

Statement of Environmental Effects

Proposed In-Building Coverage Facility:

Bullocks Flat Terminal, Kosciuszko National Park NSW 2627

Prepared by Catalyst ONE Pty Ltd on behalf of Optus Mobile Pty Limited

October 2017

Executive Summary

Proposal	<p>Optus proposes to install a new In-Building Coverage facility within the Bullocks Flat Terminal, Kosciuszko National Park NSW 2627. The proposal comprises of the following:</p> <ul style="list-style-type: none"> • Installation of four (4) Omni antennas within the concourse area. • Installation of two (2) Panel antenna within the concourse area. • Installation of associated electronic equipment within the Switch Room. • Installation of an air-conditioning outdoor unit on the roof adjacent to the existing air-conditioning outdoor unit. (The new outdoor unit will be of a similar scale and colour to the existing unit.) • The installation of associated ancillary equipment and works. 	
Purposes	<p>The proposed facility is necessary for Optus to provide mobile and data services within the Bullocks Flat Terminal.</p>	
Property Details	<p>Legal property description: Lot 500 DP 1171936. Street Address: Bullocks Flat Terminal, Kosciuszko National Park NSW 2627.</p>	
Town Planning Scheme	<p>Authority: Department of Planning (Alpine Resorts) Zone: E1 National Parks and Reserves Principal Designated Use: Commercial</p>	
Applicable Planning Policies	<p>Relevant State & Local Planning Policies</p>	<p>Complies</p>
	<p><i>State Environmental Planning Policy (Kosciuszko National Park – Alpine Resorts) 2007</i></p>	<p>Yes</p>
	<p>Use and development within the existing building envelope for the construction & operation of an In-Building Coverage facility.</p>	<p>Yes</p>
Application	<p>Optus In-Building Coverage facility at the Bullocks Flat Terminal, Kosciuszko National Park NSW 2627.</p>	
Applicant	<p>Contact: Daniel Prior Tel: 02 9439 1999 Email: dprior@catalystone.com.au Address: PO Box 1119, Crows Nest NSW 1585 Our Ref: S3233 Bullocks Flat Terminal</p>	

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1 Introduction

Mobile technologies play a central role in our modern society and have become a ubiquitous part of our daily routines, shaping the way society and businesses communicate, access information and complete tasks. The evolution of mobile technologies has delivered significant benefits to the Australian economy by improving productivity, business management and customer engagement. Since its introduction, mobile technology has played a key role in stimulating labour productivity growth by allowing employees to be more efficient and productive. Mobile technologies economic contribution is not limited to productivity improvements, it improves connectivity and participation in the workforce by providing employees with the tools and flexibility to work from home, promoting sustainable commuting and reducing traffic congestion. The Australian economy was cumulatively around \$34 billion larger in 2015 than it would otherwise have been, due to the long-term productivity benefits attributed to mobile technologies¹.

Demand for data traffic on mobile telecommunication networks has grown significantly over recent years, with the development of devices such as smartphones and tablets. Current trends indicate that global mobile data traffic increased 18-fold between 2011 and 2016² and is expected to continue at a similar rate through to 2020. As people become increasingly connected, the demand for mobile services increases, with consumers demanding larger data bundles, faster access speeds, uninterrupted coverage and greater access nationwide. Just two decades ago only 4% of Australians owned a mobile device³, compared to approximately 26.3 million mobile handset subscribers in June 2017⁴. Mobile technologies' continual development has allowed it to become the preferred channel to access the internet for most people in Australia and the rest of the world.

To cater for the growing demand in mobile services, Optus have embarked on a nationwide rollout to deliver an improved and reliable telecommunications network to the Australian public. This rollout will result in improved mobile coverage and enhanced services to metropolitan, regional and rural areas across Australia. This will comprise of a range of activities, from upgrading existing mobile telecommunications facilities, the installation of new mobile base stations and In-Building Coverage to expand the coverage footprint and offer seamless mobile services to customers.

In-Building Coverage could be required for a variety of reasons, such as when a building structure reduces the level of an RF signal from an external base station, it may not be physically possible to direct RF signals to underground facilities or due to the high number of mobile phone users inside a building or terminal may require a dedicated base station to handle the number of calls, particularly during peak periods. Having undertaken an analysis of their mobile network, Optus has identified Bullocks Flat Terminal as an area where coverage and network quality needs to be improved.

This Statement of Environmental Effects (SEE) has been prepared by Catalyst ONE Pty Ltd (Catalyst) on behalf of Optus Mobile Pty Ltd (Optus) to support a Development Application for In-Building Coverage within the Bullocks Flat Terminal, Kosciuszko National Park NSW 2627 (Bullocks Flat Terminal) (Lot 500 | DP 1171936).

¹ Deloitte Access Economics Pty Ltd (Deloitte), 2016, "Mobile nation 2016: Driving workforce participation and productivity", Report for Australian Mobile Telecommunications Association, Sydney, viewed 1 October 2017 Available at: <https://www2.deloitte.com/au/en/pages/economics/articles/mobile-nation.html>

² Network Strategies Limited, 2010, "The future of mobile broadband services 2010", Report 29028, Report for Australian Mobile Telecommunications Association, Sydney

³ Australian Mobile Telecommunications Association (2008), "Mobile Telecommunications 'Come to Age' in Australia", viewed 1 October 2017 Available at: <http://www.amta.org.au/articles/amta/Mobile.telecommunications.come.of.age.in.Australia>

⁴ Australian Bureau of Statistics, 2016, Cat. No. 8153.0, Internet Activity, Australia, June 2017

This SEE provides details about the proposal and an assessment against the relevant planning controls, potential environmental impacts and identifies any relevant planning considerations to minimise negative outcomes.

2 Background

2.1 What is In-Building Coverage and how does it work?

A base station is a facility that provides mobile coverage to a geographical area. A mobile telecommunications network is made up of a series of base stations, which operate together to provide service to users moving from place to place within a coverage area. A mobile base station is essentially a radio transmitter/transceiver and an antenna, which transmits and receives radio frequency (RF) or electromagnetic energy (EME) signals from mobile phones. In most instances, mobile phone coverage is provided by base stations that are located externally on building rooftops, lattice towers, monopoles or other tall structures. Mobile phone coverage can also be provided inside buildings such as multi-storey office buildings, shopping centres, apartments, and underground railway systems by installing specially designed “In-Building” systems. These systems are sometimes referred to as Distributed Antenna Systems (DAS) or In-Building Coverage (IBC), similar to a cordless phone system you would find in a residential home.

An In-Building system usually consists of:

- Base station equipment, often located in a communications room; and
- Cables which run from the equipment room and connected to the antennas installed on the floors of the respective building; and
- Small antennas located on ceilings or walls in strategic locations to maximise coverage.

This system operates in a similar fashion to external base stations, but at a much lower power level. The only equipment likely to be visible are small antennas on the ceilings or walls, similar in size to a smoke detector.

Mobile phone coverage inside buildings may be required due to a number of factors:

- The building structure itself reduces the level of RF signal from external sources.
- It may not be possible to direct RF signal to underground levels, car parks or railway stations.
- The number of base stations in populated areas such as CBDs can sometimes result in overlapping RF signal (referred to as “interference”).

Also, the high number of mobile phone users inside a building or shopping centre may require a dedicated base station to handle the number of calls.

