

BIODIVERSITY ASSESSMENT REPORT

**Borg Panels Timber Panel Processing Facility Expansion-
Lowes Mount Road
Oberon**



PREPARED BY:



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PEAK LAND MANAGEMENT

Land management consulting services:

-Bushfire-

-Ecological-

-Agricultural-

PO Box 3083

MEREWETHER NSW 2291

Ph: 02 49 63 3323

Mobile: 0410 633 837

Email: peak@hunterlink.net.au

Web site: peaklandmanagement.com

Cover Photo: View of subject site.

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AUTHOR DETAILS

PEAK LAND MANAGEMENT is an independent company specialising in providing quality consulting services in natural resource/land management including bushfire threat assessment. The company is a consultant member of the NSW Ecological Association and abides by their professional code of conduct and ethics, and licenced with Office of Environment and Heritage for survey and collection of threatened flora (SL 100640).

Mr Ted Smith is the Director of **PEAK LAND MANAGEMENT PTY LTD**. Ted has a Bachelor of Science Degree with Honours majoring in Physical Geography from the University of New South Wales, and a Graduate Diploma in Design for Bushfire Prone Areas from the University of Western Sydney. He is a qualified experienced Ecologist; Certified Bushfire Practitioner (FPA Aust-17671), accredited BioBanking Assessor with Office of Environment and Heritage (Accreditation No. 0043) under Part 7A of the TSC Act, and has a Certificate IV in Assessment and Workplace Training.

Ted Smith was the author of this work, and conducted all fieldwork. This report is consistent with the NSW Biodiversity Offsets Policy for Major Projects methodology being the Framework for Biodiversity Assessment (FBA).

1.0 INTRODUCTION AND BACKGROUND

PEAK LAND MANAGEMENT has been engaged by Borg Construction (referred to hereafter as Borg) to prepare a Biodiversity Assessment Report (BAR) to accompany an EIS for a proposed expansion to the existing timber panel processing facility located at Lots 1 and 2 DP 1085563, Lot 26 DP 1200697, Lot 24 DP 1148073 and part Lot 1 DP 1076346 Lowes Mount Road, Oberon (referred to hereafter as “subject site” or “development site”). Photos are shown in Appendix 4.

1.0.1 Background

The current site has approval for a medium density fibre board plant under DA 27/95, however the overall site has been under various ownership for much of its life. As such, the plant itself, and indeed, the approvals process has not benefited from a co-ordinated, structured approach. Since purchasing the site, Borgs have made a number of modifications in order to improve productivity, modernise the plants, improve site amenity and increase production levels.

In order to reflect these changes, remove land that does not form part of the operations, add additional lots and allow the increase in production, a new application is to be prepared. This will streamline the conditions of consent, and ensure that the conditions only apply to the Project. This will ensure ongoing compliance with relevant conditions, create an easier and simpler monitoring regime and remove conditions that do not apply to this particular facility, but apply to other facilities approved under the original DA.

In terms of the expansion itself, the current plant does not meet the increasing demand for Borg products, and the Project will ensure that Borgs is able to continue their growth and remain internationally competitive. This, combined with a need to modernise plant equipment and processes, has resulted in the need of an addition of a particleboard manufacturing facility for the site to guide future development and ensure the sustainable growth of the industry.

1.0.2 Project objectives

The object of the Project is to

- Allow for the construction of a dedicated Particle Board Manufacturing Line to allow Borg to continue their growth and remain internationally competitive;
- Provide additional capacity within existing buildings to expand production capacity;
- Modernise the existing facility;
- Allow for expansion to Lot 1 and 2 DP 1085563 for the purposes of a chip processing facility;
- Allow for a boundary adjustment part of Lot 1 DP 1076346 for the purposes of an expansion to the plant including emergency detention basin, first flush basin, and hardstand for vehicles which will allow improved water management including emergency spill management,
- Allow for expansion over Lot 24 DP 1148073 to enable an overflow carpark and to maintain access around the site after construction of the automated warehouse.

- Rationalise the current Conditions of Consent that apply to a number of different lots, all under fragmented ownership and operation;
- Allow for an increase in production, with a commensurate increase in staff levels.

1.0.3 Biodiversity Assessment Report (BAR)

The proposal has been assessed by the NSW Government Department of Planning and Environment, and the Secretary's Environmental Assessment Requirements (SEARs) issued which stipulate this project will be assessed under the NSW Biodiversity Offsets Policy for Major Projects. The Framework for Biodiversity Assessment (FBA) must be used by the proponent to assess all biodiversity values on the development site.

This BAR will form the basis for an application for a BioBanking Statement, in conjunction with the BioBanking Calculator statement and attached shape files, which has been prepared to account for impacts over native vegetation, as quantified by 'Ecosystem Credits' under the FBA.

Sources of information referenced within this report include:

- NSW Planning Viewer (NSW Department of Planning and Environment 2015);
- Bionet Atlas of NSW Wildlife (NSW Office of Environment and Heritage 2015);
- Protected Matters Search (Commonwealth Dept. Of the Environment 2015);
- SIX maps vegetation channel 2015
- Native vegetation (Office of Environment and Heritage VIS 2015)
- Mitchell Landscapes of the Oberon Area
- SIX Maps (LPI 2015)
- BioBanking assessor tools (Office of Environment and Heritage 2015)
- NSW Office of Environment and Heritage Threatened Species Profile Database

Previous reports of relevance to the development site include:

- Vegetation surveys were viewed through the SIX maps Vegetation Channel including:
 - FE-CRA-STHN_REVISED05_e3858
 - FE_CRA_STHN_REVISED05_P_3859
 - FOREST TYPES NSW_E_4026
 - CWLACH06_VIS_3844
 - CWLACH08_3813
 - CWLACH_P1750_VIS_3815
- Vegetation survey data analysed and downloaded:
 - Combined extant vegetation for Central West Catchment, 2008 Update VIS ID 3813.

Plot based vegetation and habitat assessment survey data was collected in accordance with the FBA 2014. This data was collected in August 2015 & March 2016 by PEAK LAND MANAGEMENT over the development site and surrounds. A reconnaissance survey was undertaken over some vegetation types within the 1000Ha circle.

1.1 Development site

The site is located in a rural area, on the northern outskirts of Oberon (Fig. 5). It is accessed from Lowes Mount Road. The existing Borg Panel Facility site is around 55Ha (includes existing facility, roads, dams and all of development proposal area). Around 7.5Ha of this land is proposed to be used directly for the expansion development footprint. The proposed development expansion area is located primarily over disturbed land (Fig. 1 & 2). It does not include any expansion over the dams to the north of the existing buildings.

It is located within the Oberon LGA and is currently zoned IN1 Heavy Industrial under the Oberon LEP 2013. The surrounding land to the east of the development footprint, owned by Borg, but not affected by this proposal, is zoned RU1 Primary Production. The proposed development is consistent with the Oberon LEP 2013.

The development site, site boundaries and proposal are shown on the Proposed development map (Fig. 1) and Site Map (Fig. 4).

1.2 Landuse History

The existing subject site is severely disturbed, with most native vegetation under and around the existing facility being cleared, and exotics or planted species occurring around the northern, western and parts of the eastern sides of the site. Activities which have occurred include industrial building construction and associated hardstands/roadworks, channel excavation/drainage line modification works, construction of numerous stormwater detention and processed water dams, earthworks, site contamination, and some planted landscape vegetation primarily for aesthetics and a wind break (being both exotic and some limited native trees).

The proposed areas of expansion occur primarily over disturbed land with no native species present, being formerly levelled/modified (all numbers as shown in Fig 1 including all of proposed carpark- numbered 30, southern parts of the hardstand, emergency & first flush basins -no's 31, 32 & 33). The remainder of the hardstand, emergency & first flush basins are located over modified native Grassland.

This site was affected by an underground tank rupture over an adjoining industrial facility located over Lot 11 DP 1017456 (upstream, over the western side of Lowes Mount Road) in the 1960's (pers. Comm. Victor Bendevski, Borg). The tank leaked Organo Chloride Pesticides (OCP) into the local creek system. The pollutant ran through this site, and entered King Stockyard Creek downstream of the subject site (Fig. 3). Since that date the tank, channels, and the creek system have been remediated.

A new creek channel (see Fig. 1) was excavated from the subject site directly to the creek (from the large stormwater dam), which is located around 50m from the proposed first flush basin. Water leaving the subject site is tested regularly by water monitoring (both groundwater- using piezometers, and surface water). These results are available if required from Borg. Borg have approval to discharge stormwater from the stormwater dams directly into the new creek channel when it is raining.

A series of dams are present over the site to capture all stormwater runoff from the site and surrounds, including dam 1 marked onto Fig. 1. Stormwater from these dams, including Endeavour Road, runoff directly into King Stockyard Creek when full, by way of a culvert pipe/part man made overland swale along the boundary of Lots 26/2902/1. The original creek channel (as shown in Figure 3) no longer exists, having been filled in years past. Water can be polluted from the runoff residue coming from the site, or upstream, hence the need for both the proposed emergency detention basin and first flush detention basin.

The remaining dams shown in Fig's 1 & 2 are for processed water coming directly from the manufacturing plant, and are highly polluted. This water is treated (filtration/reverse osmosis), and sent back to the plant for re-use. It does not enter the environment.

The upper reaches of King Stockyard Creek to the north of the site have been cleared in the past, grazed, and is now dominated by willows, and a host of other weeds. Very few native species are present. A small shade/shelter belt of various native trees is planted to the north of King Stockyard Creek, some 300m from the development site, which are unaffected by this proposal.

Figure 1a: Proposed expansion footprint (from Borg 2016)

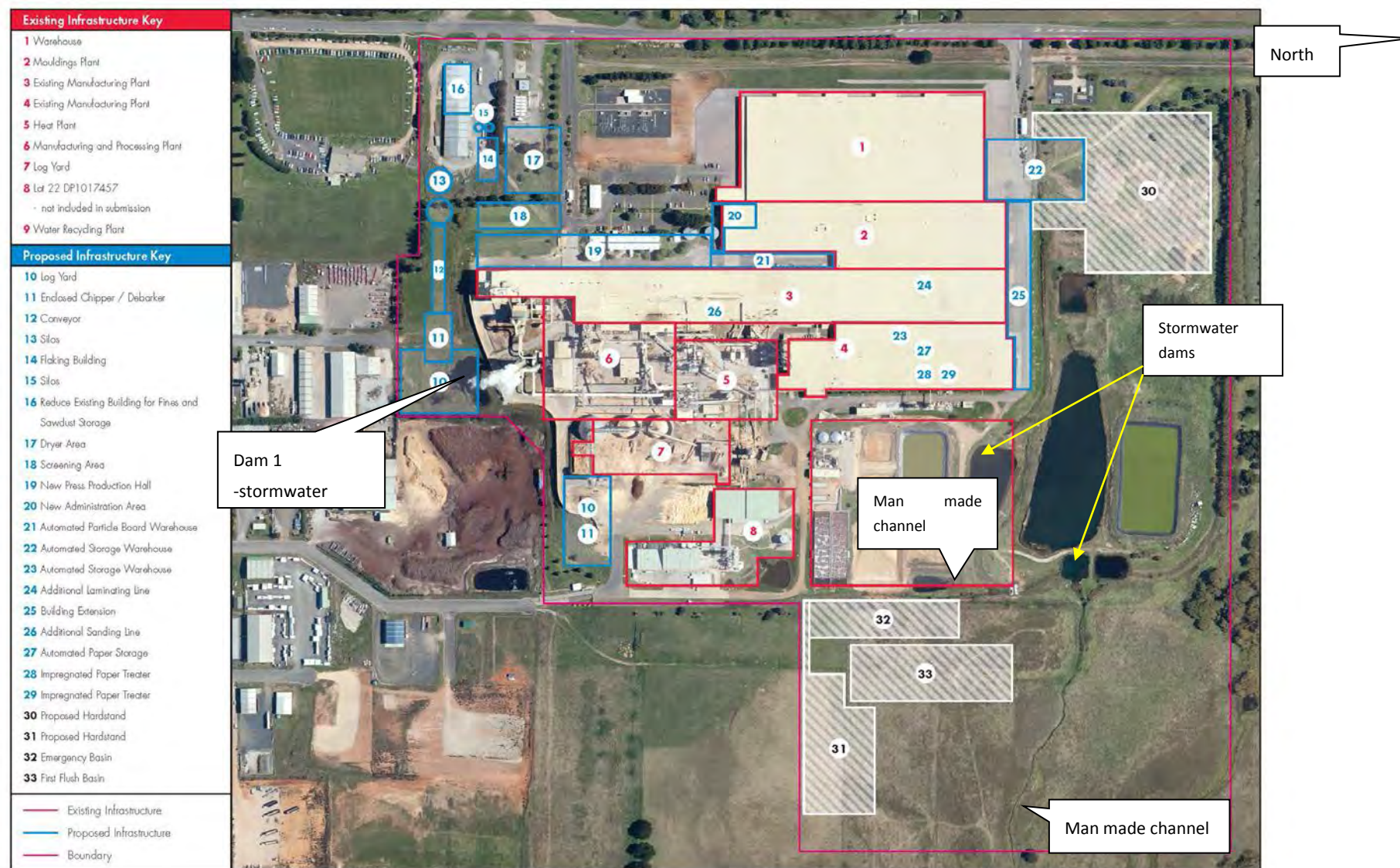


Figure 1b: Proposed expansion footprint site plan (from Borg 2016)

