VEGETATION PRE-CLEARANCE

ECOLOGICAL IMPACT SURVEY

FOR A PROPOSAL TO INSTALL A

NEW TELECOMMUNICATIONS FACILITY

AT

8163 KOSCIUSZKO ROAD,

KOSCIUSZKO NATIONAL PARK, NSW, 2627

Prepared for:

Genus Services

Amended 25th January 2024

ACS ENVIRONMENTAL PTY LTD

Flora and Fauna Surveys, Biodiversity and Ecological Impact Assessment &
Bushland Plans of Management Services
Australian Business Number (ABN) 71 034 926 744
3/28 Tullimbar Rd, Cronulla NSW. 2230
.
Tel: 9527 5262; Mob: 0403 081902.

Email: acs@actinotus.com
Web: www@actinotus.com

Director

Peter Stricker BSc. (Hons) (Syd) [] # *^

[] Member Ecological Consultants Association NSW Inc

Accredited Biodiversity Assessment Assessor (Biodiversity Conservation Act 2016) - (Accreditation Number BAAS 18125)

*ACS Environmental is an accredited Animal Research Establishment certified by the NSW Dept of Primary industries

^ Scientific Biodiversity Conservation Act Licence BSL100855 (DPE 2024 in progress)

The principal of 'ACS Environmental P/L has worked in the area of floristic and faunal impact assessment services for a period of greater than 20 years. He also has over 30 years of experience in scientific research (ecological) and teaching in biological science.

CONTENTS **page No.**

1 Required works, methods and potential impacts to vegetation 1

2 Vegetation occurring in locality of proposed facility (Figures 3, 4 & 5) 8

2.1 Mapped vegetation occurring in locality 8
2.2 Likely vegetation communities occurring in locality 11
2.3 Status of vegetation occurring at the proposed facility that would require removal 12

3 Potential impacts of proposed clearing of vegetation occurring at the subject site 12

3.1 Construction footprint, potential impacts and mitigation measures 12
3.2 Occurrence of threatened species, potential impacts and mitigation measures 13
3.3 Addressing other environmental constraints in relation to the proposed works 16

4 Conclusions of ecological surveys and assessment 17

5 Addressing the issue of protected matters under the EPBC Act (1999) including Place ID 105891 'Australian Alps National Parks and Reserves' and Place ID 105919 'Snowy Mountains Scheme' (Protected Matters database): 17

5.1 Addressing protected matters under the EPBC Act (1999) including Place ID 105891 'Australian Alps National Parks and Reserves' 17
5.2 Addressing protected matters under the EPBC Act (1999) including Place ID 105919 'Snowy Mountains Scheme' 19

6 References & literature reviewed 24

FIGURES

1 Location of subject site (blue marker) in relation to Kosciuszko Road and other structures and roads/tracks in the locality (Nearmap 2017) 3

2 Location of proposed site (Blue Marker, Coordin: 36.347936^0; 148.567571^0) in relation to existing storage sheds and water detention basin at subject site at 8163 Kosciuszko Road, Kosciuszko National Park (Nearmap 2017). 4

3 Image of proposed location of facility in existing cleared area as denoted in Figure 2 with a stand of low Snow Gum woodland located to the north, north-east and north-west (Image courtesy of Genus Services 2023) 5

FIGURES **page No.**

4 Image of proposed site location indicating cleared area with tussock grass (*Poa labillardierei*) and exotic grassland maintained by grazing by herbivores including Grey Kangaroo, Wallaroo and Pretty Face Wallaby, among others. Low stands of semi-mature Snow Gum woodland occur surrounding the cleared areas 6

5 Image of proposed site location viewed from the east toward the west indicating low gnarled individuals of Snow Gum, some that require clearing to provide an APZ of 15% tree canopy as protection from bushfire. Some rock outcrops are also evident, some providing sheltering overhangs and crevices for small mammals and reptiles 7

6 Mapping of vegetation communities at the subject area at the location of the proposed facility indicating the most likely plant community type (PCT) occurring at the location is PCT 3382 described as 'Kosciuszko Eastern Slopes Mountain Gum Forest' (DPE 2023). 10

7 Image of uncleared woodland occurring beyond the construction/APZ footprint to the north-east of the proposed site with Eastern Grey Kangaroo evident central in the image 11

8 Recorded location of Blue-tongued Greenhood (red triangle) about 9km to the north-west of the proposed facility at Sawpit Creek (DPE 2024) 13

9 Listed Australian Alps National Parks and Reserves included in National Heritage List Place ID 105891 with location of subject site indicated by the red star icon (MapData Sciences 2007) 18

10 Entrance to small patch of cleared exotic grassland where installation of the proposed Telstra facility is located; the adjacent areas have previously been cleared to stockpile equipment and materials, construct storage sheds and to implement turning bays, tracks and parking areas by National Parks of NSW (Image courtesy of National Parks NSW 2023). These areas are all included in Place ID 105891 as is the proposed facility located on a small area of 10 x 6m (Figures 2, 3, 4 & 5). No significant impact to this Protected Matter listing is considered to occur as a result of the proposal 19

FIGURES **page No.**

11 Map of the National Heritage Listing of Place ID 105919 indicating the extent of the boundaries of the Snowy Mountains Scheme which largely occurs well to the east of the section of Kosciuszko National Park in which the proposed Telstra facility is to be located (See Figures 1 & 10) (Source: Environmental Resource Information Network 2016). 20

TABLES

1 List of 9 threatened fauna that have been recorded within the locality (5km radius) of the subject site at Sawpit Creek within the last 20 years (DPE 2024) 15

APPENDICES

1 Flora species recorded at and in the vicinity of the proposed site at Sawpit Creek 22

GLOSSARY & ACRONYMS

BC Act - Biodiversity Conservation Act

BV Map - Biodiversity Values Map

CCPD – Crown Canopy Projective Density (DEC 2002)