All mobile phone networks must comply with regulations set by the Federal Government in relation to exposure to EME, known as the ARPANSA Radiation Protection Standard (RPS3). IBC systems are all designed to provide coverage to a small geographic area and so the total power output from the antennas is very low, less than a quarter of a watt. The system operates in a similar way to external base stations but at much lower power levels – just like a cordless phone at home. The typical range of measured levels from In-Building systems is in the order of 14,000 to 1,000,000 times below the requirements of the ARPANSA Standard. In-Building systems are designed so that the ARPANSA Standard is not exceeded in any area accessible by the public⁵.

⁵ Mobile Carriers Forum, n.d., “MCF Fact Sheets: *The mobile phone network: In-Building coverage*”, Australia, viewed 1 October 2017, Available at: <http://www.mcf.amta.org.au/pages/Fact.Sheets>

2.2 Purpose of the Proposal

Optus has undertaken an analysis of their mobile network across Perisher and the surrounding areas, identifying areas where coverage and network quality needs to be improved. If these investments are not made, two main issues arise:

- Users may have difficulty connecting to the mobile network or the call may drop out. This impacts businesses, residents and visitors to the area and the ability of users to contact emergency services.
- Users may experience reduced data speeds, longer download times and poor network performance at busy times of the day with data intensive and time sensitive applications (e.g. newscasts, social media, mobile banking, weather forecasts, sports highlights etc.) due to the available capacity being shared across too many customers.

Having identified the need for improved network performance, the optimisation of existing Optus facilities throughout the region was explored and undertaken where possible. In some instances, these activities have resolved the network deficiencies, however on this occasion the optimisation of surrounding facilities has not been able to deliver a satisfactory outcome within the Bullocks Flat Terminal. Accordingly, Optus intends to supplement the existing coverage by providing IBC at the Bullocks Flat Terminal. The installation of the proposed infrastructure will provide improved service reliability solely for mobile phone users operating inside the building.

3 Site Selection

3.1 Site Selection Process

When installing a new base station, Optus commences the site selection process with a search of potential sites that meet the network's technical requirements, with a view to also having the least possible impact on the surrounding area. Optus applies and evaluates a range of criteria as part of this site selection process.

Optus then assesses the technical viability of potential sites using computer modelling tools that produce predictions of the coverage that may be expected from these sites, as well as from the experience and knowledge of the radio engineers.

There are also many other important criteria that Optus uses to assess and select potential site options, these consider factors other than the technical performance of the site and include:

- The potential to upgrade existing Optus facilities within the region.
- The potential to co-locate on an existing telecommunications facility.
- The potential to locate on an existing building or structure.
- The ability to minimise environmental, visual and heritage impacts.
- Proximity of the site to community sensitive locations.
- Regulatory compliance and the potential to obtain relevant planning approvals.
- Proximity to community sensitive locations and areas of environmental heritage.
- Impacts on the existing use of the site.
- The ability to secure tenure with landowner.
- The cost of developing the site and the provision of utilities (power, access to the facility and transmission links).

During the detailed site selection process for the new facility, Optus carefully considers all of the above criteria. In this instance, the proposed facility is intended to supplement the existing coverage by providing IBC at the Bullocks Flat Terminal solely for mobile phone users operating within the building. As such, on this occasion the Bullocks Flat Terminal was the only viable candidate to meet Optus' coverage objectives.

3.2 Site Selection Conclusion

In consideration of all discipline requirements listed above, the IBC solution was considered appropriate for the following reasons:

- The proposal meets Optus' radio frequency coverage objectives.
- The site has a negligible environmental impact as the works are wholly contained within the existing building envelope, as such there will be no impact to the surrounding land and no vegetation removal is proposed.

- The proposal will not impact on any bushfire or flood prone areas.
- The site has existing access.
- The proposed facility will not inhibit the current or future use of the site for recreational purposes, nor will it impact on any significant views or vistas.
- There is access to electricity infrastructure.
- The landowner was amenable to the proposal.

Optus have undertaken a detailed assessment of the proposal, including the compliance with all applicable Commonwealth, State and local planning and environmental legislation, policies, standards and guidelines. It also involved an investigation of the potential environmental impacts associated with the development, which will be addressed in the following sections of this report.

4 Description of Site and Surrounds

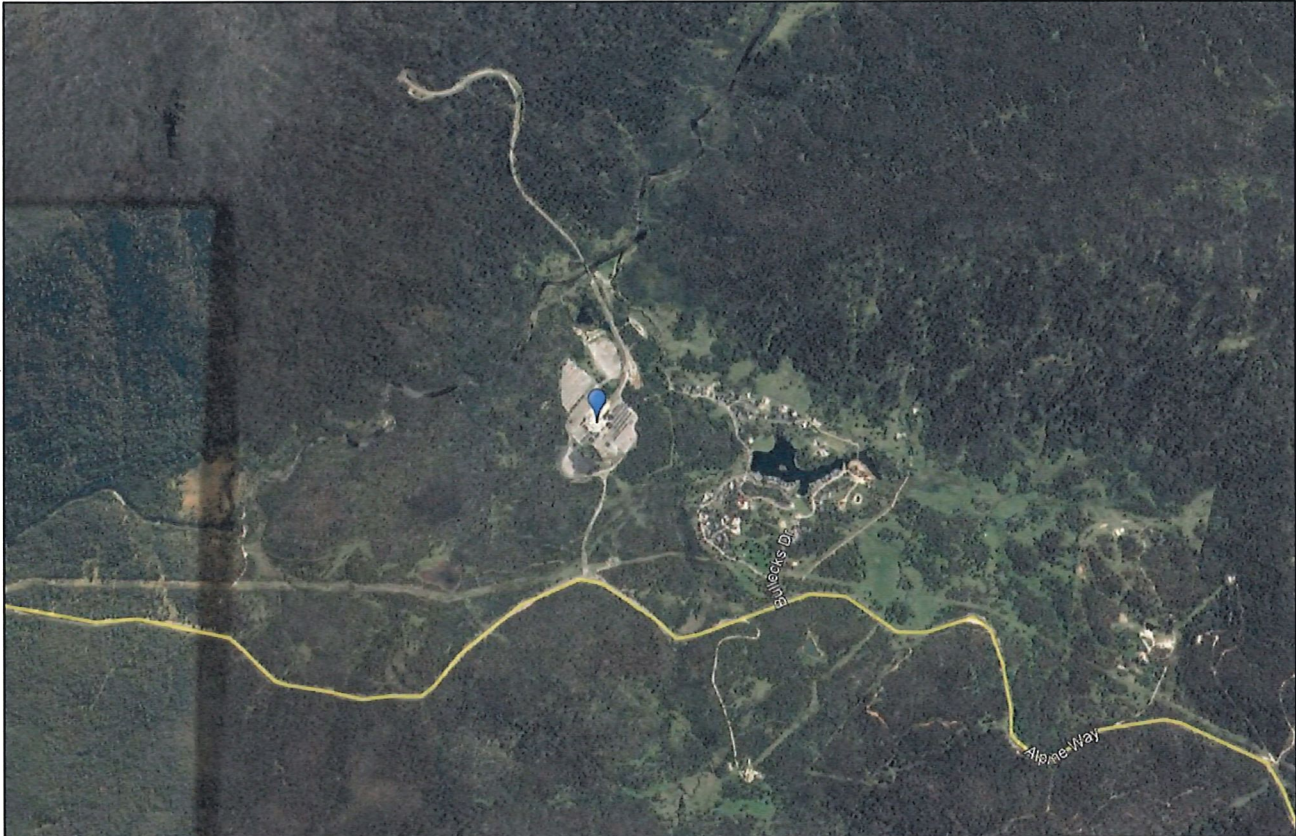


Figure 1: Blue pin marks the location of the proposed facility and surroundings (Google Maps 2017)

The subject site is located at Bullocks Flat Terminal, Kosciuszko National Park NSW 2627 (legally identified as being part of Lot 500 | DP 1171936), as shown in Figure 1. The subject site is located within the existing Terminal building envelope and is north west of the Lake Crackenback Resort area. The site and its surroundings are situated within Kosciuszko National Park.

