posture or the need for excessive effort?
☐	c) Lack of consideration given to human error or human behaviour?
☐	d) Mismatch of task with human traits and natural limitations?
K	**Thermal Temperature Effects Or Fire**
☐	a) Can anyone come into contact with objects at high or extreme low temperatures?
☐	b) Can anyone suffer ill health due to exposure to high or low temperatures?
L	**Other Hazards**
☐	Can anyone be injured or suffer ill-health from exposure to: a) Chemicals?
☐	b) Toxic gases or vapours?
☐	c) Fumes?
☐	d) Dust?
☐	e) Noise?
☐	f) Vibration?
M	**Manual Handling**
☐	Can anyone be injured due to manual handling process? a) Moving?
☐	b) Assembling?
☐	c) Lifting?
☐	d) Digging?
☐	e) Carrying product?
N	**Environmental Aspects & Impacts to be considered**
☐	Can environment harm be caused by: a) Emissions to air?
☐	b) Releases to water and waterways?
☐	c) Waste management?
☐	d) Dust?
☐	e) Noise?

surrounding network locations

Telstra Next G™ Network Coverage - Area Of Proposed Enhancement

14/02/2011



Customers should be aware that the Telstra wireless coverage maps displayed have been created using tools that predict the likely areas of coverage. Not every particular location within the identified coverage areas has been individually tested for coverage. This means that while the footprint of coverage outlined on the maps is generally accurate, there will be specific areas described as being within a coverage area where a customer's device will not work. This is a common characteristic of wireless systems. For example, coverage could be degraded or not existent in specific locations due to certain physical structures or geographic features. Physical structures which may block or inhibit coverage could include basements, lifts, underground car parks, concrete buildings, tunnels and road cuttings. Geographic features which may block or inhibit coverage could include formations such as hills and mountains or even trees.

Customers should also be aware the Telstra wireless coverage maps also may indicate planned coverage expansions of the Telstra wireless network. Coverage planned for the future is based on Telstra's rollout schedule. Telstra reserves the right to modify this schedule without notice, as required from time to time.

Data speeds experienced on Telstra's wireless networks may be affected by network availability, the type and configuration of customer equipment, the performance of external networks (for example the Internet), the signal strength of the device used and other factors such as the type of application being used.

Next G™ coverage

- Area of Proposed Telstra Next G™ Network Coverage Enhancement
- Service
- No Service

O

Summary of Estimated RF EME Levels around the Proposed Mobile Phone Base Station at off Greenhaven Rd, Grays Point NSW 2232

Introduction:

Date 21/6/2011

NSA Site No (2232014)

This report summarises the estimated maximum cumulative radiofrequency (RF) electromagnetic energy (EME) levels at ground level emitted from the existing Mobile Phone Base Station antennas at off Greenhaven Rd Grays Point NSW 2232. Maximum EME levels are estimated in 360° circular bands out to 500m from the base station. The procedures for making the estimates have been developed by the Australian Radiation Protection And Nuclear Safety Agency (ARPANSA)[1]. These are documented in the ARPANSA Technical Report; "Radio Frequency EME Exposure Levels - Prediction Methodologies" which is available at http://www.arpansa.gov.au

EME Health Standard

ARPANSA, an Australian Government agency in the Health and Ageing portfolio has established a Radiation Protection Standard[2] specifying limits for continuous exposure of the general public to RF transmissions at frequencies used by mobile phone base stations. Further information can be gained from the ARPANSA web site.

The Australian Communications and Media Authority (ACMA)[3] mandates exposure limits for continuous exposure of the general public to RF EME from mobile phone base stations. Further information can be found at the ACMA website http://emr.acma.gov.au

Existing Site Radio Systems

There are currently no existing radio systems for this site.