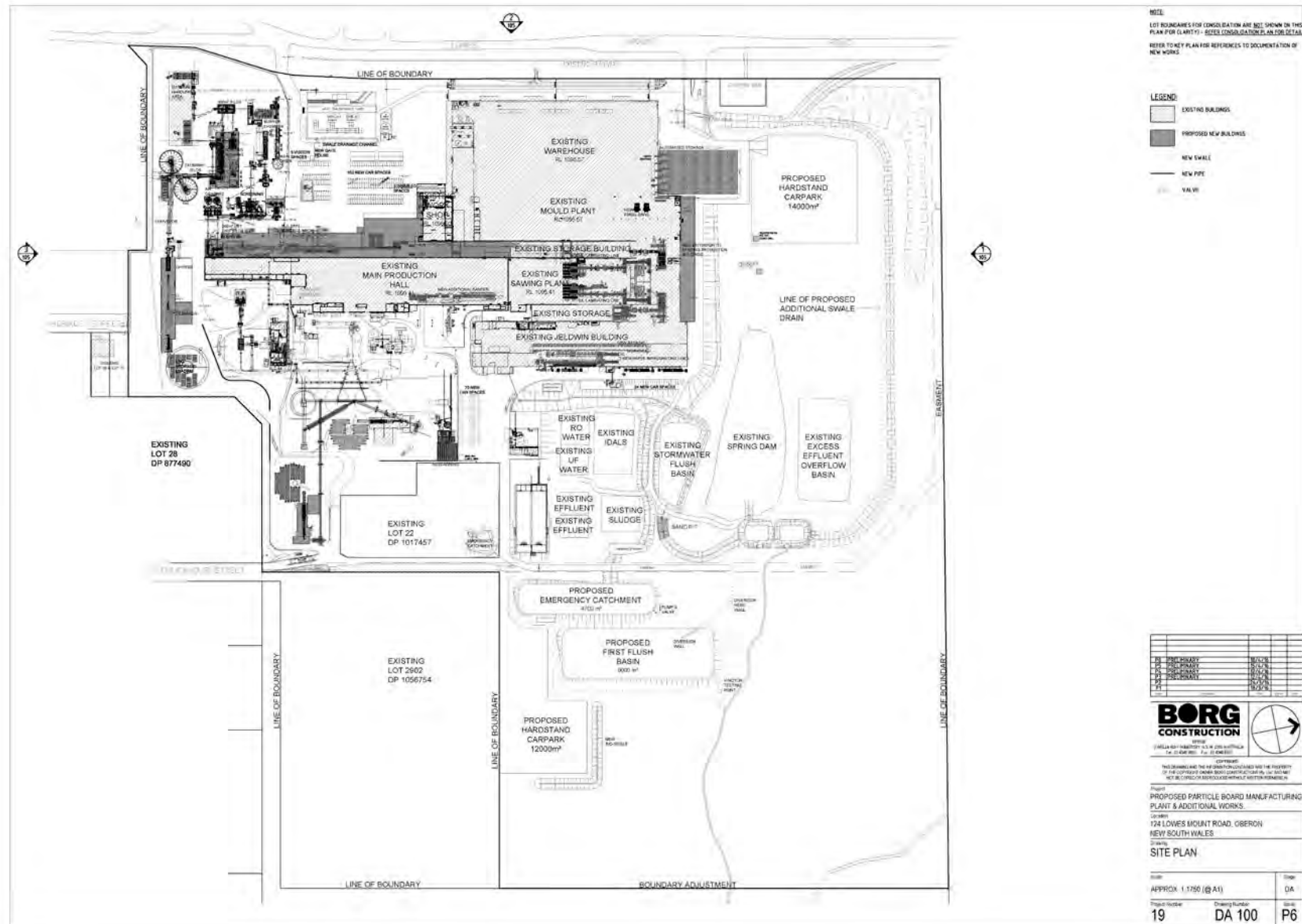


Figure 2: Aerial of site and surrounds (from Borg)



Figure 4: Site map

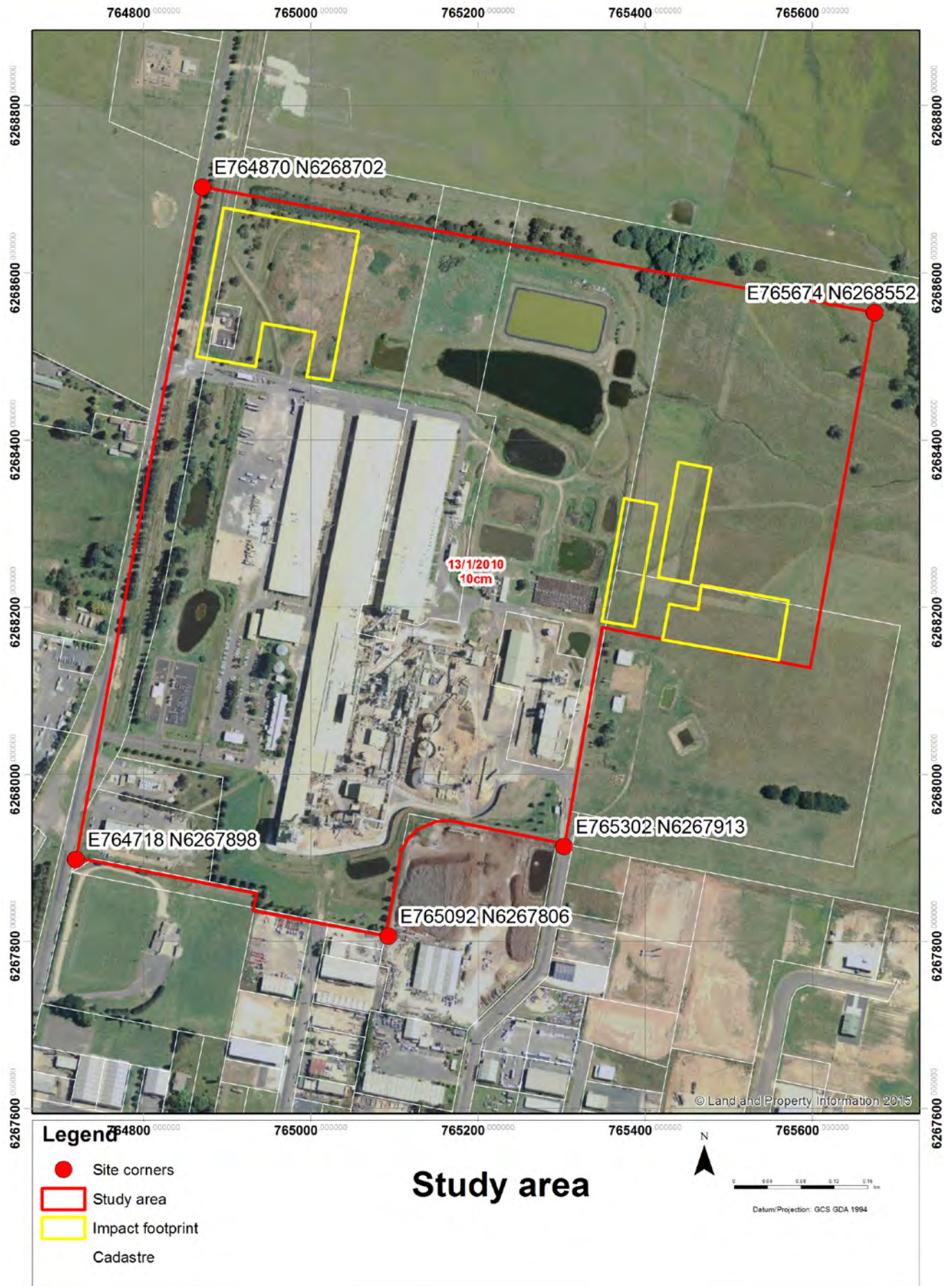


Figure 5: Locality Map

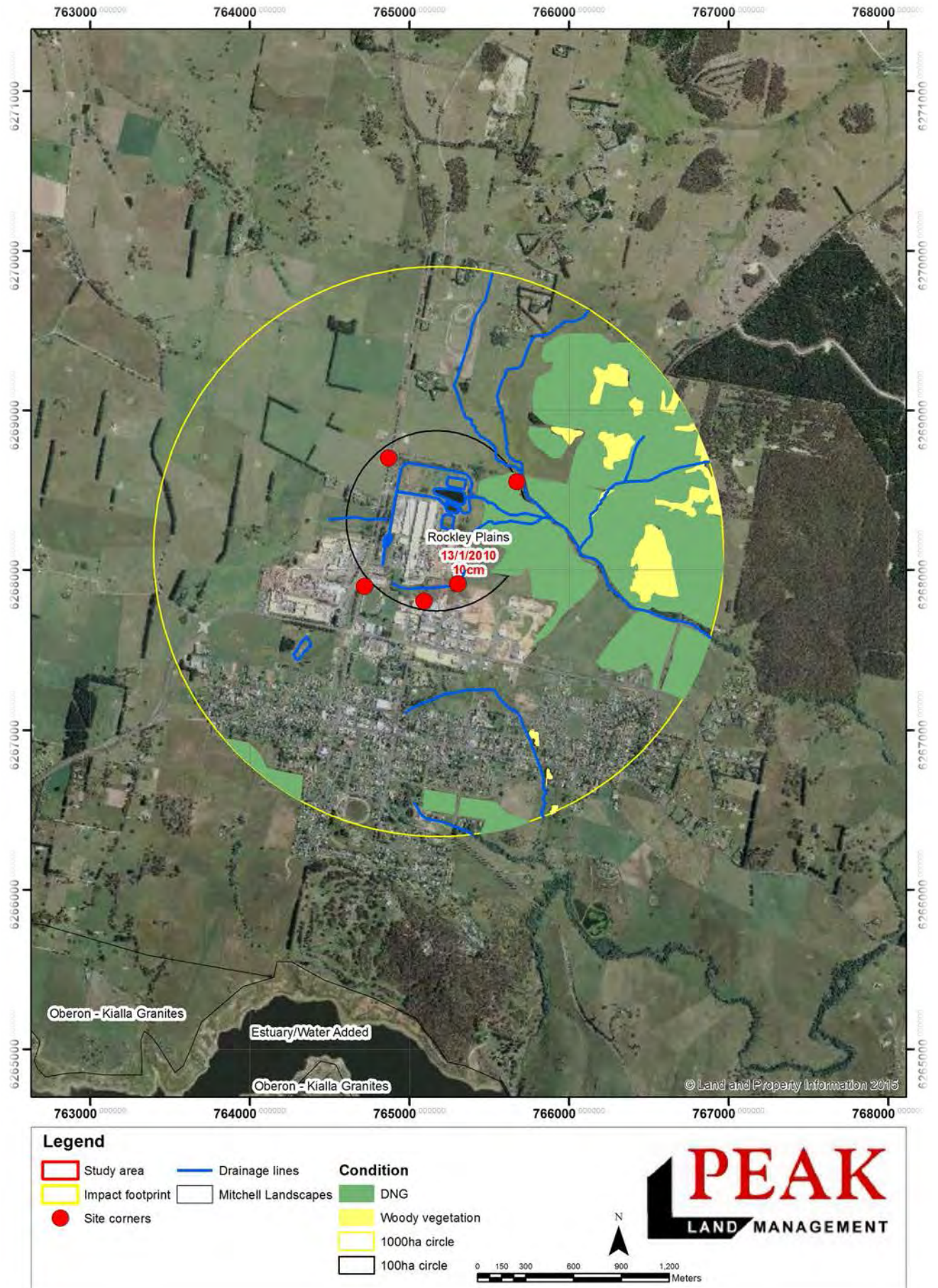
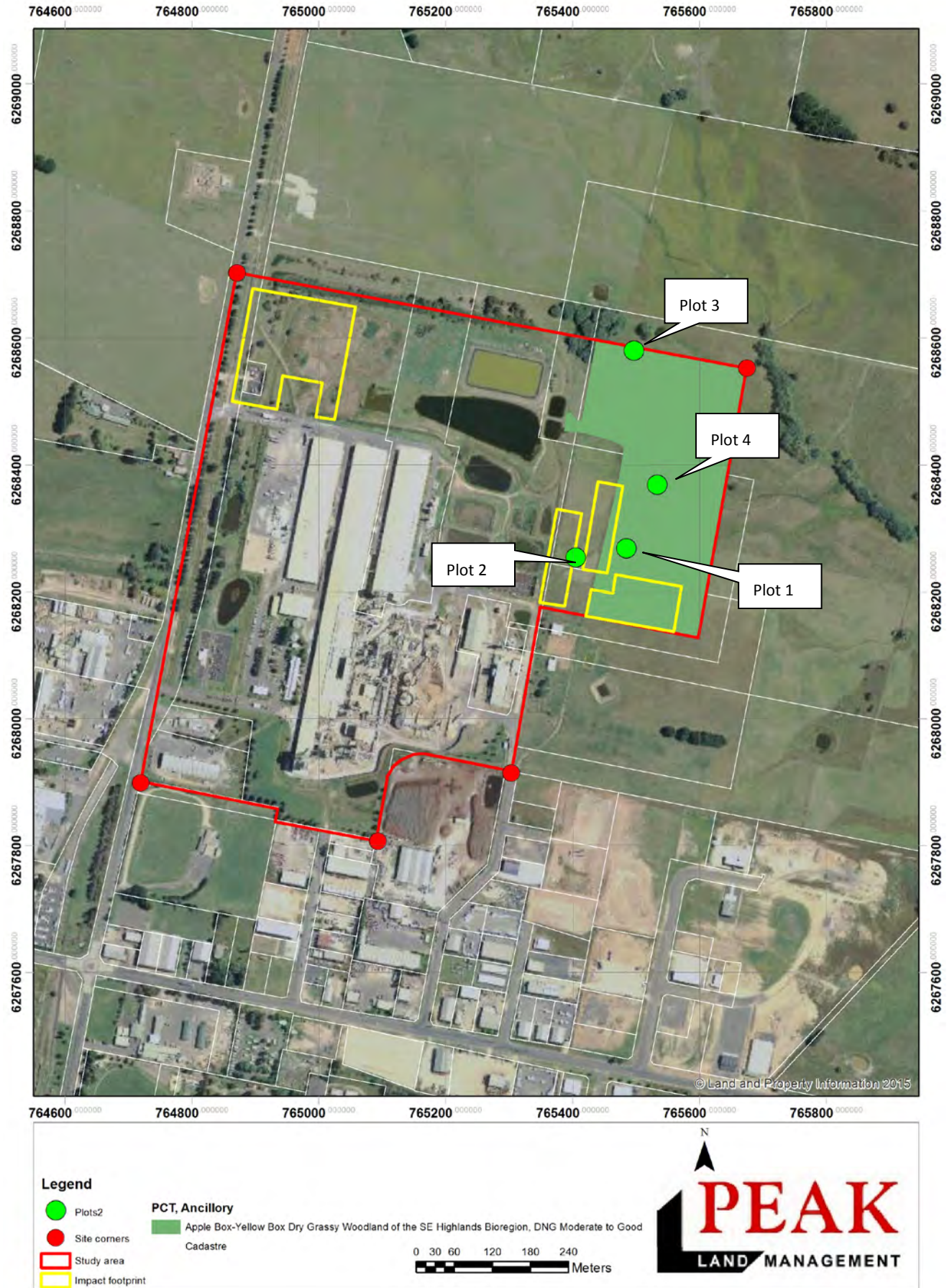