In addition to the surrounding area being designated for conservation, it also plays a key role for recreational purposes. During the winter months, the area is a popular tourist destination for snow related activities, which are supported by a number of lodges providing accommodation. During the summer months, the area hosts numerous trails, which are a popular tourist destination for hikers.

5 The Proposal

5.1 Facility and Equipment Details

The specific components of the proposed installation are described below:

- Installation of four (4) Omni antennas within the concourse area.
- Installation of two (2) Panel antenna within the concourse area.
- Installation of associated electronic equipment within the Switch Room.
- Installation of an air-conditioning outdoor unit on the roof adjacent to the existing air-conditioning outdoor unit. The new outdoor unit will be of a similar scale and colour to the existing unit.
- The installation of associated ancillary equipment and works.

The Design Drawings are provided in **Appendix A**.

5.2 Access Details

Access to the site is available via the existing Bullocks Flat Terminal access routes. During the construction period, any traffic impacts associated with construction will be of a short-term duration and are not anticipated to adversely impact the surrounding road network. No road closures are expected due to the requirement for hoarding of construction materials. Upon completion of construction works, it is not anticipated that the proposed development will have any significant impact on the local traffic network or volumes.

Typically, maintenance visits would be required to service equipment inside the communications room (approximately 1-2 times per year), or as required in the event of an electrical outage or other similar event. Routine maintenance would generally involve one vehicle per visit and parking is available close to the subject site for this purpose. Other maintenance would occur on an as-need basis and would not generate significant traffic movement. Any impact on the local road system is considered to be negligible.

5.3 Power Details

A main switch board currently exists within the Switch Room. Power to the proposed facility will be obtained via a new 3-Phase Authority Meter installed within the Switch Room. The meter will be installed by an authorised Skitube Electrician.

5.4 Construction of the Facility

Construction activities will involve the following:

- Installation of the communications equipment and antennas – involving technicians working within the Terminal building.
- Installation of cabling between the Switch Room and the respective antenna, together with associated ancillary equipment.
- Installation of the air-conditioning unit.
- Installation of the equipment racks and electrical equipment within the Switch Room, along with a new 3-Phase Authority Meter.
- The daily construction process will require three to six workers on site and an average of four to six vehicle movements. The general construction timeframe, weather dependent, is approximately 6 weeks.

5.5 Noise and Vibration

Noise and vibration emissions associated with the proposed facility will be limited to the construction phase outlined above. Noise generated during the construction phase, will be short-term in duration and in accordance with the standards outlined in the *Environmental Protection Regulation 1998* and *Environmental Protection (Noise) Policy 1997*.

5.6 Erosion and Sediment Control and Waste Management

Appropriate construction management measures, incorporating soil erosion and sediment controls, in accordance with the relevant regulations of the “Blue Book” – ‘Managing Urban Stormwater: Soils and Construction’ will be implemented⁶.

Once constructed, telecommunications facilities are unmanned and remotely operated, they do not generate any waste or emissions as part of their operation, nor do they require connections to utility services such as waste or water.

5.7 Site Photographs

Images of the proposed equipment locations are shown in Figures 2 to 5.

⁶ Landcom, 2004, “*Managing Urban Stormwater: Soils and Construction*”, 4th ed, Parramatta N.S.W, Landcom



Figure 2: Proposed location of the equipment racks and electronic equipment within the existing Switch Room.

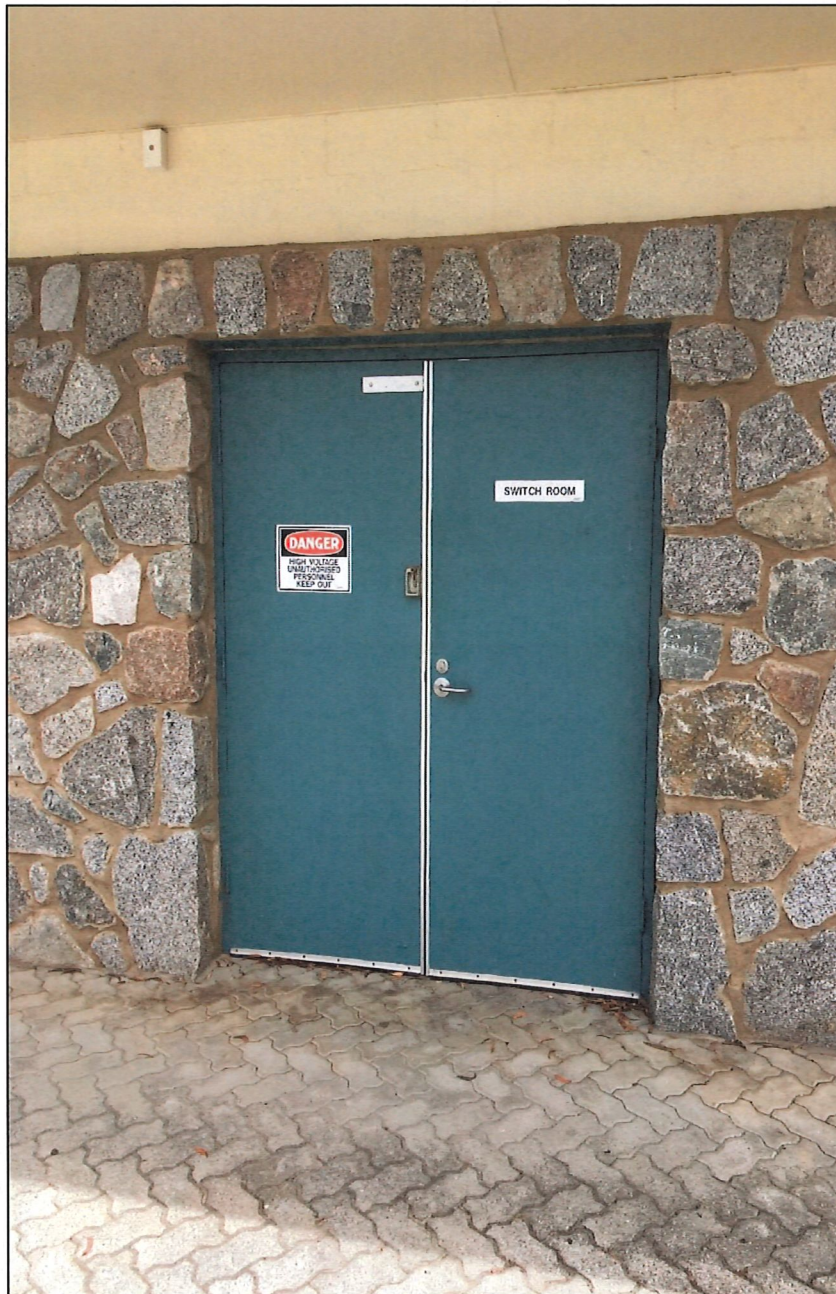


Figure 3: Entrance to the Switch Room.