Proposed Site Radio Systems

Telstra / WCDMA850			

Table of Predicted EME Levels – Proposed

Distance from the antennas at off Greenhaven Rd in 360° circular bands	Maximum Cumulative EME Level – All carriers at this site (% of ARPANSA exposure limits[2]) Public exposure limit = 100%
0m to 50m	0.0075%
50m to 100m	0.024%
100m to 200m	0.19%
200m to 300m	0.14%
300m to 400m	0.1%
400m to 500m	0.058%
Maximum EME level 161.32 m, from the antennas at off Greenhaven Rd	0.19%

Note: Estimation for the maximum level of RF EME at 1.5m above the ground from the existing and proposed antennas assuming level ground. The estimated levels have been calculated on the maximum mobile phone call capacity anticipated for this site. This estimation does not include possible radio signal attenuation due to buildings and the general environment. The actual EME levels will generally be significantly less than predicted due to path losses and the base station automatically minimising transmitter power to only serve established phone calls[5]. Where applicable, particular locations of interest in the area surrounding the base station, including topographical variations, are assessed in Appendix A "Other areas of Interest" table on the last page.

Summary – Proposed Radio Systems

RF EME levels have been estimated from the existing and proposed antennas at **off Greenhaven Rd** Grays Point NSW 2232. The maximum cumulative EME level at 1.5 m above ground level is estimated to be **0.19** % of the ARPANSA public exposure limits.

Reference Notes:

1. The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) is a Federal Government agency incorporated under the Health and Ageing portfolio. ARPANSA is charged with responsibility for protecting the health and safety of people, and the environment, from the harmful effects of radiation (ionising and non-ionising).

2. Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), 2002, 'Radiation Protection Standard: Maximum Exposure Levels to Radiofrequency Fields — 3 kHz to 300 GHz', Radiation Protection Series Publication No. 3, ARPANSA, Yallambie Australia.
[Printed version: ISBN 0-642-79400-6 ISSN 1445-9760]
[Web version: ISBN 0-642-79402-2 ISSN 1445-9760]

3. The Australian Communications and Media Authority (ACMA) is responsible for the regulation of broadcasting, radiocommunications, telecommunications and online content. Information on EME is available at http://emr.acma.gov.au/

4. The EME predictions in this report assume a near worst-case scenario including:
- base station transmitters operating at maximum power (no automatic power reduction)
- simultaneous telephone calls on all channels
- an unobstructed line of sight view to the antennas.
In practice a worst-case scenario is rarely the case. There are often trees and buildings in the immediate vicinity, and cellular networks automatically adjust transmit power to suit the actual telephone traffic. The level of EME may also be affected where significant landscape features are present and predicted EME levels might not be the absolute maximum at all locations.

5. Further explanation of this report may be found in "Understanding the ARPANSA Environmental EME Report" and other documents on the ARPANSA web site, http://www.arpansa.gov.au

Appendix A

Table of Other Areas of Interest

Additional Locations	Height / Scan relative to location ground level	Maximum Cumulative EME Level All Carriers at this site (% of ARPANSA exposure limits[2]) Public exposure limit = 100%
Grays Point Public School Grays Point Activity Centre	0m to 5m 0m to 5m	0.014% 0.0092%

Note: Estimation for the maximum EME levels at selected areas of interest over a height range relative to the specific ground level at the area of interest. This table includes any existing and proposed radio systems.