Figure 6: Plot locations. Note:- only Plot 1 data used in this assessment



2.0 LANDSCAPE FEATURES

In accordance with the FBA a number of features are assessed within and surrounding the development site in order to describe the landscape features and to calculate the final landscape score. Provided below are details related to IBRA region and subregion, NSW landscape regions (Mitchell Landscapes), rivers, streams, estuaries, wetlands, and surrounding native vegetation extent and the existence of state and regionally significant biodiversity values.

2.1 IBRA regions and IBRA subregions

The development site is located entirely within the Oberon IBRA subregion (Version 7), and within the South Eastern Highlands IBRA region (Version 7).

2.2 NSW Landscapes (Mitchell Landscapes)

The development site is located entirely within the NSW landscape region of the “Rockley Plains” Mitchell Landscape (V3).

The Rockley Plains landscape is described as :

Low rolling hills on plateau surface with Silurian and Ordovician slate, phyllites, felspathic sandstones and interbedded volcanics. General elevation over 1000m, relief to 150m. Red and yellow texture-contrast soils with often with prominent bleached A2 horizons. Mixed eucalyptus forest and woodlands including peppermints, stringybark, candlebark, white gums and snow gum. Cold air drainage hollows with grasslands and swamps. SEH Oberon Basalts.

It is classed as an over cleared Landscape, being 62% cleared (from VIS).

2.3 CMA Region and subregion

The development site is located entirely within the Oberon CMA Subregion, and within the Central West CMA Region.

2.4 Rivers, streams and estuaries

As described, streams in this area have been modified significantly, due to the existing Borg Facility location Fig’s 3 & 5). Stormwater runoff is now diverted around the facility, both around its northern and southern extents.

Water now flows overland through a grass swale to the southern dam (marked as Dam 1 in Figure 1) from an urbanised/industrialised catchment. Runoff from this dam then flows overland through a grass swale to the Borg road entrance from Endeavour Street. The stream shown over the development site (Lot 1 DP 1076346) no longer exists, with underground pipes being located from the end of Endeavour Street (which picks up stormwater from both Borg, and the public road system). This water flows through two pipes, one via easement being directed to Kings Stockyard creek from the road runoff, and the other to a small dam

located over the development site for the Borg runoff water. The Borg water from this small dam then overflows through a manmade open grassed stormwater channel into Kings Stockyard Creek, via another man made channel over the northern part of the development site which will not be affected by any proposed works.

Dam 1 is to be removed as part of this proposal, which is polluted with first wash runoff directly entering it from the Borg facility (see photos Appendix 4) and runoff from the industrialised catchment area on the western side of Lowes Mount Road. It has no native species growing over it.

The development site is therefore within 10m of a mapped 1st Order stream riparian zone, but as the stream no longer exists, and channels are man-made, and has little ecological value being degraded and containing formerly highly polluted water, it has not been assessment further.

The proposal will improve water quality by capturing and treating polluted stormwater runoff residue coming from the Borg site, upstream industrial areas, and Endeavour Road, hence the need for both the proposed emergency detention basin and first flush detention basin.

2.5 Native Vegetation extent

A layer of native vegetation cover is required for each assessment circle (100Ha and 1000Ha) to assess the impact of the development on native vegetation. The extent of native vegetation on the development site and immediate surrounds has been mapped (Fig 5), in combination with imagery obtained from LPI's Six Viewer, and informed by reconnaissance survey undertaken by the consultant over parts of this land. It is also informed by vegetation mapping from *Combined extant vegetation for Central West Catchment, 2008 Update VIS ID 3813*.

The footprint of the development is shown on the Project Proposal Map (Fig. 1) and Site Map (Figure 5). It is approximately 7.46Ha in total. All calculations were determined using GIS (Arcmap V9.2). For the purposes of the BioBanking Statement, a total loss of 1.1Ha of native vegetation was estimated to be directly impacted (ie removed) by the proposed development. Plant community types (PCT) are discussed further below.

2.6 Local and important wetlands

No local or regional wetlands are considered to be present over the site. It is noted that stormwater dams present are not considered natural wetlands, and are polluted. Other dams over the site are processed water holding dams, extremely polluted, and water is re-used on site with no offsite disposal from these processed water dams. All dams are located upstream of the proposal. One polluted stormwater dam (marked as Dam No 1 in Figure 1) is to be removed for the proposal, as the proposed first flush detention basin will now capture and treat this water.

2.7 State, regional and local biodiversity links

No state, regional, or local biodiversity links are present.

2.8 Landscape value score components

The landscape value was assessed as per the FBA 2014 and the Tool using plot data entered. The inner circle was 100Ha, and outer circle 1000Ha. The circles were centred on the middle of the Borg Facility.

Method applied

The landscape value was assessed in accordance with the FBA 2014, by the BioBanking Calculator (The “Tool”), measuring:

- a) Percent native vegetation cover in the landscape;
- b) Connectivity value;
- c) Patch size;
- d) Area to perimeter ratio.

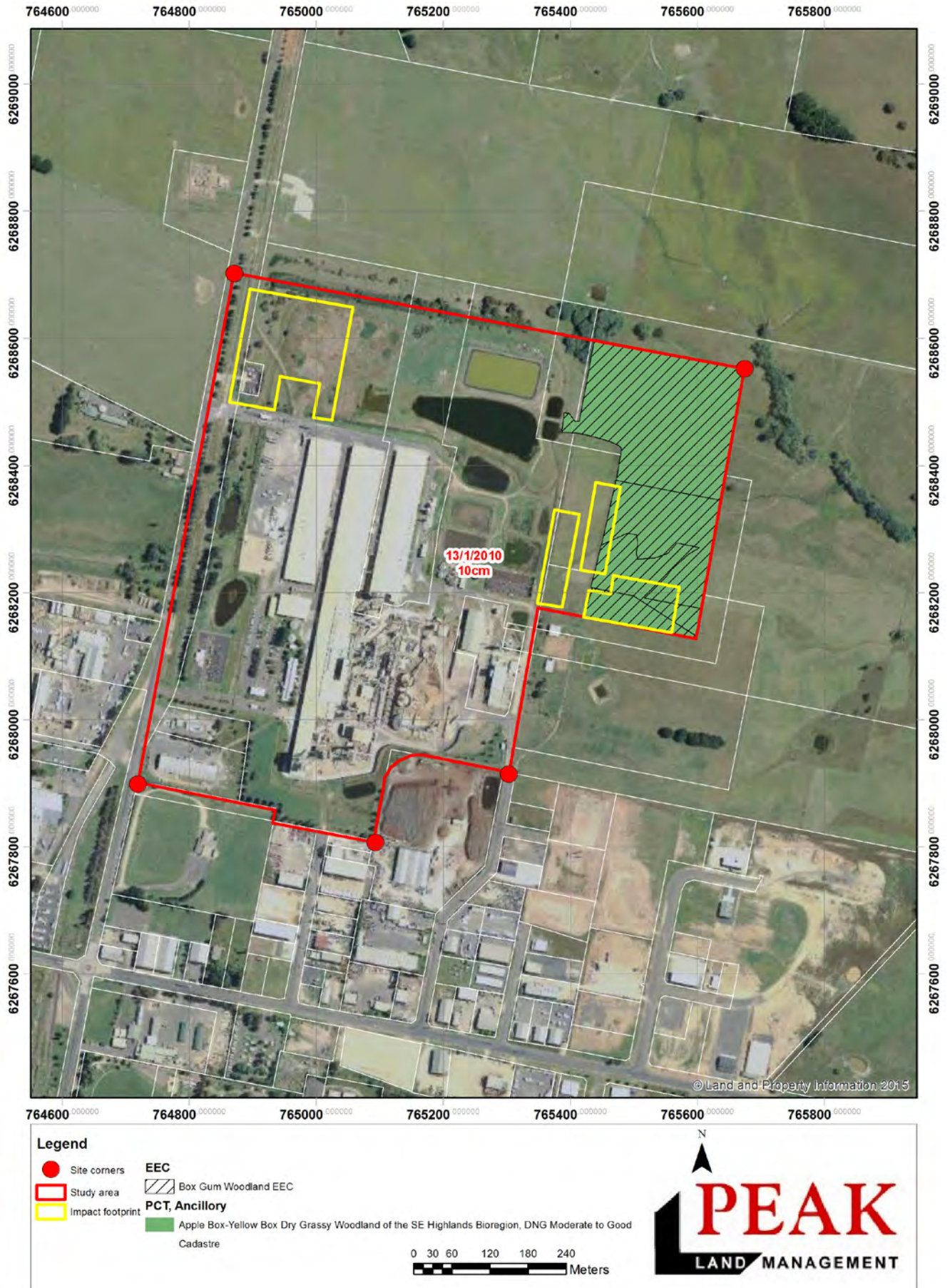
Percent native vegetation cover in the landscape

Table 14 of the BBAM was used to determine current and future scores. The native vegetation within the inner and outer circles (Figure 4), and the impact of the proposed development being loss of 1.1Ha of native vegetation in moderate-good condition was taken into account with the current and future percent native vegetation cover shown in Table 1.