Figure 4: Proposed location of the Panel antennas at the western end of the major platform.



Figure 5: Proposed location of the Omni antennas above the coach driver lounge area.

6 Regulatory Framework

The following legislation is relevant to the preparation of this SEE:

- *Telecommunications Act 1997 (the Act);*
- *Telecommunications Code of Practice 1997 (the Code);*
- *Telecommunications (Low-impact Facilities) Determination 1997 (the Determination);*
- *Industry Code C564:2011 - Mobile Phone Base Station Deployment (the Deployment Code);*
- *NSW Telecommunications Facilities Guideline including Broadband July 2010 (the Guideline);*
- Environmental Protection and Biodiversity Act 1999 (EPBC Act)
- *Environment Planning and Assessment Act 1979 (the EPA);*
- *State Environmental Planning Policy (Infrastructure) 2007 (the SEPP);*
- *State Environmental Planning Policy (Kosciuszko National Park – Alpine Resorts) 2007 (the Alpine Resorts SEPP);*
- *Kosciuszko National Park Plan of Management 2006 (KNPPOM)*

6.1 Commonwealth Legislation

6.1.1 Telecommunications Act 1997

The *Telecommunications Act* came into operation in July 1997 setting up a framework for regulating the actions of telecommunications carriers and service providers such as Optus, which is a licensed carrier under the Act.

This legislation establishes the criteria for 'Low-Impact' telecommunication facilities, as defined by the Determination, under subclause 6(3) of Schedule 3 of the Act. A proposed facility is a Low-Impact facility if it meets the requirements of the Determination. Under the Act and the Determination certain telecommunications facilities cannot be classified as low-impact facilities. In this instance, a site located within an 'Area of Environmental Significance' cannot be classified as a low-impact facility under the legislation, and accordingly, State and Local planning laws apply.

6.1.2 Telecommunications Code of Practice 1997

The Code is established under the Act, which sets out the conditions under which a carrier must operate. Section 2.11 of the Commonwealth Code sets out the design, planning and installation requirements for the carriers to ensure the installation is in accordance with industry "best practise". This is required to:

"...Minimise the potential degradation of the environment and the visual amenity associated with the facilities."

Best practise also involves the carrier complying with any relevant industry code or standard that is registered by the Australian Communications and Media Authority (ACMA) under Part 6 of the Act.

6.1.3 The Deployment Code

In response to calls for greater council and community involvement when telecommunications facilities are installed, the Communications Alliance Ltd developed the 'Industry Code C564:2011 - Mobile Phone Base Station Deployment' ("the Deployment Code"). The Deployment Code cannot change the existing regulatory regime for telecommunications at Local, State or Federal level. However, it supplements the existing obligations on carriers, particularly in relation to community consultation and the consideration of exposure to radio signals, sometimes known as electromagnetic energy (EME or EMR).

The Deployment Code imposes mandatory levels of notification and community consultation for sites complying with the Determination. It identifies varying levels of notification and/or consultation depending on the type and location of the infrastructure proposed.

As the proposed telecommunications facility is not considered to be a 'low-impact' facility under the Determination, it is not subject to the notification or consultation requirements associated with the Deployment Code. These processes are handled within the relevant State and Local consent public notification procedures.

Nevertheless, Sections 4.1 and 4.2 of the Deployment Code are relevant to the preparation of this Application for Planning Permit and we confirm that Optus has applied the Precautionary Approach to site selection and design in accordance with Sections 4.1 and 4.2 of the Deployment Code. The Precautionary Approach Checklist (PAC) has been prepared in accordance with Sections 4.1 and 4.2 of the Deployment Code and are enclosed in **Appendix B**.

Included in the Section 4.1 PAC is a statement on how the public's exposure to EME from the site has been minimised. All emissions from the site will be well within the limits of the relevant Australian Standard. Details of this standard are contained in the following section. The Section 4.2 PAC demonstrates how the proposal has been designed in accordance with the Deployment Code 'precautionary approach.

The subject site has been selected and designed to comply with the requirements of the Deployment Code and the precautionary approach, which has been adhered to.

6.1.4 Environmental Protection and Biodiversity Act 1999

The EPBC Act relates to the assessment and approval of development proposals where those proposals involve actions that have a significant impact on matters of national environmental significance, the environment of Commonwealth owned land and actions carried out by the Commonwealth Government.

An EPBC Act Protected Matters Search has been undertaken to identify Matters of National Environmental Significance which occur or relate to the proposed development. An assessment as to whether the proposed works will have a significant environmental impact has been undertaken in accordance with the EPBC Act 'Significant Impact Guideless 1.1'. The outcome of the assessment is provided in Table 1.

Table 1: Assessment of the proposal against the Significant Impact Guidelines

Matter of National Environmental Significance	Matters Identified	Are the works likely to have a significant impact?
World heritage properties	None	N
National heritage places	<ul style="list-style-type: none"> - Australian Alps National Parks and Reserves - Snowy Mountain Scheme 	N
Wetlands of international importance (listed under the Ramsar Convention)	<ul style="list-style-type: none"> - Blue Lake 	N
Listed threatened species and ecological communities	<ul style="list-style-type: none"> - Three (3) Threatened Ecological Communities - Twenty-two (22) threatened species 	N
Migratory species protected under international agreements	<ul style="list-style-type: none"> - Twelve (12) migratory species 	N
Commonwealth marine areas	<ul style="list-style-type: none"> - None 	N
The Great Barrier Reef Marine Park	<ul style="list-style-type: none"> - None 	N
Nuclear actions (including uranium mines)	<ul style="list-style-type: none"> - None 	N
A water resource, in relation to coal seam gas development and large coal mining development	<ul style="list-style-type: none"> - None 	N

As the proposed works are contained within the existing building envelope, it is concluded that they are unlikely to have a significant impact on any Matters of National Environmental Significance and are therefore not a controlled action. As such, these matters will not be discussed further in this SEE. A copy of the Protected Matters Search Report is provided in **Appendix C**.

6.2 State

6.2.2 State Environmental Planning Policy 2007

The Infrastructure SEPP was introduced with the purpose of simplifying planning controls for infrastructure developments and facilitating public consultation during the development assessment process. The Infrastructure SEPP sets out state-wide planning provisions and development controls for telecommunication facilities in NSW. The Infrastructure SEPP allows telecommunications facilities to be either exempt from planning approval, or permissible with consent.

A telecommunications facility has been defined as:

*“(1) any part of the infrastructure of a telecommunications network, or
(2) any line, optical fibre, equipment, apparatus, tower, mast, antenna, dish, tunnel, duct, hole, pit, pole or other structure in connection with a telecommunication network.”*

Clause 115(1) provides that:

“Development for the purposes of telecommunications facilities, other than development in clause 114 or development that is exempt development under clause 20 or 116, may be carried out by any person with consent on any land.”

Telecommunications facilities are therefore permissible in all zones, though only with consent (where the facility is not a low-impact facility within the meaning of the Determination). The proposed telecommunications facility is consistent with the Infrastructure SEPP definition and is considered as development permitted with consent.

Clause 115(3) of the Infrastructure SEPP also provides that:

“Before determining a development application for development to which this clause applies, the consent authority must take into consideration any guidelines concerning site selection, design, construction or operating principles for telecommunications facilities that are issued by the Director-General for the purposes of this clause and published in the Gazette.”