Estimation Notes / Assumptions – Other Areas of Interest

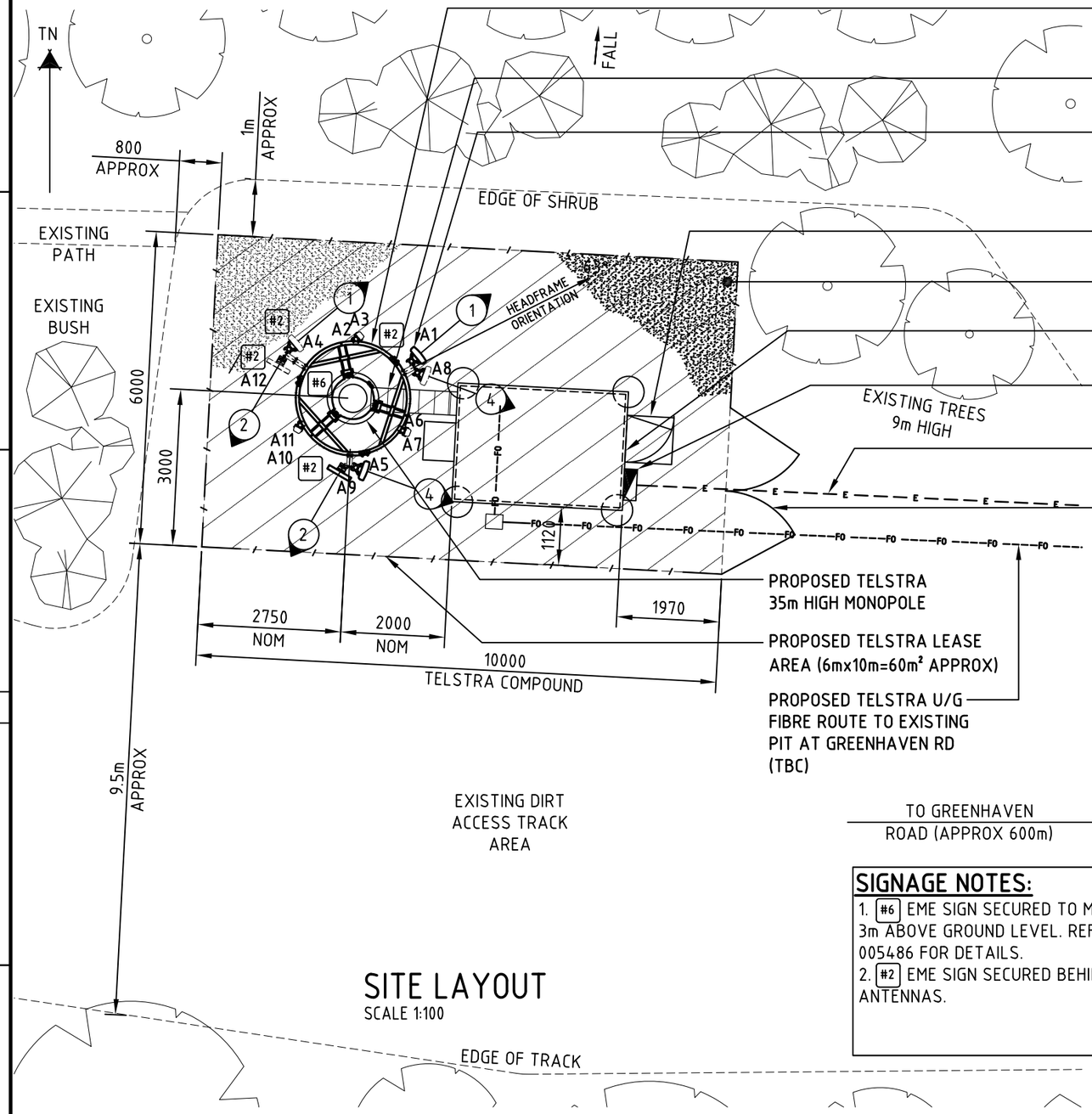
Variable ground topography has been included in the assessment of the "Other Areas of Interest" as per ARPANSA methodology

A – D: ALTERNATIVE LOCATIONS WITHIN THE RNP

E: EXISTING LIGHTING POLE WITHIN THE SPORTING OVAL, ANGLE ROAD

F: RFS, INGLEWOOD ROAD

G: LOCAL SHOPPING CENTRE, GRAYS POINT ROAD



PROPOSED TELSTRA CIRCULAR HEADFRAME AT EL 35m

PROPOSED TELSTRA 450 WIDE ELEVATED CABLE LADDER

PROPOSED TELSTRA PANEL ANTENNAS ON MONOPOLE (3-OFF PROPOSED & 9-OFF FUTURE POLE MOUNTED ON HEADFRAME AT EL 35m)