CEEC – Critically Endangered Ecological Community

CRA - Conservation Risk Assessment

DCCEEW - Department of Climate Change, Environment, Energy and Water

DEC – State Department of Environment and Conservation

DECCW – State Department of Environment, Climate Change and Water

DPE - Department of Planning and Environment

EEC – Endangered Ecological Community

EPA Act – Environment Protection Act

EPBC Act – Environment Protection and Biodiversity Conservation Act

HTW - High Threat Weeds (DPE 2023)

NPWS – State National Parks and Wildlife Service

OEH – Office of the Environment and Heritage

PCT - Plant Community Type

RoTAP – Rare and Threatened Australian Plants

SMCMA – Sydney Metropolitan Catchment Management Authority

TEC - Threatened Ecological Community

TSC Act – Threatened Species Conservation Act

Vegetation Pre-clearance Ecological Survey in relation to the installation of a new Telecommunications facility in a cleared area of grassland at 8163 Kosciuszko Road, Kosciuszko National Park NSW 2627

Date surveyed: 18.12.2023

Project or Activity Name: Telstra Blackspot Program - 8163 Kosciuszko Road, Kosciuszko National Park NSW 2627

Specific Survey Requirement: Vegetation Pre-clearance Ecological Survey and Biodiversity Impact Assessment for removal of native vegetation occurring within the access and construction footprints of this site

ACS Environmental representatives: Mr P Stricker; Ms Eva Earle

1 Required works, methods and potential impacts to vegetation:

1. An ecological pre-vegetation clearance flora and fauna survey is required for a proposal to access a mostly cleared area where some vegetation removal may be required for the installation of a new telecommunications facility and for the provision of a required APZ under the legislative requirements of Planning for Bushfire Protection (2019).

   This proposal will enable Telstra to deliver a reliable mobile phone communications network to its customers in an otherwise 'blackspot' communications area.

   The proposed works include the installation of a 40m monopole, new antennas, external cabinets and associated equipment within a new fenced compound measuring 10m x 6m. The works also include the provision of a 10m Asset Protection Zone (APZ) around the new facility.

   Figure 1 is an aerial image of the relative location of the proposed facility in relation to Kosciuszko Road, Sawpit Creek.

   Figure 2 is an aerial image of the proposed location of the facility in relation to existing bushland and built structures.

Figure 3 is an image of the proposed site location of the facility in a cleared section of bushland.

The total area proposed for vegetation clearing and installation of the facility and for the associated APZ is estimated at 780m^2, with much of the vegetation comprised of grazed exotic grassland dominated by Common Couch. Figures 2 & 3 indicate the area that is proposed to be impacted including for the APZ.

Figures 4 & 5 are images of the current condition of the proposed area proposed for the new facility.

2. Vegetation management, particularly in regard to thinning eucalypt canopies within the APZ area, would be done primarily by hand using chainsaws and slashing equipment with trees thinned out to 15% canopy cover. There appear to be no small shrubs but ground cover plants such as tussocks can be cut to a height of about 100mm such that vegetative recovery following construction is enhanced.