Table 1: Percent (%) native vegetation cover estimates in the inner and outer assessment circles

Assessment Circle	Current (Ha)	Current (%)	Current score	Future (Ha)	Future (%)	Future score
Inner (100Ha)	12.31	11-15	2.25	11.24	11-15	2.25
Outer (1000Ha)	218.26	21-25	6.25	217.19	21-25	6.25

Figure 7: Vegetation zones and types over the development footprint and study area



Connectivity value

The development site is not part of a State or Regionally Significant Biodiversity Link, as identified by the “connectivity value classes” in Table 15 of Appendix 4 in the BBAM 2014.

Native vegetation on the subject site is part of a connecting link, but this resides along the site periphery, and will remain intact following the site development. The linkage width has been assessed as >100-500m before development, and the same after. In this case it comprises cleared vegetation, which has some native grassland groundcover, with very few scattered native trees.

The condition of the vegetation within the connection will also remain the same before and after the development, with an overstorey value assessed to be PFC < 25% of lower BM, and understorey PFC of mid-storey/ground cover at BM.

Patch size

Patch size as defined by BBAM is an area of native vegetation that:

- a) Occurs on the development site, and*
- b) Is in moderate to good condition, and*
- c) Includes native vegetation that has a gap of >100m from the next area of moderate to good condition native vegetation.*

Patch size may extend onto adjoining land that is not part of the development site.

In this case the patch size over the development site is limited to 1.1Ha, in moderate to good condition. It does however connect directly with vegetation in moderate to good condition. This vegetation (see Figure 4) patch size is 198 hectares in extent, due to presence of native grass understorey and woody vegetation further afield.

Area to perimeter ratio

As this development is not a linear shaped development, or a multiple fragmentation impact development, the area to perimeter ratio does not apply.

2.9 Landscape value score

Using the above data the final landscape score was calculated by the Tool to be 12.

3.0 NATIVE VEGETATION

3.1 Plant community types (PCT's) and threatened ecological communities

Desktop assessment determined that no meaningful vegetation communities (apart from cleared) has been mapped over the site by OEH. DEC 2006 mapped vegetation outside of the 1000Ha circle as PCT 730- Broad leaved Peppermint-Mountain Gum Dry Open Forest of the Central Highlands area of the South Eastern Highlands Bioregion. This vegetation was not present over the subject development site. This vegetation community was field referenced (mapped site inspected some 1.5kms north of the development site off Mt Lowes Rd), and found to be correct.

A web search was undertaken for Flora or fauna survey data on or around this site. A Flora survey for a granite quarry as conducted by Gingara Pty Ltd for a site located at Ferndale Road, Oberon, about 6kms east-south-east of Oberon township. This survey was located over a different soil landscape (Granite) and had a different vegetation type also being Broad leaved Peppermint-Mountain Gum Dry Open Forest of the Central Highlands area of the South Eastern Highlands Bioregion.

Field assessment determined native species over the development site, and surrounding area. The PCT tool was used to determine the PCT. As the site and surrounds are cleared, with very limited native overstorey remaining, no native mid storey, and limited native grassland species present, identification of the PCT was problematic. The presence of two remnant trees being Apple Box and Yellow Box, and native grass understory was noted. This tool highlighted a number of potential communities, with **Apple Box – Yellow Box Dry grassy Woodland of the SE Highlands Bioregion** being considered the most applicable PCT (BVTID CW102/LA103, PCTID 654).

This community is classified as an Endangered Ecological Community in NSW being equivalent to *White Box Yellow Box Blakely's Red Gum Woodland* (from <http://www.environment.nsw.gov.au/threatenedSpeciesApp/profile.aspx?id=10837>).

It is also a listed Commonwealth EPBC Critically Endangered Ecological Community being *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland*.

In this case however it is not considered to be a Commonwealth Critically Endangered Ecological Community over the development site as defined by the Scientific Committee as it contained:

- <12 native non grass species;
- No important species.

In summary the EPBC committee states (from <http://www.environment.gov.au/box-gum.pdf>):

The Committee considers that areas in which an overstorey exists without a substantially native understorey are degraded and are no longer a viable part of the ecological community. Although some native species may remain, in most of these areas the native understorey is effectively irretrievable. In order for an area to be included in the listed ecological community,

a patch must have a predominantly native understorey. The size and life-form of understorey species are such that viable populations can exist in very small areas (Prober & Thiele 1993). Therefore, in order to be the listed ecological community, an understorey patch, in the absence of overstorey trees, must have a high level of native floral species diversity, but only needs to be 0.1 hectares or greater in size. A patch in which the perennial vegetation of the ground layer is dominated by native species, and which contains at least 12 native, non-grass understorey species (such as forbs, shrubs, ferns, grasses and sedges) is considered to have a sufficiently high level of native diversity to be the listed ecological community. At least one of the understorey species should be an important species (e.g. grazing-sensitive, regionally significant or uncommon species; such as Kangaroo Grass or orchids) in order to indicate a reasonable condition.

3.1.1 Apple Box – Yellow Box Dry grassy Woodland of the SE Highlands Bioregion

This community varies in condition and extent over the study area, being in moderate-good condition where it occurs in a small area of 1.1Ha over the subject development site. It has around 70% native understorey cover present, being dominated by native grasses including Snow Grass (*Poa sieberiana subsp sieberiana*), and exotic pasture grasses and weeds. It is therefore considered a NSW Endangered Ecological Community.

It also occurs extensively away from the development site, being a mix of moderate to good condition vegetation, and weed /pasture affected/cleared being <50% cover and low condition. No red flag variation is required for this proposal, as it is a Major Project.

3.1.2 Other vegetation

The remaining vegetation over the study area and development site has been classified as “Cleared”. It consists of exotic pasture/lawn/gardens/industrial lands, poplar trees, 2-3 planted ornamental *Acacia dealbata* trees, pine trees, planted native vegetation including a windbreak/shelter belt some 300m from the development site to the north which comprises mixed Eucalypt species, and a windbreak/privacy shelter belt of Eucalypt species along part of the southern boundary near Lowes Mount Road which is to be retained.

The entire development site is extensively disturbed from former clearing, earthworks, pollution, polluted water runoff, slashing, grazing and weed invasion. All vegetation occurring over the grounds of Borg Panels/over the development site (with the exception of 1.1Ha of native vegetation described above) is planted/weeds being described as cleared.

3.2 Vegetation zones

3.2.1 Survey effort

Pre survey design including aerial photo analysis, consultation with Borg, Design Partnership, Office of Environment and Heritage, Bionet, and vegetation database research occurred prior to on site survey. A stratified survey design consisting of four plots, and meander transect over the entire development site and surrounds occurred to enable all vegetation types and habitat to be assessed. A site survey was undertaken on Friday 21st August, 2015. Weather was fine, being around 8-10°C in the morning, warming up to 22°C in the afternoon. A light

frost was present early but quickly dissipated. A second survey was undertaken on the 17th March, 2016. Weather was fine, around 18-20°C.

Note: - as first survey occurred in winter, with frost damaged grass, some native flora species and fauna species may not have been present at this time of the year, and frost damage to grasses/lack of seed impeded grass species identification in some cases. The second survey occurred when grass was seeding, and not frost damaged, allowing better grass identification.

The survey comprised a flora, and daytime fauna survey & fauna habitat survey, over 8 hours on the first survey, and 3 hours on the second survey by Ted Smith, (Ecologist/Botanist PEAK LAND MANAGEMENT). Flora survey results are shown in Appendix 1. Four plots were assessed (Figures 6 & 8). Plot 1 data was only used within in the BioBanking Calculator tool as required under the FBA (Table 3) being 1 transect/plot per 2Ha, or 1 transect/plot if vegetation is in low condition. In this case the impact over native vegetation within the development site was <2Ha, so 1 plot was considered adequate for the BioBanking Assessment.

Plot 1 was located over the development site where some impact was anticipated over native vegetation. Plot 2 was located over another part of the development site that had no discernible native vegetation present, which was found to be true, and the results were not used in the Tool. Plot 3 was located near a creek line over 300m north of the development footprint site. It was located there to gather background native vegetation data in order to help ascertain the PCT. Data was not used in the BB calculator tool, but was used to help in PCT identification. Plot 4 was located near the northern area of the proposed first flush basin, and contained similar species diversity & condition to Plot 1 (see Appendix 1).

All flora and habitat survey data was measured according to the BioBanking field data sheets (Feb 2009). Plot one comprised a 50m long transect, and 20 x 20m quadrat. All plants and habitat attributes were measured as per the FBA and BBAM methodology outlined within the field data sheets (Appendix 5). Floristic data is shown in Table 2 for all plots.

In addition to quadrats/transects a meander transect occurred over the entire development site, and wider area within and beyond the 100Ha circle, principally to identify extent of cleared/native vegetation, species of scattered native trees located over 300m from the development site, and any native understory. This data assisted in PCT identification, determining extent of native vegetation over development site, and habitat assessment.

Table 2: Floristic survey data collected at development site

Attribute	Survey Requirement
Stratum (and layer)	All species recorded occurred in the understory grassland stratum
Growth Form	Grass & Herb & Sedge
Species name	A full list of species recorded for each plot is shown in Appendix 3.
Cover	See Appendix 5. Overall cover was 100%, comprising both weeds and native species.
Abundance rating	See Appendix 5. Weeds dominated Plot 1.

3.2.2 Condition classes, subcategories and areas

Apple Box – Yellow Box Dry grassy Woodland of the SE Highlands Bioregion within the development site was assessed as belonging to one vegetation zone, being Moderate to Good Condition (Table 3).

All vegetation that was exotic, was classed as “cleared” vegetation zone.

A description of each vegetation zone and the total area of each are provided in Table 3. Figures 7 & 8 show the spatial arrangement of these zones, and their relationship to the development footprint.

Table 3: Vegetation types and zones, a description and area within development site

Plant Community Type (PCT)	Vegetation Zone	Description	Area (ha)
Apple Box – Yellow Box Dry grassy Woodland of the SE Highlands Bioregion (PCT 654)	Low Condition	<50% native understorey, no native trees or shrubs, heavily modified from clearing/grazing/pasture improvement/weeds	1.1
Other vegetation	Cleared	Includes all land that is planted with exotic vegetation (ie <i>Pinus radiata</i> and exotic grasses)	6.36
Total Area			7.46

3.2.3 Use of local data

Other local data was not used in this assessment as there was no identified local data apart from that collected by PEAK LAND MANAGEMENT during survey.

3.3 Assessing site value

The current site value score was calculated by the Tool to be 10.42 for the development site (Fig. 8). The future score is calculated to be 0, due to loss of 1.1Ha of native vegetation.

As the site score is less than 17, and the PCT present within the development site is not listed as an Endangered Ecological Community (as in low condition), then according to the FBA:

- *no further assessment of native vegetation is required, and*
- *an assessment of threatened species that can be predicted by habitat surrogates (ecosystem credits) in accordance with Section 6.3 of the FBA is not required, and*
- *an assessment of threatened species that cannot be predicted by habitat surrogates is undertaken in accordance with the FBA Sections 6.4 and 6.5.*

In this case no then no further assessment of vegetation is required.

Figure 8: BioBanking Credit calculator showing site value score

BioBanking Credit Calculator

Ecosystem credits



Proposal ID : 0043/2016/2548MP
 Proposal name : Borg Panels Timber Panel Processing Facility Expansion
 Assessor name : Ted Smith
 Assessor accreditation number : 0043
 Tool version : v4.0
 Report created : 13/04/2016 19:35

Assessment article name	Landsc- ape score	Vegetation zone name	Vegetation type name	Condition	Field flag status	Management zone name	Management zone area	Current site value	Future site value	Loss in site value	Credit required for bio- diversity	Credit required for TS	TS with habitat credit requirement	Average species loss	Species TS Value	Final credit required by management zone
11	13.00	CW102_Mo- derate/Good_ Derived grassland	Apple Box yellow Box dry grassy woodland of the South Eastern Highlands Bimregion	Moderate/Good_ Derived grassland	No	16523.1	1.07	18.45	0.00	10.42	0	0	0	0.00	0.00	0

BioBanking Credit Calculator

Species credits



Proposal ID :
Proposal name :
Assessor name :
Assessor accreditation number :
Tool version : v4.0
Report created : 13/04/2016 19:35

Scientific name	Common name	Species TG value	Identified population?	Can Id. popn. be offset?	Area / Negligible number of loss loss	Red flag status	Number of credits
No							

4.0 THREATENED SPECIES

4.1 Identifying threatened species for assessment

4.1.1 Ecosystem credit species

Ecosystem credit species are predicted based on habitat surrogates. No ecosystem credit species are predicted for this site. No further assessment is therefore required for ecosystem credit species.