PROPOSED TELSTRA 900 SQ PRECAST CONCRETE SLAB

PROPOSED TELSTRA GRAVEL COVER OVER COMPOUND

PROPOSED TELSTRA EQUIPMENT SHELTER ON ELEVATED PIERS, COLOUR: PALE EUCALYPT

PROPOSED TELSTRA ELECTRICAL BOX ON SHELTER

PROPOSED TELSTRA U/G SUBMAIN ROUTE TO EXISTING PILLAR AT GREENHAVEN RD (TBC)

PROPOSED TELSTRA COMPOUND SECURITY FENCE WITH 3000 WIDE DOUBLE ACCESS GATES

PROPOSED TELSTRA 35m HIGH MONOPOLE

PROPOSED TELSTRA LEASE AREA (6mx10m=60m² APPROX)

PROPOSED TELSTRA U/G FIBRE ROUTE TO EXISTING PIT AT GREENHAVEN RD (TBC)

SIGNAGE NOTES:

1. #6 EME SIGN SECURED TO MONOPOLE 3m ABOVE GROUND LEVEL. REFER TO 005486 FOR DETAILS.
2. #2 EME SIGN SECURED BEHIND ALL ANTENNAS.

SITE LAYOUT

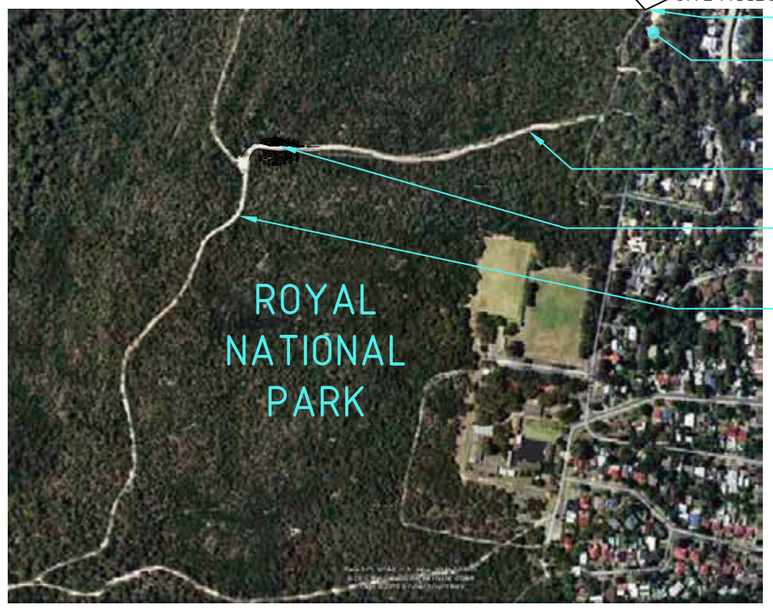
SCALE 1:100

NOTES:
1. FOR EME SIGNS NOTATED #X REFER TO 005486 FOR DETAILS.
PROPOSED LEASE AREA

RFNSA SITE No. TBA

LOCALITY PLAN NOT TO SCALE

SYDNEY UBD MAP 332 GRID P13



SITE ACCESS

SCALE 1:10000

SCALE 1:10000 100m 0 100m 200m 300m 400m 500m

PRELIMINARY

SITE STRUCTURE CO-ORDINATES GPS READING ACCURACY: ±10m CENTRE OF MONOPOLE	
LATITUDE (S)	-34.055316 (GDA 94)
LONGITUDE (E)	151.068702 (GDA 94)

NEXT NETWORK™

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Neutral Bay Facsimile: +61 2 9465 5598
New South Wales 2089 Australia Email: sydney@ap.aurecongroup.com

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
NA05634	AQ	AQ	ISSUED FOR APPROVAL SP70644182W001A	PM	NT	11.11.10	1
NA05634	AQ	AQ	ISSUED FOR APPROVAL SP70644182W001A	PM	NT	23.11.10	2