The relevant guideline referred to is the Guideline, which contains principles in relation to telecommunications facilities as follows:

- Principle 1: A Telecommunications facility is to be designed and sited to minimise visual impact
- Principle 2: Telecommunications facilities should be co-located wherever practical
- Principle 3: Health standards for exposure to radio emissions will be met
- Principle 4: Minimise disturbance and risk, and maximise compliance

An assessment of the proposed development against each principle is provided in Table 2. The Infrastructure SEPP recognises the importance of telecommunications facilities, including that planning decisions should reflect a reasonable balance between the provision of important telecommunications services and the need to protect the environment from adverse impacts arising from telecommunications infrastructure. In line with this, the proposal aims to deliver services within the Bullocks Flat Terminal building, which are required by Optus mobile customers. Whilst it is acknowledged that minor amenity impacts may occur because of the proposed use and development, the importance of the services to the community are recognised in the legislative context.

Table 2: Assessment of the proposal against the Site Selection, Design, Construction and Operation Principles for Telecommunications Facilities

Principle	Planning Response
<p>Principle 1: A telecommunications facility is to be designed and sited to minimise visual impact</p> <p>(a) As far as practical, a telecommunications facility that is to be mounted on an existing building or structure should be integrated with the design and appearance of the building or structure.</p> <p>(b) The visual impact of telecommunications facilities should be minimised, visual clutter is to be reduced particularly on tops of buildings, and their physical dimensions (including support mounts) should be sympathetic to the scale and height of the building to which it is to be attached, and sympathetic to adjacent buildings.</p> <p>(c) Where telecommunications facilities protrude from a building or structure and are predominantly backgrounded against the sky, the facility and their support mounts should be either the same as the prevailing colour of the host building or structure, or a neutral colour such as grey should be used.</p> <p>(d) Ancillary facilities associated with the telecommunications facility should be screened or housed, using the same colour as the prevailing background to reduce its visibility, including the use of existing vegetation where available, or new landscaping where possible and practical.</p> <p>(e) A telecommunications facility should be located and designed to respond appropriately to its rural landscape setting.</p> <p>(f) A telecommunications facility located on, or adjacent to, a State or local heritage item or within a heritage conservation area, should be sited and designed with external colours, finishes and scale</p>	<p>a) The proposed equipment will be mounted within the existing Bullocks Flat Terminal building envelope.</p> <p>b-g) The proposal will have a negligible impact on the visual amenity of Bullocks Flat and Lake Crackenback, as the works are wholly contained within the existing building envelope.</p> <p>h) The proposal will not involve the removal of any trees or vegetation.</p> <p>i) Noted.</p> <p>j) The siting and design of this facility has been undertaken in accordance with all relevant industry design guidelines.</p>

sympathetic to those of the heritage item or conservation area.

(g) A telecommunications facility should be located so as to minimise or avoid the obstruction of a significant view of a heritage item or place, a landmark, a streetscape, vista or a panorama, whether viewed from public or private land.

(h) The relevant local government authority must be consulted where the pruning, lopping, or removal of any tree or other vegetation would contravene a Tree Preservation Order applying to the land or where a permit or development consent is required.

(i) A telecommunications facility that is no longer required is to be removed and the site restored, to a condition that is similar to its condition before the facility was constructed.

(j) The siting and design of telecommunications facilities should be in accordance with any relevant Industry Design Guides.

Principle 2: Telecommunications facilities should be co-located wherever practical

(a) Telecommunications lines are to be located, as far as practical, underground or within an existing underground conduit or duct.

(b) Overhead lines, antennas and ancillary telecommunications facilities should, where practical, be co-located or attached to existing structures such as buildings, public utility structures, poles, towers or other radio communications equipment to minimise the proliferation of telecommunication facilities and unnecessary clutter.

(c) Towers may be extended for the purposes of co-location.

(d) The extension of an existing tower must be considered as a practical co-location solution prior to building new towers.

(e) If a facility is proposed not to be co-located the proponent must demonstrate that co-location is not practicable.

(f) If the development is for a co-location purpose, then any new telecommunications facility must be designed, installed and operated so that the resultant cumulative levels of radio frequency emissions of the co-located telecommunications facilities are within the maximum human exposure levels set out in the Radiation Protection Standard.

a) Where feasible, all cables have been located within existing conduits.

b) The proposed equipment will be located within the existing Terminal building envelope.

c) Not applicable to this proposal.

d) Not applicable to this proposal.

e) The proposed facility is required to provide coverage solely within the Bullocks Flat Terminal building, no suitable structures were available that met the coverage objectives for this proposal.

f) The proposal is compliant with the ARPANSA Radiation Protection Standard.

<p>Note: Co-location is 'not practicable' where there is no existing tower or other suitable telecommunications facility that can provide equivalent site technical specifications including meeting requirements for coverage objectives, radio traffic capacity demands and sufficient call quality.</p>	
<p>Principle 3: Health standards for exposure to radio emissions will be met</p> <p>(a) A telecommunications facility must be designed, installed and operated so that the maximum human exposure levels to radiofrequency emissions comply with Radiation Protection Standard. Refer also to Appendix D.</p> <p>(b) An EME Environmental Report shall be produced by the proponent of development to which the Mobile Phone Network Code applies in terms of design, siting of facilities and notifications. The Report is to be in the format required by the Australian Radiation Protection Nuclear Safety Agency. It is to show the predicted levels of electromagnetic energy surrounding the development comply with the safety limits imposed by the Australian Communications and Media Authority and the Electromagnetic Radiation Standard, and demonstrate compliance with the Mobile Phone Networks Code.</p>	<p>a) The proposal is compliant with the ARPANSA Radiation Protection Standard.</p> <p>b) As mentioned above, IBC systems are all designed to provide coverage to a small geographic area and so the total power output from the antennas is very low, less than a quarter of a watt. The system operates in a similar way to external base stations but at much lower power levels – just like a cordless phone at home. The typical range of measured levels from In-Building systems is in the order of 14,000 to 1,000,000 times below the requirements of the ARPANSA Standard. In-Building systems are designed so that the ARPANSA Standard is not exceeded in any area accessible by the public.</p>
<p>Principle 4: Minimise disturbance and risk, and maximise compliance</p> <p>(a) The siting and height of any telecommunications facility must comply with any relevant site and height requirements specified by the Civil Aviation Regulations 1988 and the Airports (Protection of Airspace) Regulations 1996 of the Commonwealth. It must not penetrate any obstacle limitation surface shown on any relevant Obstacle Limitation Surface Plan that has been prepared by the operator of an aerodrome or airport operating within 30 kilometres of the proposed development and reported to the Civil Aviation Safety Authority Australia.</p> <p>(b) The telecommunications facility is not to cause adverse radio frequency interference with any airport, port or Commonwealth Defence navigational or communications equipment, including the Morundah Communication Facility, Riverina.</p> <p>(c) The telecommunications facility and ancillary facilities are to be carried out in accordance with the</p>	<p>a) Not applicable to this proposal.</p> <p>b) Noted.</p> <p>c) The antennas and ancillary equipment associated with this proposal, will be installed and operated in accordance with all manufacturer specifications.</p> <p>d) Noted.</p> <p>e) The proposed facility will be erected wholly within the boundary of the property where the landowner has agreed to the facility being located on the land.</p> <p>f) Construction of the proposed telecommunications facility will be carried out in accordance with all relevant regulations of the Blue Book – 'Managing Urban Stormwater: Soils and Construction' (Landcom 2004), or its replacement.</p> <p>g) The proposed equipment has been sited to minimise any obstruction or risk to pedestrians and vehicles. Additionally, appropriate mitigation measures will be implemented during the construction process.</p>

applicable specifications (if any) of the manufacturers for the installation of such equipment.