4.1.2 Species Credit species

Geographic and habitat features

Threatened species that cannot reliably be predicted to occur on a development site based on PCT, distribution and habitat criteria are identified by the Threatened Species Profile Database (TSPD) as species credit species.

Species credit species predicted to occur over this development site following assessment of geographic and habitat features in the tool, such as site location (IBRA subregion), PCT and condition, patch size and the area of surrounding vegetation within the 1000Ha circle are shown in Table 5. Table 4 provides the answer to each question for the development site. Where the answer is yes, the species is retained in the assessment.

Table 4: Assessment of geographic/habitat features (from the Tool)

Do any of the following features occur on the area to be assessed? Tick the box wherever the feature occurs, or is likely to occur in the area to be assessed. Leave blank if the feature does not occur.

Impact?	Common name	Scientific name	Feature
<input type="checkbox"/>	Large-eared Pied Bat	<i>Chalinolobus dwyeri</i>	land containing escarpments, cliffs, caves, deep crevices, old mine shafts or tunnels
<input type="checkbox"/>	Brush-tailed Rock-wallaby	<i>Petrogale penicillata</i>	rocky outcrops/cliffs in Bathurst CMA subregion
<input checked="" type="checkbox"/>	Green and Golden Bell Frog	<i>Litoria aurea</i>	land within 100 m of emergent aquatic or riparian vegetation
<input type="checkbox"/>	Booroolong Frog	<i>Litoria booroolongensis</i>	land within 100 m of stream or creek banks
<input checked="" type="checkbox"/>	Southern Bell Frog	<i>Litoria raniformis</i>	land within 100 m of emergent aquatic or riparian vegetation
<input type="checkbox"/>	Pink-tailed Legless Lizard	<i>Aprasia parapulchella</i>	land containing surface rocks (embedded or loose)

The BioBanking Calculator has determined the following species require survey:

Table 5: Species requiring survey as generated by the Tool

Booroolong Frog (<i>Litoria booroolongensis</i>)
Brush-tailed Phascogale (<i>Phascogale tapoatafa</i>)
Green and Golden Bell Frog (<i>Litoria aurea</i>)
Koala (<i>Phascolarctos cinereus</i>)
Regent Honeyeater (<i>Anthochaera phrygia</i>)
Silky Swainson-pea (<i>Swainsona sericea</i>)
Squirrel Glider (<i>Petaurus norfolcensis</i>)

The FBA states that candidate species must be identified from these Species credit species generated in Table 5 by the tool by an analysis of their:

- the geographic distribution of the species is known or predicted to occur within the development site IBRA subregion, and
- the development site contains habitat features or components associated with the species, as identified in the TSPS, OR
- past surveys undertaken at the development site indicate that the species is present.

A candidate species is not considered to be present on the development site where :

- after carrying out an assessment of the habitat components the assessor determines that the habitat is substantially degraded such that the candidate species is unlikely to utilise the development site.

4.1.3 Candidate species assessment

Table 6 shows an assessment of those features required by the FBA listed above for each candidate species identified in the tool. A further analysis of habitat requirements for each of these species as listed as possibly having suitable habitat within Table 5 & 6 (using both the threatened species profile database for each species, and on site habitat assessment) is shown in Table 7. All species information data is obtained from the Office of Environment and Heritage TSPD, and Bionet records. All habitat analysis data comes from the site survey.

Table 6: Predicted threatened species for the development site (from BioBanking Tool)

Species Credit Species	Geographic distribution of the species is known or predicted to occur within the development site IBRA subregion (from TSPS)	The development site contains habitat features or components associated with the species, as identified in the TSPS
Green and Golden Bell Frog	✓	✓
Southern Bell Frog	✓	✓
Koala	✓	x No trees present, no suitable habitat
Brown Treecreeper (eastern subspecies)	✓	x No trees present, no suitable habitat
Diamond Firetail	✓	x No suitable habitat
Flame Robin	✓	x No suitable habitat
Gang-gang Cockatoo	✓	x No suitable habitat

Hooded Robin (south-eastern form)	√	x No suitable habitat
Little Eagle	√	√ Vagrant
Little Whip Snake	√	x No suitable habitat
Masked Owl	√	x No suitable habitat
Painted Honeyeater	√	x No suitable habitat
Powerful Owl	√	x No suitable habitat
Scarlet Robin	√	x No suitable habitat
Speckled Warbler	√	x No suitable habitat
Regent Honeyeater	√	x No suitable habitat
Square-tailed Kite		√ Vagrant
Varied Sittella		x No suitable habitat
Spotted-tailed Quoll		x No suitable habitat
Yellow-bellied Glider		x No suitable habitat
Squirrel Glider	√	x No suitable habitat
Brush-tailed Phascogale	√	x No suitable habitat
Eastern False Pipistrelle	√	√ Degraded habitat present
Yellow-bellied Sheath-tail-bat	√	√ Degraded habitat present
Silky Swainson-pea- <i>Swainsona sericea</i>	√	x Degraded unsuitable habitat, not recorded during flora survey

Table 7: Threatened flora/fauna assessment of potential impact/habitat assessment.

Species	Comments	Likely level of impact	Legal statuses
Green and golden bell frog (<i>Litoria aurea</i>)	<p>Office of Environment and Heritage TSPD state :- “Formerly distributed from the NSW north coast near Brunswick Heads, southwards along the NSW coast to Victoria where it extends into east Gippsland. Records from west to Bathurst, Tumut and the ACT region. Since 1990 there have been approximately 50 recorded locations in NSW, most of which are small, coastal, or near coastal populations. These locations occur over the species’ former range, however they are widely separated and isolated. Large populations in NSW are located around the metropolitan areas of Sydney, Shoalhaven and mid north coast (one an island population). There is only one known population on the NSW Southern Tablelands. Inhabits marshes, dams and stream-sides, particularly those containing bulrushes (<i>Typha</i> spp.) or spikerushes (<i>Eleocharis</i> spp.).</p> <ul style="list-style-type: none"> • Optimum habitat includes water-bodies that are unshaded, free of predatory fish such as Plague Minnow (<i>Gambusia holbrooki</i>), have a grassy area nearby and diurnal sheltering sites available. • Some sites, particularly in the Greater Sydney region occur in highly disturbed areas. 	Negligible	NSW-E, Commonwealth-V

- The species is active by day and usually breeds in summer when conditions are warm and wet.
- Males call while floating in water and females produce a raft of eggs that initially float before settling to the bottom, often amongst vegetation.
- Tadpoles feed on algae and other plant-matter; adults eat mainly insects, but also other frogs.
- Preyed upon by various wading birds and snakes.

Habitat	Details
Breeding Habitat	Any still, slow flowing natural waterbodies with some aquatic emergent vegetation, such as <i>Typha</i> spp., <i>Phragmites</i> spp., <i>Eleocharis</i> spp, etc. will use artificial waterbodies and non-native emergent veg.
Foraging Habitat	Amongst emergent aquatic or riparian vegetation and amongst vegetation, fallen timber adjacent to and within 500m of breeding habitat, including grassland, cropland and modified pastures.
Time of year species best detected	Detected after dusk when calling during the breeding season October-January

Threats:-

- Alteration of drainage patterns and stormwater runoff.
- A fungal pathogen known as Frog Chytrid Fungus.
- Predation by feral animals such as foxes.
- Herbicides and other weed-control measures.
- Road mortality, where populations are already small due to other threats.
- Predation by exotic fish such as Plague Minnow.
- Loss of suitable breeding habitat through alteration by infilling and destruction of wetlands.
- Current knowledge of the status of the population and threats to the population is poor.
- Species occurs on private land where land management practices may not be suitable for the species, eg. grazing and loss of breeding habitat.
- Overgrowth of native vegetation around breeding habitat is cooling pools making them unsuitable for frog breeding.
- Changes in salinity due to sea level rise. Frogs are unable to breed in waters with salt concentrations of greater than 6 parts per 1000”.

It is associated with Apple Box - Yellow Box dry grassy woodland of the South Eastern Highlands Bioregion. It is known from Oberon CMA sub region. There is one individual old record from 1977 on Bionet located over 3kms from this site to the southeast in a different sub catchment. The development site is within 500m of stormwater dams. These man made dams and creeks around this site have had a history of contamination from organochlorine pesticides, and ongoing poor quality water runoff from an industrialised catchment area. The creeks and dams are grazed by goats, reducing riparian vegetation. Some weed spraying occurs from

	<p>time to time. No tadpoles or calls were heard or seen during site inspection. These dams and creeks will remain unaffected by the proposal. The majority of the development site is mown, or grazed, or completely cleared.</p> <p>It is considered very unlikely that this species could be present due to these constraints.</p>		
Southern Bell Frog (<i>Litoria raniformis</i>)	<p>Office of Environment and Heritage TSPD state:- “One of the largest frog species in Australia, these animals may reach up to 104 mm in length, with females usually larger than males. In NSW the species was once distributed along the Murray and Murrumbidgee Rivers and their tributaries, the southern slopes of the Monaro district and the central southern tablelands as far north as Tarana, near Bathurst. Currently, the species is known to exist only in isolated populations in the Coleambally Irrigation Area, the Lowbidgee floodplain and around Lake Victoria. A few yet unconfirmed records have also been made in the Murray Irrigation Area in recent years. The species is also found in Victoria, Tasmania and South Australia, where it has also become endangered.</p> <ul style="list-style-type: none">• Usually found in or around permanent or ephemeral Black Box/Lignum/Nitre Goosefoot swamps, Lignum/Typha swamps and River Red Gum swamps or billabongs along floodplains and river valleys. They are also found in irrigated rice crops, particularly where there is no available natural habitat.• Breeding occurs during the warmer months and is triggered by flooding or a significant rise in water levels. The species has been known to breed anytime from early spring through to late summer/early autumn (Sept to April) following a rise in water levels.• During the breeding season animals are found floating amongst aquatic vegetation (especially cumbungi or Common Reeds) within or at the edge of slow-moving streams, marshes, lagoons, lakes, farm dams and rice crops.• Tadpoles require standing water for at least 4 months for development and metamorphosis to occur but can take up to 12 months to develop.• Outside the breeding season animals disperse away from the water and take shelter beneath ground debris such as fallen timber and bark, rocks, grass clumps and in deep soil cracks.• Prey includes a variety of invertebrates as well as other small frogs, including young of their own species.	Negligible	NSW-E, C/wea lth- V

Habitat	Details
Breeding Habitat	Still or slow flowing natural waterbodies with some aquatic emergent veg. such as <i>Typha</i> , <i>Phragmites</i> , and <i>Eleocharis</i> . Will use artificial waterbodies and non-native vegetation such as rice, <i>Sagittaria</i> spp.
Foraging Habitat	Emergent aquatic or riparian vegetation and vegetation adjacent to and within 500m of breeding habitat, including grassland, cropland and modified pastures.
Time of year	September to May. but detectability dependant on suitable