Telstra

MOBILE NETWORK SITE 257459

GRAYS POINT OFF GREENHAVEN RD

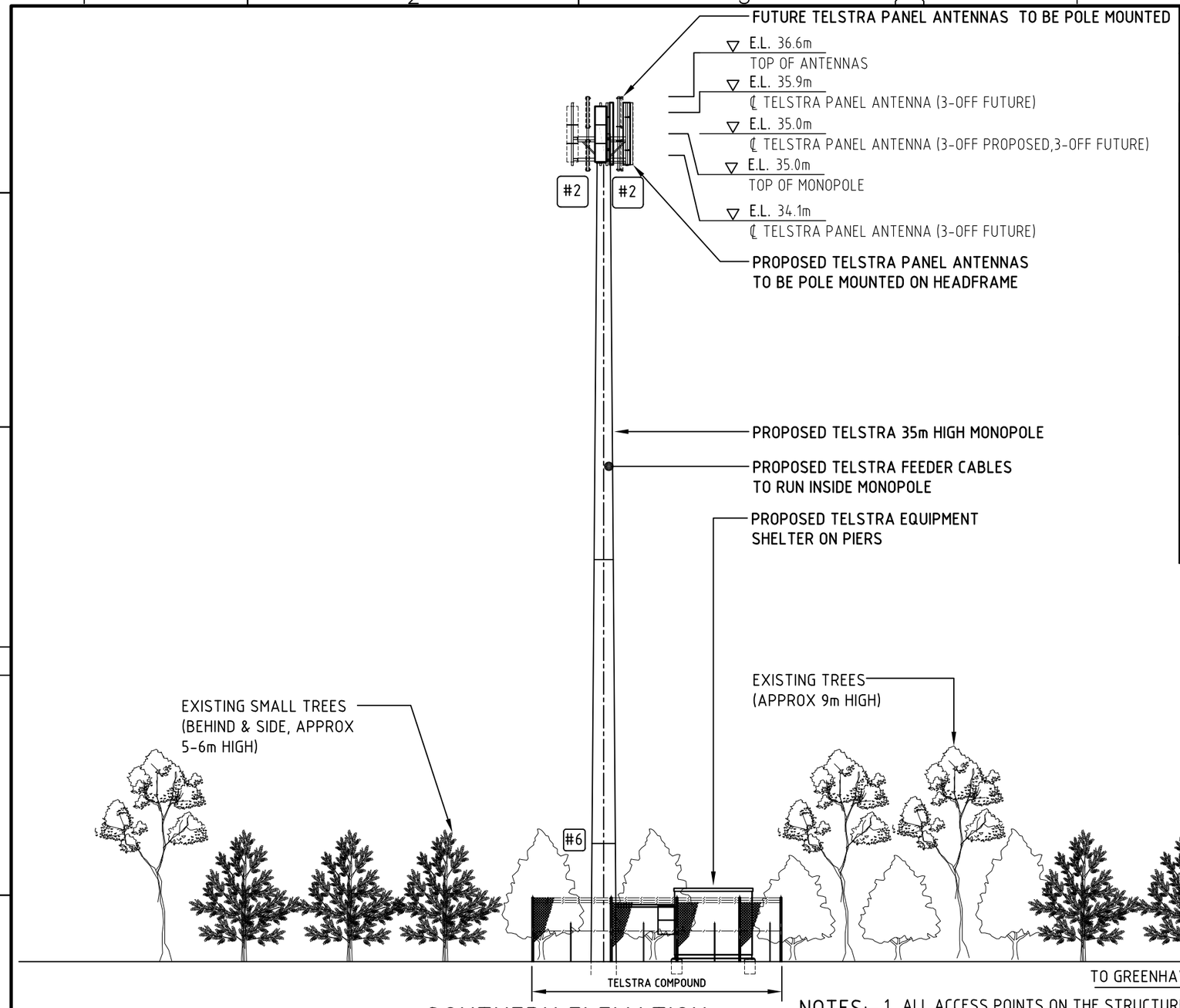
SITE LAYOUT AND ACCESS

356 PLAN MP144 AUDLEY RD, ROYAL NATIONAL PARK

DWG NO. N109299

SHT NO. S1 INDEX

A3



SOUTHERN ELEVATION

SCALE 1:200 (VIEW FROM TRACK)