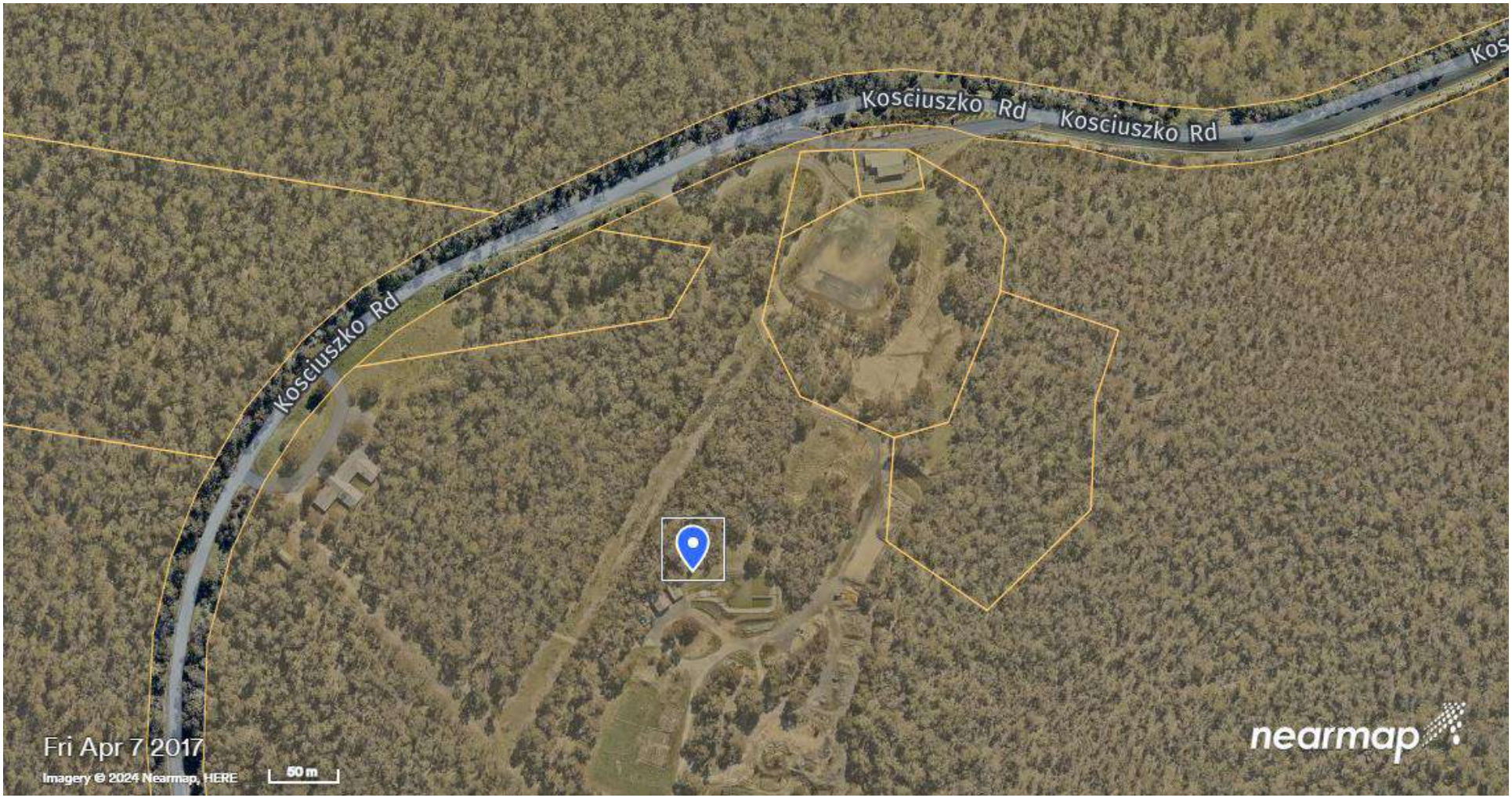

Figure 1 – Location of subject site (blue marker) in relation to Kosciuszko Road and other structures and roads/tracks in the locality (Nearmap 2017)

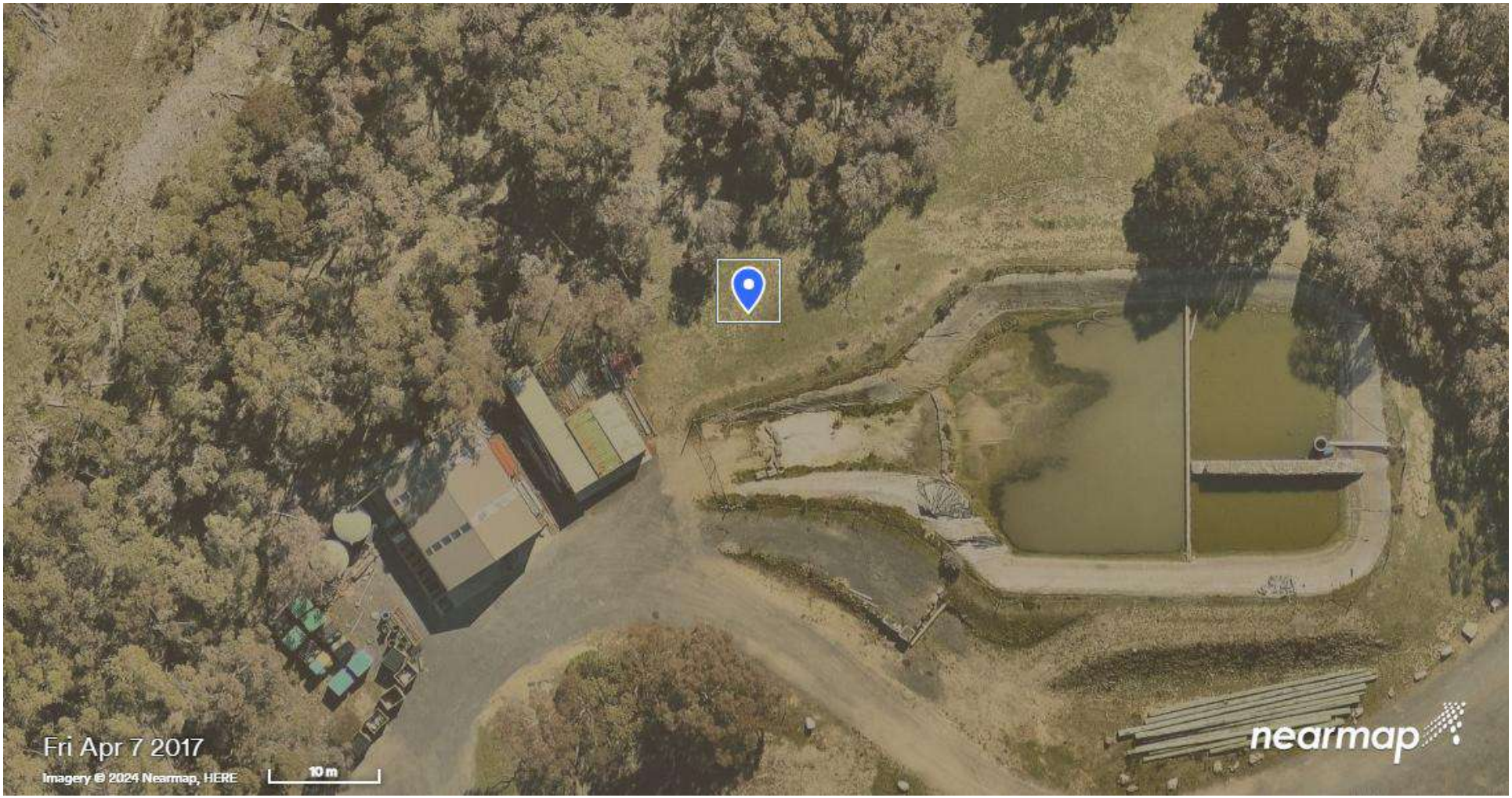

Figure 2 - Location of proposed facility (Blue Marker, Coordin: 36.347936^0; 148.567571^0) in relation to existing storage sheds and water detention basin at subject site at 8163 Kosciuszko Road, Kosciuszko National Park NSW 2627 (Nearmap 2017).