	<table><tr><td>species identifiable (if flora) or best detected (if fauna)</td><td>conditions (refer http://www.environment.nsw.gov.au/resources/threatenedspecies/09213amphibians.pdf).</td></tr></table>	species identifiable (if flora) or best detected (if fauna)	conditions (refer http://www.environment.nsw.gov.au/resources/threatenedspecies/09213amphibians.pdf).		
species identifiable (if flora) or best detected (if fauna)	conditions (refer http://www.environment.nsw.gov.au/resources/threatenedspecies/09213amphibians.pdf).				
	<p>Threats:-</p> <ul style="list-style-type: none">• Removal of ground cover, fallen timber, leaf litter, etc as a result of either fire, direct clearing, overgrazing, trampling, etc.• Lack of appropriate flooding regime i.e. flooding at the wrong time of the year, infrequent flooding eg. once every 5 or 10 years, waterbodies not lasting long enough for tadpoles to develop, etc.• Alteration to natural flooding regimes from irrigation and river regulation, which may either divert water away from previously flooded wetlands or cause some areas to become permanently flooded and no longer receive rising water levels to trigger breeding.• Predation on eggs and tadpoles from exotic fish species such as carp, goldfish and mosquito fish.• Possible introduction of amphibian diseases such as Chytrid fungus, which is a waterborne pathogen.• Introduction of chemicals (pesticides, defoliants, etc) either into waterbodies or directly onto animals.• Loss of aquatic and/or terrestrial habitat through draining of waterbodies or clearing for agricultural development.• Degradation of aquatic and/or terrestrial habitat from pollution or salinisation of waterbodies, removal of shelter sources, removal of aquatic vegetation eg. from farm dams, disturbance to waterside vegetation and decreased water quality from stock and pest animals eg pigs rooting up vegetation and muddying up the water.• Road kills, particularly during wet weather when animals are dispersing throughout the landscape and crossing high traffic areas such as The Kidman Way through the Coleambally Irrigation Area”. <p>It is associated with Apple Box - Yellow Box dry grassy woodland of the South Eastern Highlands Bioregion. It is known from Oberon CMA sub region. Development site is within 500m of creeks/dams. No trees, shrubs or fallen timber/leaf litter, and a thick mainly weedy grass understorey/or completely cleared, compacted and levelled/ mown grass which is not suitable habitat for this species occurs over the development site. There is no water or wet areas over the development site (apart from one very polluted first flush stormwater dam), with no native wetland species present, however there is Carex spp. There are no Bionet records. The man made dams and manmade/natural creeks around this site have had a history of a contaminated spill, and ongoing poor quality water runoff from an industrialised catchment area. Flooding regime is irregular over the storm water dams, and regulated so that they do not flood. The creeks and dams are grazed by goats, reducing riparian vegetation. Some weed spraying occurs from time to time. It is considered very unlikely that this species could be present due to these constraints.</p>				
Little Eagle,	Birds of prey such as Little Eagle, Square tailed Kite and Spotted Harrier have large	Negligi	NSW-		

Square Tailed Kite	foraging ranges and can migrate in search of food resources, and would be affected in only a very minor way by this proposal due to loss of some very minor foraging resources. No raptor nests were observed in any nearby trees, or recorded in either survey.	ble	E
Eastern False Pipistrelle	<p>It is associated with Apple Box - Yellow Box dry grassy woodland of the South Eastern Highlands Bioregion. It is known from Oberon CMA sub region. Office of Environment and Heritage state</p> <ul style="list-style-type: none"> • Prefers moist habitats, with trees taller than 20 m. • Generally roosts in eucalypt hollows, but has also been found under loose bark on trees or in buildings. • Hunts beetles, moths, weevils and other flying insects above or just below the tree canopy. • Hibernates in winter. <p>The site has no trees, therefore no roosting habitat is present. No tree canopy is present, and habitat is dry, although creeks and dams are present so foraging/preferred habitat is partially present over the site. The loss of 1.1Ha of Grassland is not anticipated to make anymore than a negligible effect upon this species. There are no Bionet records within 10km of this site.</p>	Negligible	NSW-E
Yellow-bellied Sheathtail-bat	<p>It is associated with Apple Box - Yellow Box dry grassy woodland of the South Eastern Highlands Bioregion. It is known from Oberon CMA sub region. Office of Environment and Heritage state:</p> <ul style="list-style-type: none"> • Roosts singly or in groups of up to six, in tree hollows and buildings; in treeless areas they are known to utilise mammal burrows. • When foraging for insects, flies high and fast over the forest canopy, but lower in more open country. • Forages in most habitats across its very wide range, with and without trees; appears to defend an aerial territory. • Breeding has been recorded from December to mid-March, when a single young is born. • Seasonal movements are unknown; there is speculation about a migration to southern Australia in late summer and autumn. <p>Habitat is therefore present. The loss of 1.1Ha of Grassland is not anticipated to make anymore than a negligible effect upon this species. There are no Bionet records within 10km of this site.</p>	Negligible	NSW-E
Flora			
No threatened flora species were recorded	<p>Despite an intensive search for Silky Swainson-pea-<i>Swainsona sericea</i> no plants were recorded.</p> <p>Office of Environment and Heritage TSPD state: "The Silky Swainson-pea is a prostrate or erect perennial, growing to 10 cm tall. The stems and leaves are densely hairy. The leaves are up to 7 cm long, composed of 5 - 13 narrow, pointed leaflets, each up to 15 mm long. The purple pea-shaped flowers are to 11 mm long, and are held in groups of up to 8 flowers, on a stem to 10 cm tall. The spring flowers are followed by hairy pods, up to 17 mm long. Best time to identify is Spring when flowering.</p>	Negligible	NSW-V

	<p>Silky Swainson-pea has been recorded from the Northern Tablelands to the Southern Tablelands and further inland on the slopes and plains. There is one isolated record from the far north-west of NSW. Its stronghold is on the Monaro. Also found in South Australia, Victoria and Queensland.</p> <p>Habitat and ecology</p> <ul style="list-style-type: none"> • Found in Natural Temperate Grassland and Snow Gum <i>Eucalyptus pauciflora</i> Woodland on the Monaro. • Found in Box-Gum Woodland in the Southern Tablelands and South West Slopes. • Sometimes found in association with cypress-pines <i>Callitris</i> spp. • Habitat on plains unknown. • Regenerates from seed after fire. <p>Threats</p> <ul style="list-style-type: none"> • Loss and degradation of habitat and/or populations for residential developments. • Loss and degradation of habitat and/or populations by intensification of grazing regimes. • Loss and degradation of habitat and/or populations by invasion of weeds. • Loss and degradation of habitat and/or populations from road works (particularly widening or re-routing). • Loss and degradation of habitat and/or populations for agricultural developments. • Infrastructure developments such as the Googong to Murrumbidgee pipeline project are known to have destroyed populations of the Silky Swainson-pea”. <p>Silky Swainson-pea has been recorded from the Northern Tablelands to the Southern Tablelands. It is associated with Apple Box - Yellow Box dry grassy woodland of the South Eastern Highlands Bioregion. It is not known, only predicted, from Oberon CMA sub region. There are no Bionet records within the search area.</p> <p>The history of grazing, clearing/ground disturbance, and weed invasion over this site makes the occurrence of this species very unlikely. It is not known from the Oberon CMA and habitat is degraded. Unlikely to be present.</p>		
<p>\Endangered ecological communities/populations</p>	<p>Department of Environment and Heritage 2006 Scientific Committee (EPBC) note:</p> <p>“White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland, to be known informally as Box – Gum Grassy Woodland and Derived Grassland Endangered Ecological Community occurs over</p>	Low	

	<p><i>around 250 000Ha in NSW, and also occurs in the ACT, Qld and Victoria.</i></p> <p>The loss of 1.1Ha of this Endangered Ecological Community, in poor condition, is not expected to affect its distribution or ongoing viability in this locality, or regionally.</p>		
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It is therefore concluded that due to the lack of habitat and degraded nature of the habitat, paucity of Bionet recorded sightings, and lack of impact over any “natural” existing dam or creek with riparian vegetation, or over any indigenous trees/shrubs, that these species would not occur over the development site. They are therefore removed as candidate species from the assessment.

Therefore no further assessment of these species is required, and its habitat is not present.

5.0 BIODIVERSITY CREDIT REPORT

5.1 Credit Profiles

5.1.1 Ecosystem Credits

No Ecosystem credits were required for this project as detailed in Appendix 7- BioBanking Credit Report.

5.1.2 Species Credits

No Species Credits were required for this project.

6.0 STAGE 2- IMPACT ASSESSMENT

6.1 Avoid and minimize impacts on biodiversity values

6.1.1 Site selection

The background to the project is outlined in Section 1.1.0 and 1.0.2 of this report. In summary the site was selected based upon the existing Borg Facility already in place. It is a large manufacturing facility, with established infrastructure. The development is seen as a natural extension of the plant, on land already primarily disturbed, and owned by Borg.

6.1.2 Planning

The development footprint was selected by Borg Manufacturing, in conjunction with consultant and industry input. It reflects the best economic and functional layout for the facility. Operationally the basins and hardstand (which is the only area of the footprint that impacts on native grassland) was seen as the best place to locate it, and there was no other land available to house these structures located downslope of the facility.

The development footprint is sited over existing cleared, disturbed land, with the exception of 1.1Ha over native grassland in moderate-good condition, which is an Endangered Ecological Community. This layout causes minimal impact over surrounding native vegetation, and fauna habitat. The total development footprint is approximately 7.5Ha.

There is not considered scope for alternative placement of the basins. Borg Manufacturing has undergone significant long term planning for these additions, and site rationalisation. All other development over the development footprint avoids any disturbance over these native grasslands.

Recommendations have been made in Section 7 of this report for the proponent to consider mitigating indirect impacts, and improving the offsite biodiversity of the greater Borg site.

6.1.3 Construction phase

The construction phase will be in accordance with a Construction Environmental Management Plan (CEMP). The CEMP will outline appropriate erosion and sediment control, no go zones (edge of footprint area), rubbish and waste facilities, compound and stockpile site locations, noise/light, operational hours, etc. Appropriate safeguards would be implemented, and all workers/contractors toolboxed before working on site, and following OHS/SWMS protocols.

6.1.4 Operational phase

Long term erosion and sediment control has been addressed within the proposal, with an emergency and first flush basins incorporated within the design. A detailed and effective stormwater runoff re-use /treatment/operational water treatment and re-use within the Borg facility is currently in place. Consultant reports will address these issues as part of the EIS. Further information was not available at time of writing.

6.2 Confirming development footprint

The development footprint is as shown in Figure 1.

6.3 Indirect impacts

Potential indirect impacts include:

- Erosion and sediment runoff into local creeks.
- Minimal loss of fauna habitat (1.1Ha of native grassland).
- Potential for noise, dust and light spill.
- Construction and operation impacts –
 - Trampling;
 - Rubbish dumping
 - Noise;
 - Light spill;
 - Weed encroachment;
 - Nutrient run off
 - Pest animals

These indirect impacts would be addressed during the construction phase under the CEMP, and include dust suppression through regular watering, off site water monitoring, erosion and sediment control implemented and maintained over all bare areas /development footprint areas including stockpile sites, rubbish areas delineated and maintained, and no go zones over any area outside of the development footprint.

During the operational phase permanent erosion and sediment control, and nutrient control (ie a detention basin) has been addressed as part of the proposal. Light and noise spill is anticipated to be in keeping with the existing facilities operation.

Ongoing grazing of the paddocks off the development site is anticipated to continue in order to reduce bushfire threat close to the facility, and keep grassland managed. Some areas around the creek are recommended to be revegetated, and weeds controlled, however this is at the discretion of Borg, and the statutory authorities considering this proposal.

6.4 Thresholds for the assessment and offsetting unavoidable impacts

6.4.1 Landscape features

The impacts will:

- Not substantially reduce the width of vegetation in riparian buffer zones;
- Not impact on state biodiversity links;
- Not impact on important wetlands or their buffers;
- Not impact on local wildlife corridors.

6.4.2 Native Vegetation

The impacts are:

- Minor (removal of 1.1Ha) impact on a degraded Endangered Ecological Community and no impact on any Critically Endangered Ecological Community.

6.4.3 Species and Populations

The impacts will:

- Not impact on critical habitat;
- Not impact on critically endangered species or populations;
- Not impact on a threatened species or population.

6.4.4 Offset requirements

As the site score is <17, there is no requirement to determine any offset requirements under the FBA.

7.0 STAGE 3: BIODIVERSITY OFFSET STRATEGY

As the site score is <17, and impact over an Endangered Ecological Community is limited to around 1.1Ha, there are no offset requirements under the FBA.

The following recommendations (in no order of importance) if adopted will improve the biodiversity outcomes for this proposal:

- Implement standard erosion and sediment control measures over the development site whilst construction works are underway as part of CEMP.
- Retain all remaining native vegetation within proposed development site where feasible.
- Noxious weeds should be controlled/eradicated where feasible.

- Consider native revegetation within development site with endemic native species.
- Develop and implement a Vegetation Management Plan for the development site.

Report prepared by:



Ted Smith BSc(Hons) Accredited BioBanking Assessor, Ecological Consultants Association of NSW member
PEAK LAND MANAGEMENT

DISCLAIMER: Whilst every effort is made to present clear and factual information based on current scientific data, on site field survey, and guidelines, no guarantee is made that all species have been identified on the site, or that all information is presented to the authorities satisfaction, or that the development will be approved as this is in the hands of the approving statutory authorities. Consequently no liability is accepted for losses, expenses or damages occurring as a result of information presented in this document.

8.0 REFERENCES

Auld, BA & Medd, RW 1987, *Weeds*. Inkata Press.

Brooker, MIH and Kleineg, 2006, *Field Guide to Eucalypts – South Eastern Australia, Volume 1*. Blooming Books.