(d) The telecommunications facility is not to affect the structural integrity of any building on which it is erected.

(e) The telecommunications facility is to be erected wholly within the boundaries of a property where the landowner has agreed to the facility being located on the land.

(f) The carrying out of construction of the telecommunications facilities must be in accordance with all relevant regulations of the Blue Book – ‘Managing Urban Stormwater: Soils and Construction’ (Landcom 2004), or its replacement.

(g) Obstruction or risks to pedestrians or vehicles caused by the location of the facility, construction activity or materials used in construction are to be mitigated.

(h) Where practical, work is to be carried out during times that cause minimum disruption to adjoining properties and public access. Hours of work are to be restricted to between 7.00am and 5.00pm, Mondays to Saturdays, with no work on Sundays and public holidays.

(i) Traffic control measures are to be taken during construction in accordance with Australian Standard AS1742.3-2002 Manual of uniform traffic control devices – Traffic control devices on roads.

(j) Open trenching should be guarded in accordance with Australian Standard Section 93.080 – Road Engineering AS1165 – 1982 – Traffic hazard warning lamps.

(k) Disturbance to flora and fauna should be minimised and the land is to be restored to a condition that is similar to its condition before the work was carried out.

(l) The likelihood of impacting on threatened species and communities should be identified in consultation with relevant state or local government authorities and disturbance to identified species and communities avoided wherever possible.

(m) The likelihood of harming an Aboriginal Place and / or Aboriginal object should be identified. Approvals from the Department of Environment, Climate Change and Water (DECCW) must be

h) Noted.

i) it is not anticipated that the proposal will impact on any roads

j) Not applicable to this proposal.

k) The proposed facility has been sited and designed to minimise any disturbance to flora and fauna.

l) It is not anticipated that the proposal will have an impact upon any threatened species or communities.

m) It is not anticipated that the proposal will impact upon any Aboriginal place or object. However, during the construction period, should any items of aboriginal heritage be discovered work would cease immediately and the relevant authorities identified. No work would commence until approval was given to proceed. Refer to Section 10 for further information on Aboriginal Heritage.

n) Upon completion of the construction works, any street furniture, paving or other existing facilities removed or damaged during construction will be reinstated to at least the same condition as that which existed prior to the telecommunications facility being installed.

obtained where impact is likely, or Aboriginal objects are found.

(n) Street furniture, paving or other existing facilities removed or damaged during construction should be reinstated (at the telecommunications carrier's expense) to at least the same condition as that which existed prior to the telecommunications facility being installed.

The proposal is deemed to be compliant with the Site Selection, Design, Construction and Operation Principles for Telecommunications Facilities based on the above information.

6.2.2 State Environmental Planning Policy (Kosciuszko National Park – Alpine Resorts) 2007

The site located within the Bullocks Flat Terminal area, as shown in Figure 6. It is therefore subject to the provisions of the Alpine Resorts SEPP.

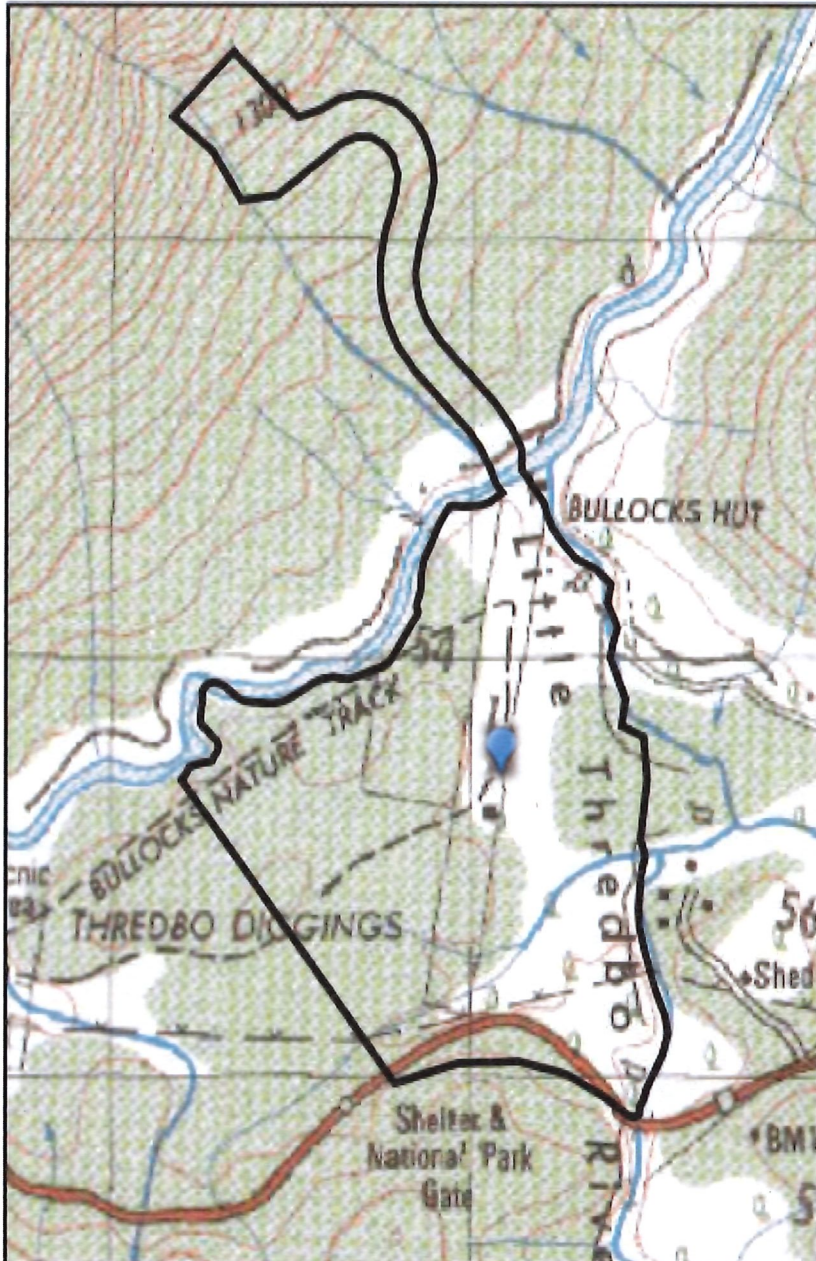


Figure 6: Blue pin marks the location of the proposed facility on the Alpine Resorts

An assessment of how the proposal complies with the objectives of this policy set out in Part 1, Clause 2 of the SEPP has been undertaken below:

“(1) The aim of this Policy is to protect and enhance the natural environment of the alpine resorts, in the context of Kosciuszko National Park, by ensuring that development in those resorts is managed in a way that has regard to the principles of ecologically sustainable development (including the conservation and restoration of ecological processes, natural systems and biodiversity).”

- Under this SEPP, development for the purposes of telecommunications facilities is permissible with consent.

“(2) The objectives of this Policy are as follows:

“(a) To encourage the carrying out of a range of development in the alpine resorts (including the provision of services, facilities and infrastructure, and economic and recreational activities) that do not result in adverse environmental, social or economic impacts on the natural or cultural environment of land to which this Policy applies.”