Figure 3 – Image of location of proposed new facility in existing cleared area as denoted in Figure 2 with a stand of low Snow Gum woodland located to the north, north-east and north-west (Image courtesy of Genus Services 2023)

Figure 4 – Image of proposed location of new facility indicating cleared area with tussock grass (*Poa labillardierei*) and exotic grassland maintained by grazing by herbivores including Grey Kangaroo, Wallaroo and Pretty Face Wallaby, among others. Low stands of semi-mature Snow Gum woodland occur surrounding the cleared areas.

Figure 5 – Image of proposed site location viewed from the east toward the west indicating low gnarled individuals of Snow Gum, some that require clearing to provide an APZ of 15% tree canopy as protection from bushfire. Some rock outcrops are also evident, some providing sheltering overhangs and crevices for small mammals and reptiles

2 Vegetation occurring in locality of proposed subject site (Figures 3, 4 & 5):

2.1 Mapped vegetation occurring in locality:

Figure 6 indicates DPE (2023) mapping of natural vegetation communities in the subject area of the proposed site. The ecological plant community occurring at the subject site (Figure 6) is likely a component of Kosciuszko Eastern Slopes Mountain Gum Forest (PCT 3382).

PCT 3382 - KOSCIUSZKO EASTERN SLOPES MOUNTAIN GUM FOREST

Description (DPE 2023): A mid-high to tall dry shrub-grass sclerophyll open forest found along the rugged and moderately dry, cool eastern margins of the Australian Alps bioregion and into adjacent upper parts of the South Eastern Highlands of NSW and the ACT.

This PCT is found from Rams Head Range north to Providence Portal, Mount Nattung and Brindabella Range, and east to Booroomba Rocks and Mount Clear. It commonly occurs on shallow rocky soils derived from granitic or hard sedimentary (sandstone, chert) rocks, often on steep exposed slopes, at elevations of generally 1000-1600 metres asl, with means of 740-1400 mm rainfall and 30-90 frost days annually.

A mid-dense canopy almost always includes *Eucalyptus pauciflora*, very frequently with *Eucalyptus dalrympleana*. The diverse mid-stratum commonly includes *Daviesia mimosoides, Hibbertia obtusifolia* and *Persoonia chamaepeuce* with occasional scattered *Brachyloma daphnoides, Exocarpos strictus, Pimelea linifolia, Lomatia myricoides*, or patches of *Acacia dealbata*.

The ground layer is very frequently dominated by tussocks of *Poa sieberiana*, commonly with *Lomandra longifolia, Stellaria pungens, Goodenia hederacea, Viola betonicifolia, Gonocarpus tetragynus* and *Stylidium graminifolium*.

On nearby sheltered slopes this community may grade into PCT 3297.

Distribution:

IBRA bioregions: AUA - Australian Alps
SEH Southern Highlands
IBRA Subregions: AUA01 - Snowy Mountains
SEH16 - Monaro
SEH06 - Murrumbateman
Extent: 39,927ha

% Cleared: 5.33%

TEC (Threatened Ecological Community): No TEC associated with this PCT

Figure 6 - Mapping of vegetation communities at the subject area at the location of the proposed facility indicating the most likely plant community type (PCT) occurring at the location is PCT 3382 described as 'Kosciuszko Eastern Slopes Mountain Gum Forest' (DPE 2023).

2.2 Likely vegetation community occurring in locality:

The small area proposed for the telecommunications facility (about 10 x 6m) occurs in a cleared area of woodland (Figures 3, 4 & 5). Some small tussocks of *Poa labillardierei* and *Juncus phaenthus* occur in the patch of mostly exotic grassland, with small individuals of Snow Gum (*Eucalyptus pauciflora*) forming a low woodland to the north-east, north, north-west and west of the cleared grassland (Figures 2, 3, 4 & 5).

In cleared areas and areas of woodland beyond the construction footprint shown in Figure 3, other tussock species occur including Snowgrass (*Poa sieberiana*) and *Carex gaudichaudiana* in cleared areas, and *Viola hederacea, Monotoca scoparia, Lomandra longifolia, Craspedia* sp and Blackwood (*Acacia melanoxylon*) occur within wooded areas (Figure 7).

Figure 7 - Image of uncleared woodland occurring beyond the construction/APZ footprint to the north-east of the proposed subject site with Eastern Grey Kangaroo evident central in the image.

The most likely vegetation community occurring at the proposed site is PCT 3382, described as 'Kosciuszko Eastern Slopes Mountain Gum Forest' (DPE 2023), occurring in a highly modified floristic, structural and functional form (Figures 3, 4 & 5).

Appendix 1 lists species that occur at the proposed site, as well as at adjacent areas, that may require removal with an estimation of percentage cover occupied by the various species in the vegetation.

2.3 Status of vegetation occurring at the proposed facility site that would require removal:

PCT 3382 or 'Kosciuszko Eastern Slopes Mountain Gum Forest' is not listed as a threatened ecological community on either registers of the BC Act (2016) or the Commonwealth EPBC Act (1999).

About 40,000ha of this community occurs throughout the IBRA regions documented in Section 2.1 with only 5.33% of the community having been cleared.

The proposal is to clear to ground level a total of about 60m^2 of ground cover vegetation to establish the facility with ground covers expected to recover completely following the works.

Some small individuals of Snow Gum would be removed from a 10m band of woodland that occurs surrounding the site to the north-east, north, north-west and west (Figure 2) to form an APZ where the canopy species cover would be reduced to about 15% cover. Currently the cover of low woodland is estimated at about 40%, so the removal of some small individuals to reduce the canopy to 15% may require the removal of some 15 small individuals of Snow Gum to provide the necessary APZ.