2m 0 2m 4m 6m 8m 10m SCALE 1:200

TELSTRA ANTENNA CONFIGURATION TABLE

ANTENNA No	ANTENNA TYPE & SIZE H x W x D	ANTENNA STATUS	ANTENNA HEIGHT C/L A.G.L.	ANTENNA BEARING (x°T)	SECTOR NO. & SYSTEM
A1	ARGUS CPX310R-V1 PANEL 2630 x 300 x 115	PROPOSED	35.0m	50°	S1: WCDMA850 S1: WCDMA850
A5	ARGUS CPX310R-V1 PANEL 2630 x 300 x 115	PROPOSED	35.0m	110°	S4: WCDMA850 S4: WCDMA850
A9	ARGUS CPX209R-L-V1 PANEL 2350 X 480 X 95	PROPOSED	35.0m	210°	S2: WCDMA850 S2: WCDMA850
A2	ARGUS NPX310R PANEL 1330 x 160 x 95	FUTURE	35.9m	50°	FUTURE / FUTURE
A6	ARGUS NPX310R PANEL 1330 x 160 x 95	FUTURE	35.9m	110°	FUTURE / FUTURE
A10	ARGUS NPX310R PANEL 1330 x 160 x 95	FUTURE	35.9m	210°	FUTURE / FUTURE
A3	ARGUS NPX310R PANEL 1330 x 160 x 95	FUTURE	34.1m	50°	FUTURE / FUTURE
A7	ARGUS NPX310R PANEL 1330 x 160 x 95	FUTURE	34.1m	110°	FUTURE / FUTURE
A11	ARGUS NPX310R PANEL 1330 x 160 x 95	FUTURE	34.1m	210°	FUTURE / FUTURE
A4	ARGUS CPX310R-V1 PANEL 2630 x 300 x 115	FUTURE	35.0m	50°	FUTURE FUTURE
A8	ARGUS CPX310R-V1 PANEL 2630 x 300 x 115	FUTURE	35.0m	110°	FUTURE FUTURE
A12	ARGUS CPX209R-L-V1 PANEL 2350 X 480 X 95	FUTURE	35.0m	210°	FUTURE FUTURE

SIGNAGE NOTES:

1. #6 EME SIGN SECURED TO MONOPOLE 3m ABOVE GROUND LEVEL. REFER TO 005486 FOR DETAILS.
2. #2 EME SIGN SECURED BEHIND ALL ANTENNAS.

NOTES:-

1. ALL ACCESS POINTS ON THE STRUCTURE MUST BE BIRD PROOFED AS PER EXTERNAL PLANT POLICY 003615.
2. FOR EME SIGNS NOTATED #X REFER TO 005486 FOR DETAILS.
3. THIS DRAWING SET IS A PRELIMINARY DRAWING ONLY AND IS ISSUED FOR COMMENT. IT IS NOT A DETAILED SURVEY / STRUCTURAL DRAWING AND THEREFORE COULD BE SUBJECT TO CHANGE.
4. ANTENNAS, HEADFRAME & MONOPOLE TO BE PAINTED WITH 'PALE EUCALYPT'.
5. MONOPOLE FOOTING TYPE TO BE BASED ON GEOTECHNICAL INVESTIGATION.