- The proposal will ensure that Optus customers have access to reliable mobile services via the Optus mobile network. As the equipment is being installed within the existing building envelope, it will not result in any adverse environmental, social or economic impacts on the natural or cultural environment. Telecommunications are an essential service and improved mobile coverage and services in the area will ultimately have positive economic and social impacts, including greater connectivity to emergency services.

“(b) To put in place planning controls that contribute to and facilitate the carrying out of ski resort development in Kosciuszko National Park that is ecologically sustainable in recognition of the fact that this development is of State and regional significance.”

- The proposed facility has been sited and designed to ensure that there are no impacts on the ability to facilitate the carrying out of ecologically sustainable ski resort development in Kosciuszko National Park.

“(c) To minimise the risk to the community of exposure to environmental hazards, particularly geotechnical hazards, bush fire and flooding, by generally requiring development consent on land to which this Policy applies.”

- The proposed facility is contained within the existing building envelope and will not result in any community exposure to environmental hazards, geotechnical hazards, bushfire or flooding. The proposal will provide additional network support during the event of an emergency. The proposal is compliant with the ARPANSA Radiation Protection Standard.

Kosciuszko National Park Plan of Management 2006

The Kosciuszko National Park Plan of Management 2006 (KNPPOM) provides a framework of the objectives, principles and policies to guide the long-term management of the broad range of values contained in the park. According to the KNPPOM, the proposed site is located within an ‘area of exceptional recreational significance’ as shown in Figure 7.

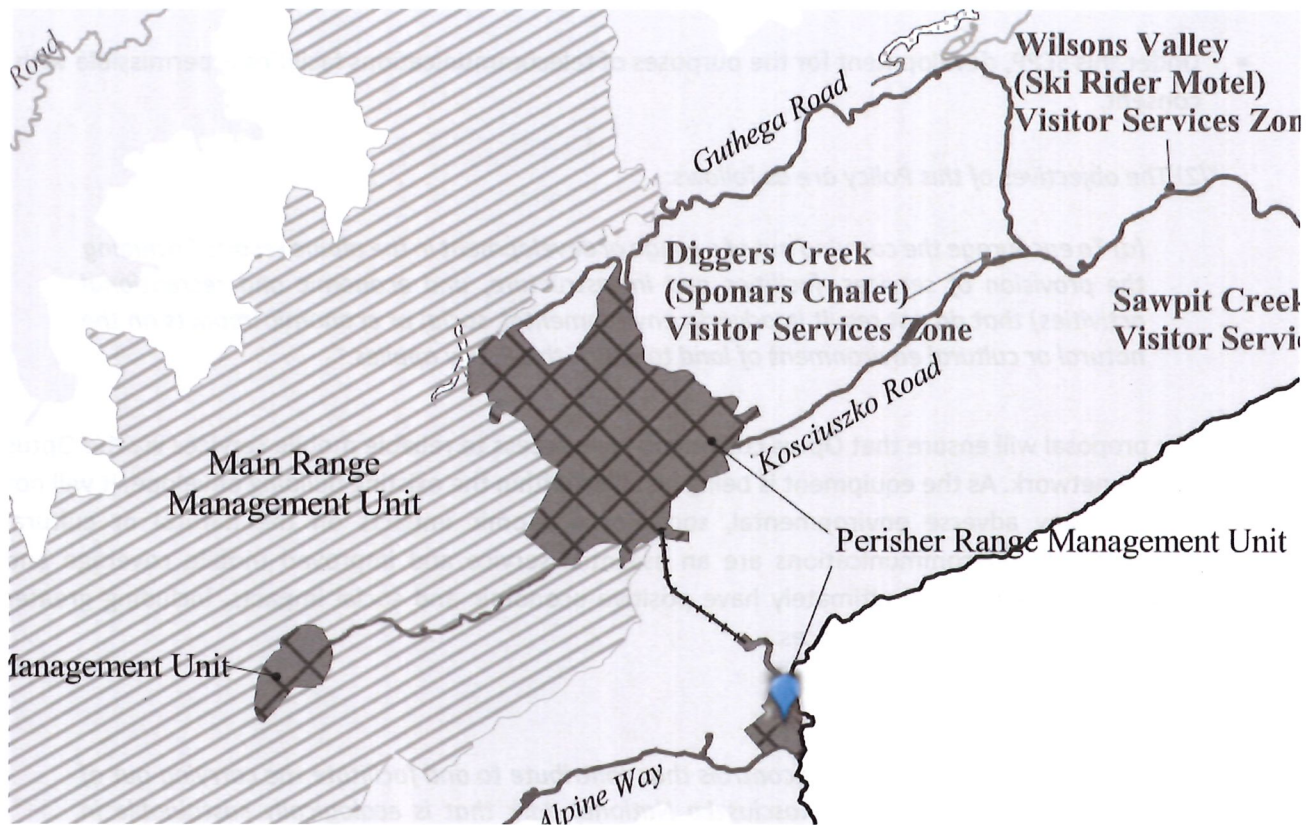


Figure 7: Blue pin marks the location of the proposed facility within an Area of Exceptional Recreational Significance (Department of Planning, Jindabyne Office 2007)

Section 12.6 of the Plan of Management provides specific objectives, policies and actions for telecommunications infrastructure throughout Kosciuszko National Park. For telecommunications infrastructure, the management objective is to ensure that:

“telecommunications and electricity infrastructure are managed in ways that minimise adverse impacts on the values of the park and other users”.

The proposed facility has been designed and sited to minimise impacts to the surrounding National Park and its users. An assessment of how the proposal complies with the Plan of Management's policies and actions relevant to telecommunications facilities has been undertaken in Table 3.

Table 3 – Kosciuszko National Park Plan of Management – Electricity Transmission Authorities and Telecommunications Carriers

Policies & Action	Applicable	Complies	Comment
<p>Together with the relevant owners and operators, undertake a review of all existing telecommunication towers and associated infrastructure in the park and determine future management actions to reduce the impacts associated with these facilities. Wherever possible, the Service will seek agreement on:</p> <ul style="list-style-type: none"> - The co-location of facilities at shared sites - The removal of all redundant infrastructure and the rehabilitation of disturbed sites and access roads no longer required. 	Y	Y	<p>The proposed facility is intended to supplement the existing coverage by providing IBC at the Bullocks Flat Terminal. The installation of the proposed infrastructure will provide improved service reliability solely for mobile phone users operating inside the building. As such, no co-location opportunities were available for this proposal.</p> <p>In the event that the site is decommissioned, all redundant telecommunications infrastructure will be removed and the site rehabilitated and returned to its original condition.</p>
<p>Require all additional telecommunication and transmission lines to be located underground.</p>	N	Y	<p>Not applicable to this proposal.</p>
<p>Prohibit additional telecommunication structures and related access in the Wilderness and Back Country Zones with the exception of installations that are to be co-located with existing fire towers or telecommunication infrastructure.</p>	N	Y	<p>The proposed works and access will not be located within the Wilderness and Back Country Zones.</p>

<p>Restrict additional telecommunication structures and related access to those that service adjacent rural communities and the alpine resorts and those required for the management of the park and the Snowy Mountains Hydro-electric Scheme where there are no feasible alternative sites outside the park or alternative technology available to meet the telecommunication need. These may only be permitted in the following zones:</p> <ul style="list-style-type: none"> - Visitor Services Zone; and - Major Road Corridors. 	<p>Y</p>	<p>Y</p>	<p>The proposed facility is required to provide IBC solely to the Bullocks Flat Terminal.</p>
<p>Ensure additional telecommunication infrastructure and related access meets the visual quality and other requirements outlined in Section 11.6.</p>	<p>N</p>	<p>Y</p>	<p>The proposed infrastructure will be contained within the existing building envelope. It is not anticipated that the equipment will have any impact from any significant viewpoints or scenic vistas.</p>
<p>Require telecommunication and electricity infrastructure providers to remove infrastructure that is no longer required. Where the removal of infrastructure would be unsafe or create unacceptable environmental impact, action will be taken to reduce the visual intrusiveness of redundant facilities.</p>	<p>Y</p>	<p>Y</p>	<p>In the event that the site is decommissioned, all redundant telecommunications infrastructure will be removed and the site rehabilitated and returned to its original condition.</p>

7 Visual Impact

The proposal will have a negligible impact on the visual amenity of Lake Crackenback, as the works are wholly contained within the existing building envelope.