3 Potential impacts of proposed clearing of vegetation occurring at the subject construction site:

3.1 Construction footprint, potential impacts and mitigation measures:

At the construction footprint, including for the APZ, at the subject site, trees should be cut to ground level to ensure no damage occurs to tyres of vehicles traversing the area. Material should be mulched onsite and mulch spread evenly within the bushland.

None of these individual species recorded within the construction footprint of the subject site are rare or threatened.

3.2 Occurrence of threatened species, potential impacts and mitigation measures:

Threatened Flora Species

No individuals of any threatened species were observed during targeted searches of the entire construction footprint areas at the subject site.

One threatened flora species has been documented for the locality of the subject development area. This species is the Blue-tongued Greenhood (*Pterostylis oreophila*).

This species was recorded in 2022 about 9km to the north-west of the subject area (Figure 8).

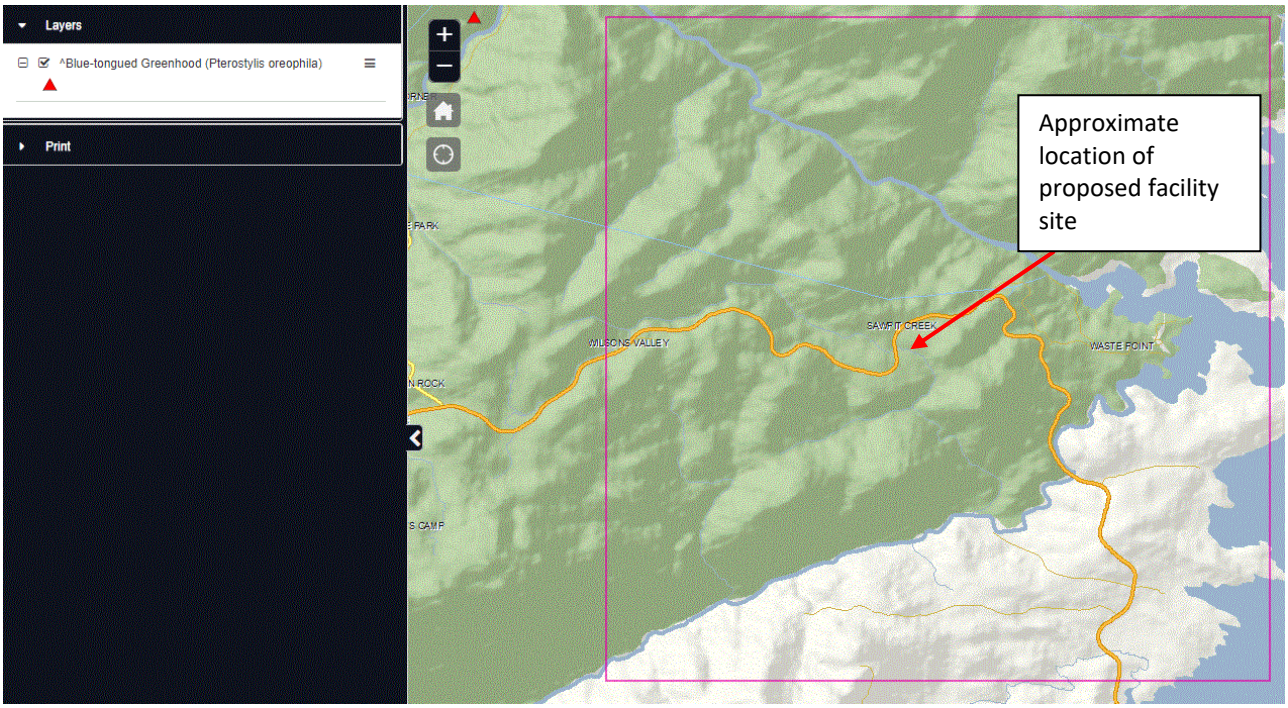

Figure 8 - Recorded location of Blue-tongued Greenhood (red triangle) about 9km to the north-west of the subject location at Sawpit Creek (DPE 2024)

The orchid has the following phenotypic characteristics, distribution and habitat requirements (DPE 2024):

Blue-tongued Greenhood (*Pterostylis oreophila*).

Description

The Blue-tongued Greenhood is a terrestrial orchid, with up to five leaves in a basal rosette before flowering. The leaves are later arranged loosely along the 20 cm tall flowering stems.

The leaves are oval in shape, to 70 mm long and 20 mm wide. The flower is solitary, erect, predominantly white with narrow green stripes, somewhat bulky (the hood-like structure being about 2.5 cm long). Flowers have a curved lip of a distinctive bluish or blue-green (aqua) colour. It flowers from November to January.

Distribution

In New South Wales, the Blue-tongued Greenhood is known from a few small populations within Kosciuszko National Park and a population of about 40 plants (possibly now extinct) in Bago State Forest and adjoining Crown Leases south of Tumut. The known distribution includes parts of the Snowy River, Tumbarumba and possibly Tumut Local Government Areas.

Habitat and ecology

- Grows along sub-alpine watercourses under more open thickets of Mountain Tea-tree in muddy ground very close to water.
- Less commonly grows in peaty soils and sphagnum mounds.
- While more frequently found in low-light conditions it appears to also be able to tolerate full sun.

The habitat of the subject site is a cleared exotic grassland surrounded by low Snow Gum woodland, distinct from the preferred habitat of subalpine watercourses and Mountain Tea-tree and the species is not expected to occur at the proposed construction site. No individuals of this, or any orchid, or any other threatened flora species were observed at the subject site.

It is considered that no threatened flora species would be impacted by the proposed works.

Threatened fauna species

Any fallen hollow logs occurring within the APZ clearing zones should be moved into areas of surrounding bushland to maintain a function of potential fauna habitat at this site.

No hollow logs were observed at the immediate construction area of the proposed facility.