Cropper, S 1993, *Management of Endangered Plants*, CSIRO, Victoria.

Department of Sustainability, Environment, Water, Population and Communities 2010, *EPBC Act Fact Sheet*.

Department of Sustainability, Environment, Water, Population and Communities 2012, *Interim Koala Referral Guidelines*.

Fairley, A and Moore, P 2000, *Native Plants of the Sydney District*. Kangaroo Press.

Harden, G., 1995-2002, *Flora of NSW – Volumes 1-4*. UNSW Press.

Harden, G., McDonald, B., Williams, J., 2006, *Rainforest Trees and Shrubs. A field guide to their identification*. Ligare Book Printer.

Harden, G., Nicholson, H., McDonald, B. Nicholson, N., Tame, T., Williams, J. 2014, *Rainforest Plants of Australia*. Gwen Harden Publishing and Terania Rainforest Publishing.

Jones, C and Paris, S 1994, *Field Guide to Australian Mammals*. Steve Parish Publishing.

National Parks and Wildlife Service 2002, *Vegetation Survey, Classification and Mapping for LHCCREMS*.

NSW Office of Environment and Heritage 2011. Plant communities of the SE Highlands and Australian Alps within the Murrumbidgee Catchment of NSW. Published by the Office of Environment and Heritage for the NSW Government.

NSW Office of Environment and Heritage 2014. Framework for Biodiversity Assessment. NSW Biodiversity Offsets Policy for Major Projects. Published by the Office of Environment and Heritage for the NSW Government.

NSW Office of Environment and Heritage 2012, Assessors Guide to using the BioBanking Credit Calculator v.2. Published by the Office of Environment and Heritage for the NSW Government.

NSW Office of Environment and Heritage 2014, NSW Biodiversity Offsets Policy for Major Projects. Published by the Office of Environment and Heritage for the NSW Government.

NSW Office of Environment and Heritage 2014, BioBanking Assessment Methodology. Published by the Office of Environment and Heritage for the NSW Government.

Pizzey, G 1997, *Field Guide to the birds of Australia*. Angus and Robertson.

Richardson, F.J. *Weeds of the south-east: an identification guide for Australia (2nd ed)*; 2011. Everbest Printing.

Robinson, L. 2003 (3rd ed). *Field guide to the Plants of Sydney*. Kangaroo Press.

Smith, 2005. *Significance of Squirrel Glider Habitat*.

Wheeler D.J.B., Jacobs S.W.L. and Whalley R.D.B. 2002 (3rd ed). *Grasses of NSW*. University of New England.

Wilson, S. And Swan, G; 2008 (2nd ed). *A complete guide to Reptiles of Australia*. Everbest Printing.

Winning, G., and Paul King, J. 2004. *A study of Squirrel Glider in a fragmented urban landscape, Newcastle, NSW*. HWR Limited.

Websites

The following legal acts and legislation were accessed through Australasian Legal Information Institute (<http://www.austlii.edu.au/>):

Environment Protection and Biodiversity Conservation Act 1999

Threatened Species Conservation Act 1995 and Threatened Species Legislation Amendment Act 2004

Native Vegetation Act (2003)

National Parks and Wildlife Act 1974 ,

Environmental Planning and Assessment Act (1979)

Water Management Act, 2000

State Environmental Planning Policy 19, 44, 71, 14

Other Websites

The following websites have been viewed throughout the development of this report:

<http://plantnet.rbgsyd.nsw.gov.au/search/simple.htm>

<http://imagery.maps.nsw.gov.au/>

Google Earth and Maps

<http://www.bionet.nsw.gov.au/>

www.deh.gov.au

<http://www.environment.gov.au/epbc/pmst/index.html>- & Protected Matters Search

<http://www.frogsaustralia.net.au/frogs/>

<http://www.dpi.nsw.gov.au/agriculture/pests-weeds/weeds/noxweed/noxious>

http://www.ehp.qld.gov.au/wildlife/koalas/koala-ecology.html#claws_for_climbing

<http://www.environment.nsw.gov.au/determinations>

<http://www.environment.nsw.gov.au/animals/Glidingpossums.htm>

<http://weeds.dpi.nsw.gov.au/WeedDeclarations/>

Oberon Shire Council

<http://www.rfs.nsw.gov.au/plan-and-prepare/1050-vegetation-clearing>

<http://www.environment.gov.au/biodiversity/threatened/communities/pubs/box-gum.pdf>

<http://www.environment.gov.au/system/files/pages/dcad3aa6-2230-44cb-9a2f-5e1dca33db6b/files/box-gum.pdf>

<http://www.environment.nsw.gov.au/threatenedSpeciesApp/>

Applications – iphone

- The Michael Morcombe eGuide to the Birds of Australia v1.4, 2010. Mydigitalearth.com
- Motion X GPS, 2015.
- Frogs of Australia. Hoskin, C.J, Grigg, G.C., Stewart, D.A. & Macdonald, S.L. 2015. Frogs of Australia (1.0.1/4139). (Mobile application software). Retrieved from <http://www.ugmedia.com.au>.

GLOSSARY OF TERMS

BBAM	BioBanking Assessment Methodology
Development site	The proposed Major Project area of land
EIS	Environmental Impact Statement
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i> (NSW). Provides the legislative framework for land use planning and development assessment in NSW
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Commonwealth). Provides for the protection of the environment, especially matters of national environmental significance, and provides a national assessment and approvals process
ESD	Ecologically sustainable development. Development which uses, conserves and enhances the resources of the community so that ecological processes on which life depends, are maintained and the total quality of life, now and in the future, can be increased
FBA	Framework for Biodiversity Assessment. NSW Biodiversity Offsets Policy for Major Projects
FM Act	<i>Fisheries Management Act 1994</i> (NSW)
IBRA region	A bioregion identified under the Interim Biogeographic Regionalization for Australia (IBRA) system, which divides Australia into bioregions based on their dominant landscape –scale attributes
IBRA subregion	A subregion of a bioregion identified under IBRA and based upon major catchment areas
LGA	Local Government Area
LEP	Local Environmental Plan. A type of planning instrument made under Part 3 of the EP&A Act
Mitchell Landscape	Landscapes with relatively homogenous geomorphology, soils and broad vegetation types, mapped at a scale of 1:250 000
NES	Matters of national environmental significance under the Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>
Noxious Weeds Act	<i>Noxious Weeds Act 1993</i> (NSW)
PCT	Plant Community Type
Plot	An area within a vegetation zone in which site attributes are measured (both a 50m long transect, and 400m ² quadrat)
OEH	Office of Environment and Heritage
NPW Act	<i>National Parks and Wildlife Act 1974</i> (NSW)
SEPP	State Environmental Planning Policy. A type of planning instrument made under Part 3 of the EP&A Act.
The Tool	BioBanking Calculator
TSC Act	<i>Threatened Species Conservation Act 1995</i> (NSW)
TSPD	Threatened Species Profile Database
Vegetation Zone	A relatively homogenous area of native vegetation on a

	development site that is the same PCT and broad condition state
VIS	NSW Vegetation Classification database. The master vegetation community –level classification for use in vegetation mapping programs and regulatory biodiversity impact assessment frameworks in NSW

APPENDIX 1: FLORA SPECIES RECORDED OVER PLOTS AND OFF SITE

Scientific Name	Common Name	Plots				Off site
		1	2	3	4	
Trees						
<i>Acacia dealbata</i>	Silver wattle					x
<i>Eucalyptus</i> spp	Various planted species in shelter belt to north of study area and in grounds out of study area					x
<i>Eucalyptus bridgesiana</i>	Apple Box					x
<i>Eucalyptus melliodora</i>	Yellow Box					x
Sub Canopy/mid canopy	Nil					
Understorey: Shrubs/herbs						
<i>Geranium homeanum</i>	Native Geranium				x	x
<i>Linum marginale</i>	Native Flax				x	x
<i>Ozothamnus diosmifolius</i>	Pill Flower				x	x
Grasses						
<i>Lachnagrostis filiformis</i> subsp. <i>filiformis</i>	Blown Grass				x	x
<i>Poa labillardierei</i> var. <i>labillardierei</i>	Tussock Grass			x	x	x
<i>Poa sieberiana</i> subsp. <i>sieberiana</i>	Snow Grass	x	x	x		x
Sedges/water plants						
<i>Carex appressa</i>	Tall Sedge	x		x	x	x
<i>Carex breviculmis</i>	A sedge	x		x		x
<i>Cyperus gracilis?</i>	Slender Flat sedge				x	
<i>Juncus continuus</i>					x	x
<i>Juncus usitatus</i>		x		x	x	x
<i>Ludwigia peploides</i> subsp. <i>montevidensis</i>	Water Primrose					x
<i>Persicaria hydropiper</i>	Water Pepper				x	x
<i>Phragmites australis</i>	Native Reed			x		x
<i>Typha orientalis</i>	Bulrush					x
Ferns	Nil					
Vines and scramblers	Nil					
Orchids/epiphytes	Nil					
TOTAL NATIVE SPECIES (in plots)	13					
Weeds						
* <i>Acetosella vulgaris</i>	Sheep Sorrel		x		x	x
* (2) <i>Alternanthera philoxeroides</i>	Alligator Weed					x

* <i>Betula pendula</i>	Silver Birch					x
* <i>Bromus catharticus</i>	Prairie Grass				x	
* <i>Cirsium vulgare</i>	Spear thistle	x	x	x	x	x
* <i>Colchium autumnale</i>	Autumn Crocus				x	
* <i>Conyza bonariensis</i>	Flax leaved Fleabane				x	x
* <i>Crassocephalum crepidioides</i>	Thickhead		x			x
* <i>Cynodon dactylon</i>	Couch		x		x	x
* <i>Cyperus spp</i>						x
* <i>Dactylis glomerata</i>	Cocks Foot	x	x		x	x
* <i>Echium plantagineum</i>	Paterson's Curse				x	x
* <i>Gamochaeta coarctata</i>	Spiked Cudweed		x			x
* <i>Helminthotheca echioides</i>	Ox-tongue				x	
* <i>Holcus lanatus</i>	Yorkshire Fog	x	x			x
* <i>Hypochoeris radicata</i>	Flatweed		x		x	x
* <i>Isolepis spp</i>						x
* <i>Lolium rigidum</i>	Ryegrass				x	x
* <i>Modiola caroliniana</i>	Red-flowered Mallow		x			x
* <i>Paspalum dilatatum</i>	Paspalum	x	x			x
* <i>Pennisetum clandestinum</i>	Kikuyu					x
* <i>Phalaris spp</i>	Phalaris	x	x		x	
* <i>Phyllostachys aurea</i>	Golden Bamboo					x
* <i>Pinus radiata</i>	Radiata Pine					x
* <i>Plantago lanceolata</i>	Lambs tongue		x		x	x
* <i>Poa annua</i>	Winter grass		x			x
* <i>Populus alba</i>	Poplar					x
* <i>Ranunculus spp</i>	A Buttercup		x			x
* <i>Richardia humistrata</i>	A Mexican Clover		x			x
* (4) <i>Rubus anglocandicans</i>	Blackberry				x	x
* <i>Rumex crispus</i>	Curled Dock				x	x
* (4) <i>Salix spp</i>	Willow					x
* <i>Setaria spp</i>	A Pigeon Grass	x	x		x	x
* <i>Sonchus oleraceus</i>	Common Sowthistle				x	x
* <i>Taraxacum officinale</i>	Dandelion		x		x	x
* <i>Trifolium dubium</i>	Yellow suckling clover		x			x
* <i>Trifolium repens</i>	White clover		x		x	x
* Unknown lawn grass			x			
TOTAL WEED SPECIES (in plots)	31					
TOTAL PLANTS (in plots):	44					
# Threatened species	Nil					
(R) ROTAP - Rare plant	Nil					
* Noxious weed (5) NSW DPI Class for Oberon LGA	3					
* Weed						
^ Planted						

APPENDIX 2: FAUNA DATA FOR SITE

COMMON NAME

The following birds were observed, or heard either on or near the subject site, including flying overhead (common bird names from Pizzey & Knight, 1997):

Black Duck	*Common Pigeon
*Starling	*Corella
*Sparrow	Little Grebe
Nankeen Kestrel	Australian Raven
Hardhead/White eyed Duck	Galah
Wood Duck	Black Shouldered Kite
Plover	Welcome Swallow
Pied Currawong	Purple Swamp Hen
Grey Teal	Eurasian Coot
Red Rumped Parrot	Australian Magpie
Blue Wren	Richards Pipit
Eastern Rosella	Crimson Rosella