8 Flora and Fauna

The proposed development will be contained within the existing Bullocks Flat Terminal building envelope, as such, it is not anticipated that there will be any impact to Flora and Fauna within the area.

9 Health and Safety

Optus acknowledges some people are genuinely concerned about the possible health effects of electromagnetic energy (EME) from mobile phone base stations and is committed to addressing these concerns responsibly. Optus, along with the other mobile phone carriers, must strictly adhere to Commonwealth Legislation and regulations regarding mobile phone facilities and equipment administered by the Australian Communications and Media Authority (ACMA).

Mobile Carriers ensure that facilities operate well within the prescribed health standards mandated by the ACMA. The limits for public human exposure to EME are based on the Radiation Protection Standard – Maximum Exposure Levels to Radiofrequency Fields – 3kHz to 300GHz, developed by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), and referred to as the ARPANSA Standard. In 2003 the ACMA adopted this technical standard for continuous exposure of the general public to RF EME from mobile base stations. The standard, known as the Radiocommunications (Electromagnetic Radiation – Human Exposure) Standard 2003, was prepared by ARPANSA and is the same as that recommended by ICNIRP (International Commission for Non-Ionising Radiation Protection), an agency associated with the World Health Organisation (WHO). Mobile carriers must comply with the Australian Standard on exposure to EME set by the ACMA.

The Standard operates by placing a limit on the strength of the signal (or RF EME) that Optus can transmit to and from any network base station. The general public health standard is not based on distance limitations, or the creation of “buffer zones”. The environmental standard restricts the signal strength to a level low enough to protect everyone at all times. It has a significant safety margin, or precautionary approach, built into it.

Optus relies on the expert advice of national and international health authorities such as the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) and the World Health Organisation (WHO) for overall assessments of health and safety impacts. The WHO advises that all expert reviews on the health effects of exposure to radiofrequency fields have concluded that no adverse health effects have been established from exposure to radiofrequency fields at levels below the international safety guidelines that have been adopted in Australia.

IBC systems are all designed to provide coverage to a small geographic area and so the total power output from the antennas is very low, less than a quarter of a watt. The system operates in a similar way to external base stations but at much lower power levels – just like a cordless phone at home. The typical range of measured levels from In-Building systems is in the order of 14,000 to 1,000,000 times below the requirements of the ARPANSA Standard. In-Building systems are designed so that the ARPANSA Standard is not exceeded in any area accessible by the public. The installation comprises low RF power infrastructure and accordingly, site EMR assessment in accordance with the ARPANSA format is not required for the installation.

10 Heritage

10.1 Aboriginal Heritage

Investigations into the cultural significance of the site indicate that the proposed site is not located in, or close to, an area of known significance to Aboriginal persons or Torres Strait Islanders. Catalyst request Council to provide details of any known heritage or items of cultural significance as part of the planning approvals process.

The National Parks and Wildlife Act 1974 (NPW Act), administered by the Office of Environment and Heritage (OEH), is the primary legislation for the protection of some aspects of Aboriginal cultural heritage in New South Wales. The NPW Act requires a developer to apply 'due diligence', which means a legal standard of care, to determine whether a proposed activity could harm (i.e. damage, destroy, deface or move) Aboriginal objects or declared Aboriginal Places. In the context of protecting Aboriginal cultural heritage, due diligence involves taking reasonable and practicable measures to determine whether a developer's actions will harm an Aboriginal object and, if so, what measures can be taken to avoid that harm. The process for applying due diligence is described in the OEH publication Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales 2010 ("the Due Diligence Code").

Guidelines under Section 8 in the Due Diligence Code have been followed in preparation of the development application. A search under the Aboriginal Heritage Information Management System (AHIMS) is enclosed at **Appendix D**. The search is centred at the site location with a buffer of 50m. No Aboriginal sites are recorded and no Aboriginal places are declared near the location. On this basis, the development application demonstrates Due Diligence.

It is considered that the area is of low archaeological sensitivity as the works are contained within the existing building envelope. However, should any item of archaeological importance be discovered during the construction, work would cease immediately and all appropriate authorities would be notified of the item discovered. Work would not resume until all clearances were received from the relevant authorities, in accordance with the Due Diligence Code.

10.2 Non-Indigenous

Heritage registers exist at the Commonwealth, state and local level. After an initial desktop assessment of the subject site it is anticipated that the proposed facility will not have a significant effect on a place that is entered in a register relating to heritage conservation, a terrestrial or marine reserve for nature conservation purposes, a site on the world heritage list or a place covered by International Treaties.

11 Conclusion

13.1 Summary

This report provides the necessary information to support the application for planning approval to use and develop the site at Bullocks Flat Terminal, Kosciuszko National Park, for the purpose of a telecommunications facility. An assessment of the proposed site has been undertaken with a view to ensuring that the proposal complies with relevant Commonwealth and State legislation, planning policies and controls as applicable.

It is deemed that the proposed use will not be in conflict with surrounding land uses, nor will it decrease the general amenity of the area or have a detrimental impact on the local environment. The proposal is consistent with the planning scheme controls including the purpose and objectives of the Alpine Resorts SEPP. The development ensures that telecommunications infrastructure and services are provided in an efficient and cost-effective manner to meet community needs, whilst having a minimal impact on the amenity of the area. Approval of the proposed use and development will be consistent with:

- Telecommunications Act 1997 (the Act);
- Telecommunications Code of Practice 1997 (the Code);
- Telecommunications (Low-impact Facilities) Determination 1997 (the Determination);
- Industry Code C564:2011 - Mobile Phone Base Station Deployment (the Deployment Code);
- NSW Telecommunications Facilities Guideline including Broadband July 2010 (the Guideline);
- Environmental Protection and Biodiversity Act 1999 (EPBC Act)
- Environment Planning and Assessment Act 1979 (the EPA);
- State Environmental Planning Policy (Infrastructure) 2007 (the SEPP);
- State Environmental Planning Policy (Kosciuszko National Park – Alpine Resorts) 2007 (the Alpine Resorts SEPP);
- Kosciuszko National Park Plan of Management 2006 (KNPPOM)

13.2 Recommendation

The subject site is suitable for the proposed development, which demonstrates compliance with all relevant legislation and guidelines. Subject to the outcomes of appropriate referrals to relevant authorities, it is recommended that Department of Planning approve the Development Application.

Appendix A

Design Drawings