A rock feature with overhang occurs within a small patch of woodland to the north-east of the facility location and this feature should be preserved as fauna habitat at this location (Figure 5).

Common avian and mammalian species observed onsite include Eastern Grey Kangaroo (Figure 7), Pretty-face Wallaby, Wallaroo (obs, Nat Park personnel), Rabbit, Wood Duck, Australian Raven, Black Duck, Kookaburra, Willy Wagtail and Red Wattle Bird.

A total of 9 threatened fauna species have been recorded within a 5km radius of the construction zone.

Table 1 indicates the fauna that have been recorded within a 5km radius of the subject site within the last 20 years.

Family	Common name	Scientific name	NSW status	Comm. status	No. of records
Aves **Accipitridae**	Little Eagle	*Hieraaetus morphnoides*	V,P		2
Cacatuidae	Gang-gang Cockatoo	*Callocephalon fimbriatum*	V,P,3	E	4
Meliphagidae	White-fronted Chat	*Epthianura albifrons*	V,P		2
Artamidae	Dusky Woodswallow	*Artamus cyanopterus cyanopterus*	V,P		5
Petroicidae	Scarlet Robin	*Petroica boodang*	V,P		3
	Flame Robin	*Petroica phoenicea*	V,P		6
Mammalia **Burramyidae**	Eastern Pygmy-possum	*Cercartetus nanus*	V,P		1
Vespertilionidae	Eastern False Pipistrelle	*Falsistrellus tasmaniensis*	V,P		3
Miniopteridae	Large Bent-winged Bat	*Miniopterus orianae oceanensis*	V,P		2

Table 1 - List of 9 threatened fauna that have been recorded within the locality (5km radius) of the subject site at Sawpit Creek within the last 20 years (DPE 2024)

None of these species have been recorded within one km of the subject site. No individuals of Eastern Pygmy -possum were observed and no microbats were located in any small hollows or fissures in any individuals of Snow Gum that occurred within the nominal APZ area surrounding the proposed facility.

These are all highly mobile species and none would be impacted by the location of the proposed telecommunications facility.

No threatened fauna were observed at the subject site and it is considered that none would be impacted by the proposed works.

3.3 Addressing other environmental constraints in relation to the proposed works:

Only those vehicles, machinery and small plant in good working order and with recent service history to be allowed on site. All fuel, lubricant and hydraulic lines and connectors to be inspected prior to entering site and ensured to be in good working order.

The tyres of construction vehicles should be brushed down, or run through a dip of disinfectant to sterilise any weed seeds, as they enter the site from potential weed infested areas to minimise on-site transport of weed species. Advice should be sought from contractors on best-practice techniques for weed removal on site to ensure spreading of weeds is minimised during excavation and transporting off site.

Pathogen and weed spread should be controlled via the adoption of hygiene and disinfection controls (Staines 2014) in accordance with the:

- NSW Frog Hygiene Protocol (DECC 2008)
- Keeping it Clean – A Tasmanian field hygiene manual to prevent the spread of freshwater pests and pathogens (Allan and Gartenstein 2010). – Specifically the pages 20-25 "Hygiene protocols for vehicles and heavy machinery"
- Myrtle Rust: Everyday Management (Department of Primary Industries 2017) (http://www.dpi.nsw.gov.au/biosecurity/plant/myrtle-rust).

Vehicle and machinery movement will be confined to designated work areas

The tyres of work vehicles and machinery will be checked before leaving the work sites. Tyres will be cleaned as necessary to ensure that soil or other erodible materials are not transferred outside the work site.

All equipment and materials will be removed from the site upon completion of the works

In the unlikely event of leakage or spillage, the spill/leak should be immediately contained and an Incident Management Plan should be implemented.

Access to the construction site should be restricted with suitable protective fencing and clearly marked signage displayed at the entrance points to the work site informing users of the works.

4 Conclusions of ecological surveys and assessment:

It is considered that no naturally occurring threatened ecological communities or any threatened native flora or fauna species will be impacted by the proposed works at the subject site.

The plant community that most likely occurs at the subject site is a highly structurally and floristically modified form of PCT 3382, described as 'Kosciuszko Eastern Slopes Mountain Gum Forest' (DPE 2024).

The works are not expected to impact on any listed threatened entities in relation to the BC Act (2016) or EPBC Act (1999) at the proposed site and will be strictly undertaken with the recommended mitigation measures.

5 Addressing the issue of protected matters under the EPBC Act (1999) including Place ID 105891 'Australian Alps National Parks and Reserves' and Place ID 105919 'Snowy Mountains Scheme' (Protected Matters database):

5.1 Addressing protected matters under the EPBC Act (1999) including Place ID 105891 'Australian Alps National Parks and Reserves':

The subject site occurs within the Protected Matters listing of Place ID 105891 which is the inclusion of heritage listed Australian Alps and Reserves placed under the Commonwealth EPBC Authority. Figure 9 indicates the distribution of these National Parks and Reserves included in Place ID 105891.

The Australian Alps listing includes the following National Parks and reserves: Alpine, Baw Baw, Brindabella, Kosciuszko, Mount Buffalo, Namadgi and Snowy River national parks; the Avon Wilderness Park, and the Bimberi, Scabby Range and Tidbinbilla nature reserves (Figure 9).

Comment:

The impact on the very small area of mostly cleared exotic grassland surrounded on its north and west sides by a low woodland of stunted individuals of Snow Gum (Figure 5) is not considered to have a significant impact on the integrity of the Kosciuszko National Park, relative to associated adjacent areas which have been cleared in the recent past for National Parks stockpile, roads, parking and shed structures (Figure 10).