Other fauna observed, or heard from calls/scats/footprints/scratch marks were:

Wombat – burrows, scat

*Goats -grazing part of development site

Grey Kangaroo (x50) -recorded over surrounds

Common Eastern Toadlet- *Crinia signifera*

*Rabbit- recorded and scat

Snake- unidentified

+ Threatened spps listed under EPBC Act

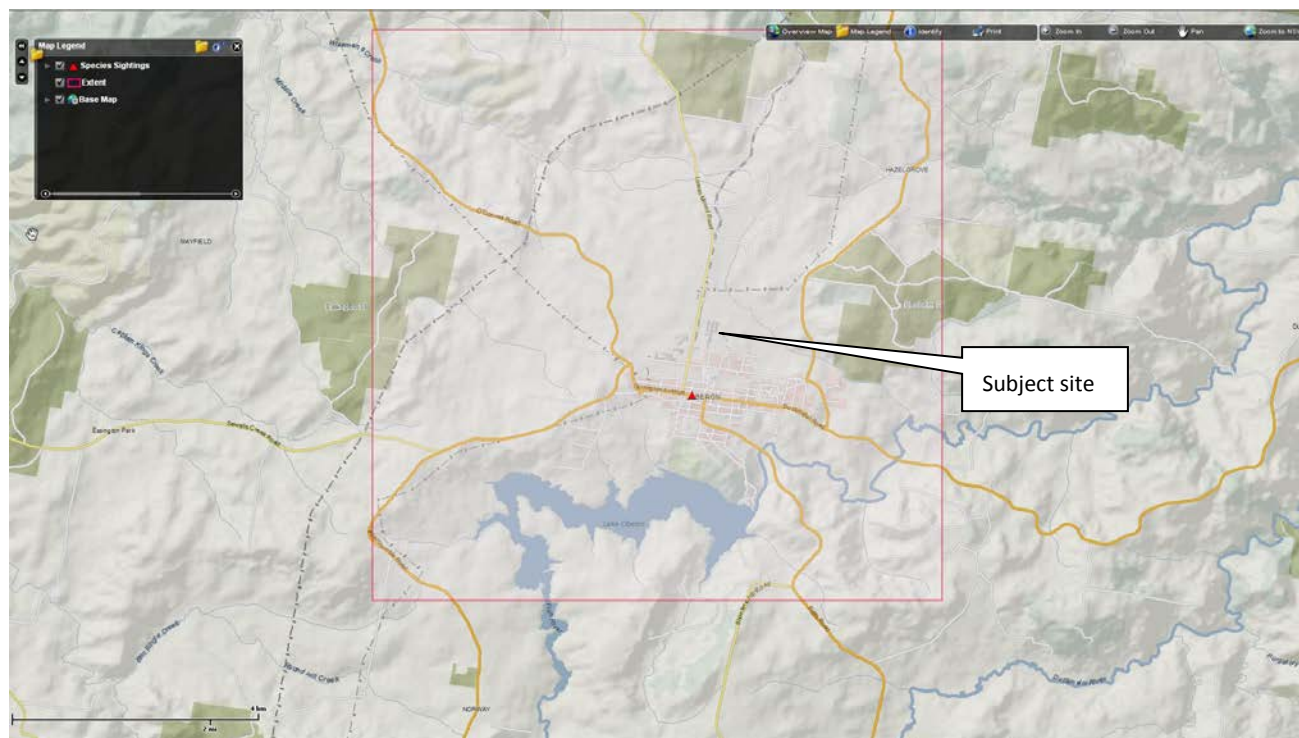
Threatened spps listed under TSC Act

* Exotic species

APPENDIX 3: THREATENED FLORA & FAUNA SPECIES SEARCH RESULT (Over a 100 square kilometre area – NSW & National EPBC Species – from Bionet).

Note: this does not mean these species are found on the site.

Search area and some key local species records (koala only record in Bionet search):



Data from the BioNet Atlas of NSW Wildlife website, which holds records from a number of custodians. The data are only indicative and cannot be considered a comprehensive inventory, and may contain errors and omissions. Species listed under the Sensitive Species Data Policy may have their locations denatured (^ rounded to 0.1°; ^^ rounded to 0.01°). Copyright the State of NSW through the Office of Environment and Heritage. Search criteria : Licensed Report of all Valid Records of Threatened (listed on TSC Act 1995) or Commonwealth listed Entities in selected area [North: -33.61 West: 149.78 East: 149.94 South: -33.76] recorded since 11 Sep 1980 until 11 Sep 2015 returned a total of 1 records of 1 species.

Report generated on 11/09/2015 11:14 AM

Kingdom	Class	Family	Species Code	Scientific Name	Exotic	Common Name	NSW status	Common status	Records
Animalia	Mammalia	Phascolarctidae	1162	<i>Phascolarctos cinereus</i>		Koala	V,P	V	1

Info



APPENDIX 4: SELECTED PHOTOS OF SITE

Plot 1 – looking north. Dominated by *Poa sieberiana* & *Carex appressa*, but cleared of all native trees and mid storey.



Plot 1- looking southwest towards Borg facility



Plot 1- looking northeast



Plot 2 looking north showing and location of proposed Emergency Basin (numbered 32 in Fig 1- completely exotic and disturbed/levelled



Plot 3 – located near creekline, over 200m from development site



Plot 4, located over northern edge of proposed First Flush Basin (33). Man made channel in background



Extension area over hard pavement- northern side of Borg facility (numbered 22 & 30 in Fig 1)



Proposed carpark (30)- cleared and levelled, totally disturbed



Processed water and stormwater dams to north of Borg facility (not forming part of development site)



Grazed paddocks surrounding and over part of development site



Part of development site – numbered 32 in Fig 1



Development site – numbered 31,32 & 33. Plot 1 located in grassland behind existing disturbed ground.



Southern and western side of Borg Facility – cleared, exotic grassland and planted spp





Polluted stormwater dam (first flush from Borg facility), exotic grassland surrounds (numbered 10 & 11 in Fig 1)





Western side of Borg factory –looking from Lowes Mount Rd



This row of planted Eucalypts to be retained (near 12 & 13 in Fig. 1)



Looking east from boundary of development site in foreground/mid ground over the proposed hardstand/first flush basin



Looking south showing disturbed land and pine tree plantation (unaffected by proposal)



Creekline 300m north of development site dominated by Willows and Blackberry. Native grass & sedge understorey



Two Apple Box trees identified some 230m from development site



APPENDIX 5: PLOT 1 FIELD DATA

Site

Transect

plot

data

value:

sheet

(Start a new sheet for each vegetation zone)

**Coordinates** (GPS datum GDA94: _Plot 1_)

Transect / plot number	1
Easting	765481
Northing	6268243
Zone AMG	55H

Transect 10 points along 50-m transect (see transect tally table for % foliage cover variables)

Native over-storey cover (%)	0
Native mid-storey cover (%)	0
Native ground cover (grasses) (%)	60
Native ground cover (shrubs) (%)	0
Native ground cover (sedges) (%)	10
Exotic plant cover (%)	30

Larger sampling area

Native plant species richness ¹	4
Number of trees with hollows ²	0
Over-storey regeneration ³	0
Total length of fallen logs (m) ²	0

Site

value:



Transect tally table

CMA area:

Central West

CMA subregion

Oberon

Recorder

Ted Smith

Date

8.4.16

Proposal ID

Proposal name

Zone ID

0043/2016/2548MP

Borgs

Plot 1

Vegetation formation

Grassy Woodlands

Vegetation class

Southern Tableland Grassy Woodlands

Vegetation type

Apple Box - Yellow Box dry grassy woodland of the South Eastern Highlands Bioregion

Condition (low or mod/good)

Zone descriptor (optional)

Geographic/habitat features

Low

(tick after printing step 2 of Credit Calculator)

X

Transect number_1	Number of hits (tally)	%
Native over-storey cover (%)		0
Native mid-storey cover (%)		0
Native ground cover (grasses) (%)	15	60
Native ground cover (shrubs) (%)		0
Native ground cover (other-sedges) (%)	5	10
Exotic plant cover (%)	30	30

Plot 1

Native over-storey species list At 10 points along the 50-m transect	Regeneration (v) (zone)	Native mid-storey species list (>1m to <over-storey) At 10 points along the 50-m transect	Native ground cover (grasses) species list (ground stratum <1m) At 50 points along the 50-m transect	Native ground cover (shrubs) species list (ground stratum <1m) At 50 points along the 50-m transect	Native ground cover (other) species list (ground stratum <1m) At 50 points along the 50-m transect	Exotic plants species list At 50 points along the 50-m transect	Fallen logs (min. 10 cm diameter x 50 cm long) (20 x 50m plot)
0	0	0	30 hits – all <i>Poa sieberiana</i>	0	5 hits- all sedges- <i>Carex appressa</i> , <i>Carex breviculmis</i> , <i>Juncus usitatus</i>	15	0
Total number of species =0							
Foliage cover (%) =0							
Benchmark value (%FC) =15-25							
Average crown diameter =0							
Average foliage cover (%) =0							
Number of trees =0		Total no of species =0	Total no of species =1	Total no of species =0	Total no of species =3	Total no of species =6	Total (m) =0
Sample area =Plot 1 Whole zone Number of trees with hollows =0 Sample area =Plot 1 Benchmark value =1		Foliage cover (%) =0	Foliage cover (%) =60	Foliage cover (%) =0	Foliage cover (%) =10	Foliage cover (%) =30	Benchmark (m) =35

APPENDIX 6: COMMUNITY CONDITION BENCHMARKS FOR APPLE BOX - YELLOW BOX DRY GRASSY WOODLAND OF THE SOUTH EASTERN HIGHLANDS BIOREGION (FROM VIS)

Vegetation Formation	Grassy Woodlands	Grassy Woodlands
Vegetation Class	Southern Tableland Grassy Woodlands	Southern Tableland Grassy Woodlands
Vegetation Type	Apple Box - Yellow Box dry grassy woodland of the South Eastern Highlands Bioregion	Apple Box - Yellow Box dry grassy woodland of the South Eastern Highlands Bioregion
Vegetation type ID (BVTID)	CW102	LA103
Benchmark Variation	None	None
Default Condition	Yes	Yes
Native plant species richness	30.00	30.00
Native over storey cover min	15.00	15.00
Native over storey cover max	25.00	25.00
Native mid storey cover min	5.00	5.00
Native mid storey cover max	8.00	8.00
Native ground cover grass min	8.00	8.00
Native ground cover grass max	60.00	60.00
Native ground cover shrubs min	3.00	3.00
Native ground cover shrubs max	5.00	5.00
Native ground cover other min	3.00	3.00
Native ground cover other max	10.00	10.00
Number of trees with hollows	1.00	1.00
Total length of fallen logs	35.00	35.00
CMA Percentage cleared %	95	95
Benchmark source		
Benchmark	Benchmarks updated as part of general	

comments	review in 2012	
Benchmark reference site		

APPENDIX 7: BIODIVERSITY CREDIT REPORT

Biodiversity credit report



This report identifies the number and type of biodiversity credits required for a major project.

Date of report: 8/04/2016

Time: 4:17:16PM

Calculator version: v4.0

Major Project details

Proposal ID:	0043/2016/2548MP
Proposal name:	Borg Panels Timber Panel Processing Facility Expansion
Proposal address:	124 Lowes Mount Road, Oberon NSW 2787
Proponent name:	Borg Panels Pty Ltd
Proponent address:	2 Wella Way, Somersby NSW 2250
Proponent phone:	0243409827
Assessor name:	Ted Smith
Assessor address:	PO Box 3083, MEREWETHER NSW 2291
Assessor phone:	02 4963 3323
Assessor accreditation:	0043

Summary of ecosystem credits required

Plant Community type	Area (ha)	Credits created
Apple Box - Yellow Box dry grassy woodland of the South Eastern Highlands Bioregion	1.07	0.00
Total	1.07	0

Credit profiles**1. Apple Box - Yellow Box dry grassy woodland of the South Eastern Highlands Bioregion, (CW102)**

Number of ecosystem credits created	0
IBRA sub-region	Oberon - Central West

Offset options - Plant Community types	Offset options - IBRA sub-regions
<p>Apple Box - Yellow Box dry grassy woodland of the South Eastern Highlands Bioregion, (CW102)</p> <p>Yellow Box - Blakely's Red Gum grassy woodland on the tablelands, South Eastern Highlands Bioregion, (CW328)</p>	<p>Oberon - Central West</p> <p>and any IBRA subregion that adjoins the IBRA subregion in which the development occurs</p>

Summary of species credits required