PRELIMINARY

ORDER	DRAWN	CHKD	AMENDMENT	EXAM	APPD	DATE	ISS
NA05634	AQ	AQ	ISSUED FOR APPROVAL SP70644182W001A	PM	NT	11.11.10	1
NA05634	AQ	AQ	ISSUED FOR APPROVAL SP70644182W001A	PM	NT	23.11.10	2

NEXT NETWORK™

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Telstra

MOBILE NETWORK SITE 257459
GRAYS POINT OFF GREENHAVEN RD
SOUTHERN ELEVATION
356 PLAN MP144 AUDLEY RD, ROYAL NATIONAL PARK

DWG NO. N109299 SHT NO. S3 INDEX

Sutherland Shire
Local Environmental Plan 2006
under the Environmental Planning & Assessment Act 1979

Zoning (Amendment No 8)

Ratio 1 : 8000

0 50 100 200 300 400 m

Legend

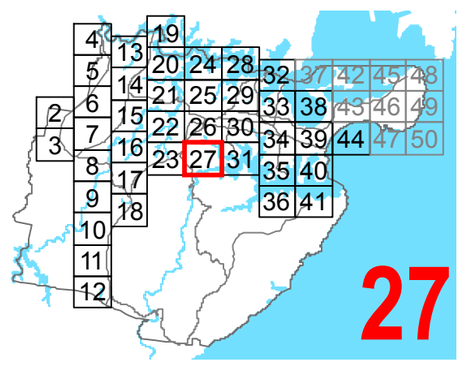
- Zone 1 - Environmental Housing (Environmentally Sensitive Land)
- Zone 2 - Environmental Housing (Scenic Quality)
- Zone 3 - Environmental Housing (Bushland)
- Zone 4 - Local Housing
- Zone 5 - Multiple Dwelling A
- Zone 6 - Multiple Dwelling B
- Zone 7 - Mixed Use - Kirrawee
- Zone 8 - Urban Centre
- Zone 9 - Local Centre
- Zone 10 - Neighbourhood Centre
- Zone 11 - Employment
- Zone 12 - Special Uses
- Zone 13 - Public Open Space
- Zone 14 - Public Open Space (Bushland)
- Zone 15 - Private Recreation
- Zone 16 - Environmental Protection (Waterways)
- Zone 17 - Environmental Protection (Low Impact Rural)
- Zone 18 - Environmental Protection (Water Catchment)
- Zone 19 - Aquatic Reserves
- Zone 20 - National Parks, Nature Reserves and State Conservation Areas
- Zone 21 - Railway
- Zone 22 - Arterial Road
- Zone 23 - Road
- Zone 24 - Transport Reservation
- deferred matter - existing zoning under SSLEP 2000 or Menai Town Centre LEP 1992 continues until resolved
- Land Referred to in Clause 11 (Zone 4 - Local Housing) - Medical Facilities and High Technology Medical Industry
- Land Referred to in Clause 11 (Zone 8 - Urban Centre) - Residential Flat Buildings
- Land Referred to in Clause 11 (Zone 11 - Employment) - Bulky Goods Premises
- 20m Foreshore Building Line
- SSC LGA Boundary
- Excluded

Relationship with other Plans.
These maps are to be read in conjunction with Sutherland Shire Local Environmental Plan 2006.

Sutherland Shire Council
Environmental Planning Unit

Council File Number:	LP/03/500868
DoP File Number:	S09/013351-1

This map is part of the set of maps included with the plan.
It was prepared on 30 July, 2010.
It was in effect on 30 July, 2010.



AHIMS Web Services (AWS)
Search Result

Your Ref Number : Grays Point E/N Buffer

Client Service ID : 80188

Davina Knox
116 Military Road
Neutral Bay New South Wales 2089

Attention: Davina Knox

Email: davina.knox@aurecongroup.com

Date: 14 September 2012

Dear Sir or Madam:

AHIMS Web Service search for the following area at Datum :GDA, Zone : 56, Eastings : 321740 - 321770, Northings : 6230020 - 6230040 with a Buffer of 50 meters. conducted by Davina Knox on 14 September 2012

A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

0	**Aboriginal sites are recorded in or near the above location.**
0	**Aboriginal places have been declared in or near the above location. ***

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (http://www.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date .Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.