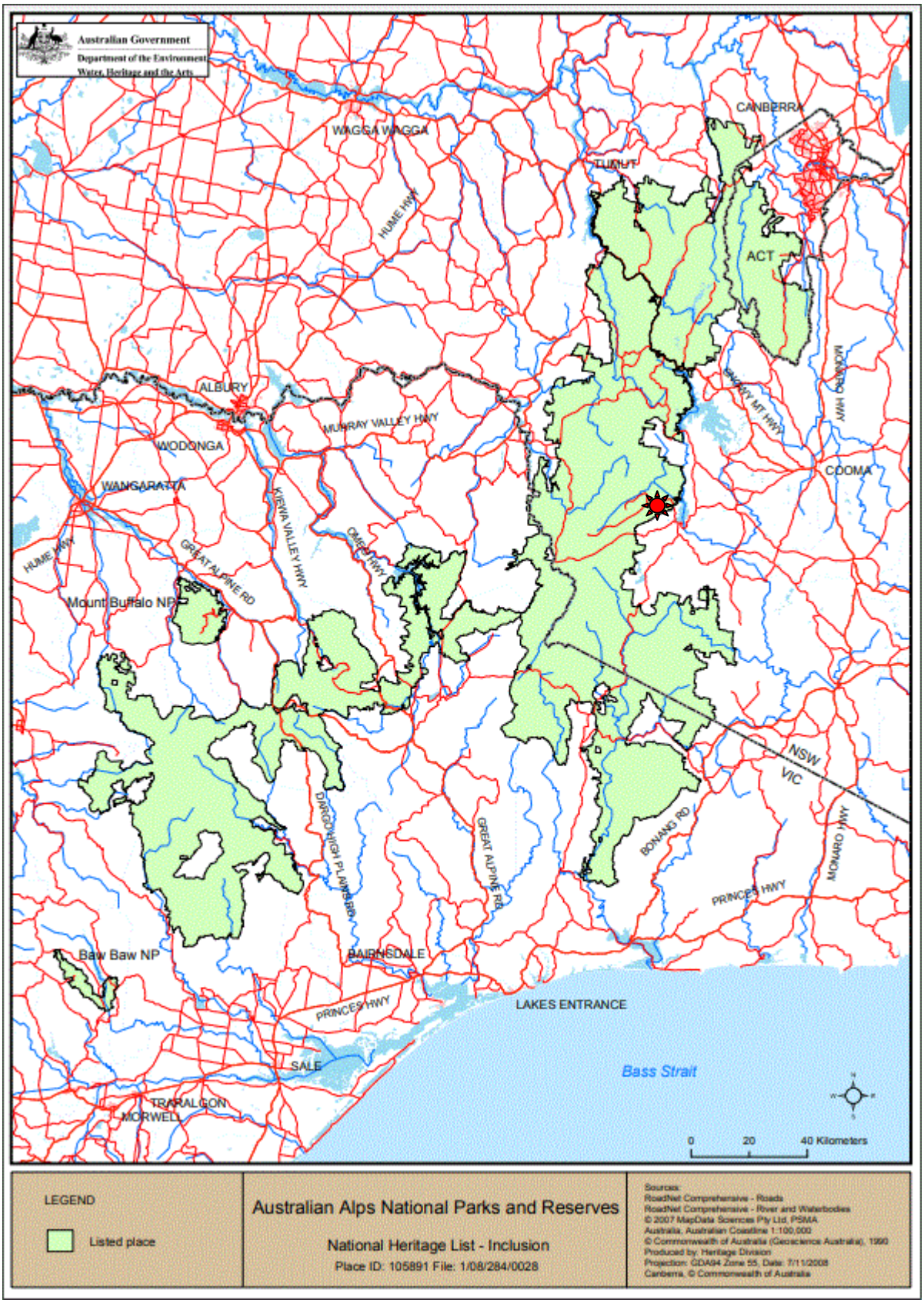

Figure 9 - Listed Australian Alps National Parks and Reserves included in National Heritage List Place ID 105891 with location of subject site indicated by the red star icon (MapData Sciences 2007)

Figure 10 - Entrance to small patch of cleared exotic grassland where installation of the proposed Telstra facility is located; the adjacent areas have previously been cleared to stockpile equipment and materials, construct storage sheds and to implement turning bays, tracks and parking areas by National Parks of NSW (Image courtesy of National Parks NSW 2023). These areas are all included in Place ID 105891 as is the proposed facility located on a small area of 10 x 6m (Figures 2, 3, 4 & 5). No significant impact to this Protected Matter listing is considered to occur as a result of the proposal.

5.2 Addressing protected matters under the EPBC Act (1999) including Place ID 105919 'Snowy Mountains Scheme':

The subject site does not appear to occur within the Protected Matters listing of Place ID 105919 which is the inclusion of heritage listed Snowy Mountains Scheme placed under the Commonwealth EPBC Authority. Figure 11 indicates the distribution of the heritage listed Snowy Mountains Scheme included in Place ID 105919.

Comment:

The impact on the very small area of mostly cleared exotic grassland surrounded on its north and west sides by a low woodland of stunted individuals of Snow Gum (Figure 5) is not considered to have a significant impact on the integrity of the Kosciuszko National Park, nor on the National Heritage List (Place ID 105919) of the Snowy Mountains Scheme, within which the proposed location of the new facility does not appear to occur (Figure 11).

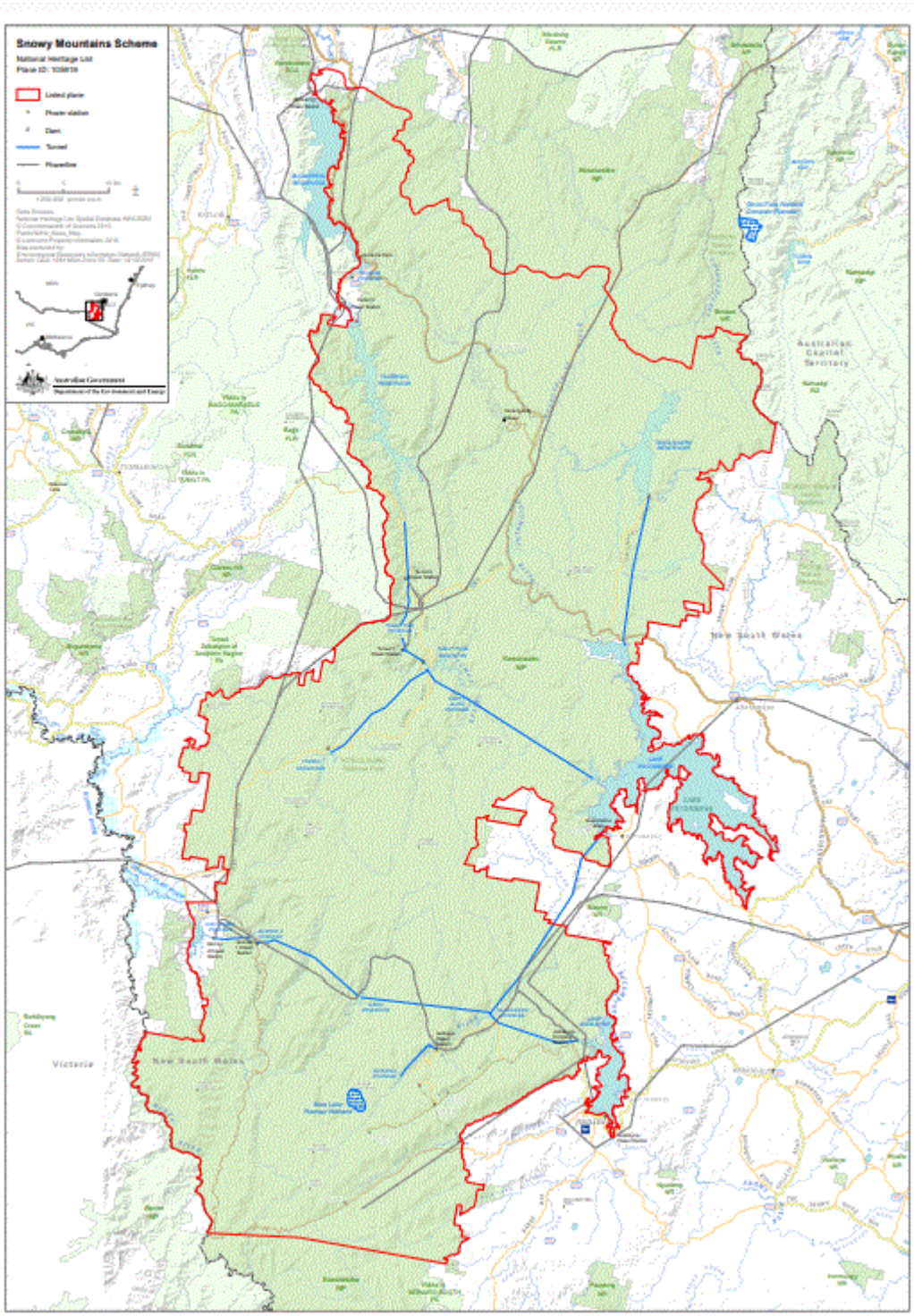

Figure 11 - Map of the National Heritage Listing of Place ID 105919 indicating the extent of the boundaries of the Snowy Mountains Scheme which largely occurs well to the east of the section of Kosciuszko National Park in which the proposed Telstra facility is to be located (See Figures 1 & 10) (Source: Environmental Resource Information Network 2016).

6 References and literature reviewed

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APPENDIX 1 - Flora species recorded at and in the vicinity of the proposed site at Sawpit Creek

KEY

Status

Exotic species (species not native to Australia)

Vegetation
PCT 3382 - structurally and floristically modified 'Kosciuszko Eastern Slopes Mountain Gum Forest'

Relative cover value (%) of all species

STATUS	SCIENTIFIC NAME	COMMON NAME	SPECIES OCCURRING WITHIN CONSTRUCTION FOOTPRINTS	SPECIES OCCURRING OUTSIDE CONSTRUCTION FOOTPRINT (OCCURING TO NORTH AND NORTH-EAST OF SUBJECT SITE)
	MAGNOLIOPSIDA: MAGNOLIDAE			
	Asteraceae			
	Craspedia sp.			1
	Ericaceae			
	Monotoca scoparia			1
	Mimosaceae			
	Acacia melanoxylon	Blackwood		1
	Myrtaceae			
	Eucalyptus pauciflora	Snow Gum	40	40 - 70
	Violaceae			
	Viola hederacea	Ivy-leaved Violet		1

STATUS	SCIENTIFIC NAME	COMMON NAME	SPECIES OCCURRING WITHIN CONSTRUCTION FOOTPRINTS	SPECIES OCCURRING OUTSIDE CONSTRUCTION FOOTPRINT (OCCURING TO NORTH AND NORTH-EAST OF SUBJECT SITE)
	MAGNOLOPSIDA: LILIDAE			
	Asparagaceae			
	Lomandra longifolia	Spiky-headed Mat-rush		1
	Cyperaceae			
	Carex gaudichaudiana	Tall Sedge		1
	Juncaceae			
	Juncus phaenthus		5	5
	Poaceae			
*	*Anthoxanthum odoratum*	Sweet Vernal Grass	5	5
*	*Cynodon dactylon*	Couch	80	80
	Poa labillardierei	Tussock Grass	10	10
	Poa sieberiana var. *sieberiana*	Tussock Grass		5