Australasian Conference Association Ltd

Wahroonga Estate Redevelopment - Independent Environmental Audit of Biodiversity Management EPBC Approval 2008/4460

22 June 2016

PARSONS BRINCKERHOFF

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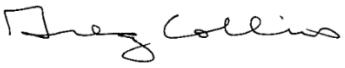
Prepared by:	Alex Cockerill, Dannie Richter	Date: 22/06/2016	Signature: 
Reviewed by:	Steven Crick	Date: 22/06/2016	Signature: 
Approved by:	Greg Collins	Date: 22/06/2016	Signature: 

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Parsons Brinckerhoff Australia Pty Limited *ABN 80 078 004 798* Level 3 51-55 Bolton Street Newcastle NSW 2300 PO Box 1162 Newcastle NSW 2300 Australia Tel: +61 2 4929 8300 Fax: +61 2 4929 8382 www.pbworld.com *Certified to ISO 9001, ISO 14001, OHSAS 18001*

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Glossary

ACA	Australasian Conference Association
APZ	Asset Protection Zone
BGHF	Blue Gum High Forest
BMP	Biodiversity Management Plan
DCP	Development Control Plan
EECs	Endangered Ecological Communities
EPBC Act	*Environmental Protection and Biodiversity Conservation Act 1999*
EPA Act	*Environmental Planning and Assessment Act 1979*
IPA	Inner Protection Area
KMC	Ku-ring-gai Municipal Council
OPA	Outer Protection Area
PA	Project Approval 2008/4460
SSGF	Sydney Sandstone Gully Forest
STIF	Sydney Turpentine Ironbark Forest
VMP	Voluntary Management Plan
WSUD	Water Sensitive Urban Design
WH&S	Work, Health and Safety

1. Audit details

1.1 Audit details

Table 1.1 Audit details

Assessment Title	Independent Environmental Audit of Wahroonga Estate Redevelopment
Client	Australasian Conference Association
Client Address	148 Fox Valley Road, Wahroonga, NSW, 2076
Client Telephone	(08) 9847 3333
Date of Assessment	17 September 2015
Site Name	Wahroonga Estate
Site Address	Fox Valley Road, Wahroonga, NSW
Main Auditee Contact	Rosslyn Monteleone (Property Manager) Graham Wegener (Grounds and Projects Manager)
Lead Auditor	Steven Crick
Auditor's Telephone	02 4929 8300

1.2 Site details

Australasian Conference Association (ACA) was granted approval to develop the Wahroonga Estate in 2010 under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* and concept approval over the site under Part 3A of the *Environmental Protection and Planning Act 1979*.

The Wahroonga Estate Redevelopment project involves the extension of Sydney Adventist Hospital, the development of up to 500 residential dwellings, student accommodation, seniors housing, commercial and retail buildings, a K-12 school, nurse training facilities and expansion of religious facilities at the site.

The project also involves the conservation of 31.4 hectares of remnant bushland, which is the focus of this audit and is referred to throughout this report as 'the site'.

2. Audit process

2.1 Audit scope

Condition 5 of the Wahroonga Estate Project Approval (2008/4460) granted under the *Environment Protection and Biodiversity Conservation Act 1999* states:

> *'Upon direction of the Minister, the person undertaking the action must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the Minister. The independent auditor must be approved by the Minister prior to the commencement of the audit. Audit criteria must be agreed to by the Minister and the audit report must address the criteria to the satisfaction of the Minister'*.

The scope of the audit was confirmed with the Commonwealth Department of the Environment (the Minister's delegate), via email prior to the audit.

2.2 Audit methodology

2.2.1 Opening meeting

An opening meeting was held on 17 September 2015 at the Wahroonga Adventist Retirement Village, commencing at 9:15am. The participants at this meeting and their roles are listed in Table 2.1.

Table 2.1 Opening meeting attendees

Staff	Organisation	Title
Rosslyn Monteleone	Seventh-day Adventist Church Wahroonga (ACA)	Property Manager
Graham Wegener	Seventh-day Adventist Aged Care Sydney (ACA)	Grounds and Projects Manager, WHS Coordinator
Frances O'Brien	Seventh-day Adventist Aged Care Sydney (ACA)	Technical Research Officer (Bush and WH&S)
Steven Crick	WSP | Parsons Brinckerhoff	Lead Environmental Auditor
Alex Cockerill	WSP | Parsons Brinckerhoff	Manager - Biodiversity

The purpose of the opening meeting was to discuss the scope of the audit and the audit process. The methods to be used by the auditor to conduct the audit were explained. It was stated that the auditor would be interviewing personnel, reviewing records and that Alex Cockerill would be conducting a site inspection in order to address specific compliance requirements.

2.2.2 Audit interviews and data collection

Audit interviews were conducted by the lead auditor on 17 September 2015, at which time key compliance requirements and site management issues were discussed. The ACA staff involved with the audit interviews are detailed in Table 2.2. During the site inspection, Alex Cockerill also briefly questioned several ACA contractors and staff regarding the work they were undertaking within the site.

Table 2.2 Audit interviews

Staff	Organisation	Title
Rosslyn Monteleone	Seventh-day Adventist Church Wahroonga (ACA)	Property Manager
Graham Wegener	Seventh-day Adventist Aged Care Sydney (ACA)	Grounds and Projects Manager, WHS Coordinator
Frances O'Brien	Seventh-day Adventist Aged Care Sydney (ACA)	Technical Research Officer (Bush and WH&S)

Where possible, documents and data collected during the audit were reviewed on site. A number of documents used for the audit were reviewed off-site following the site audit component.

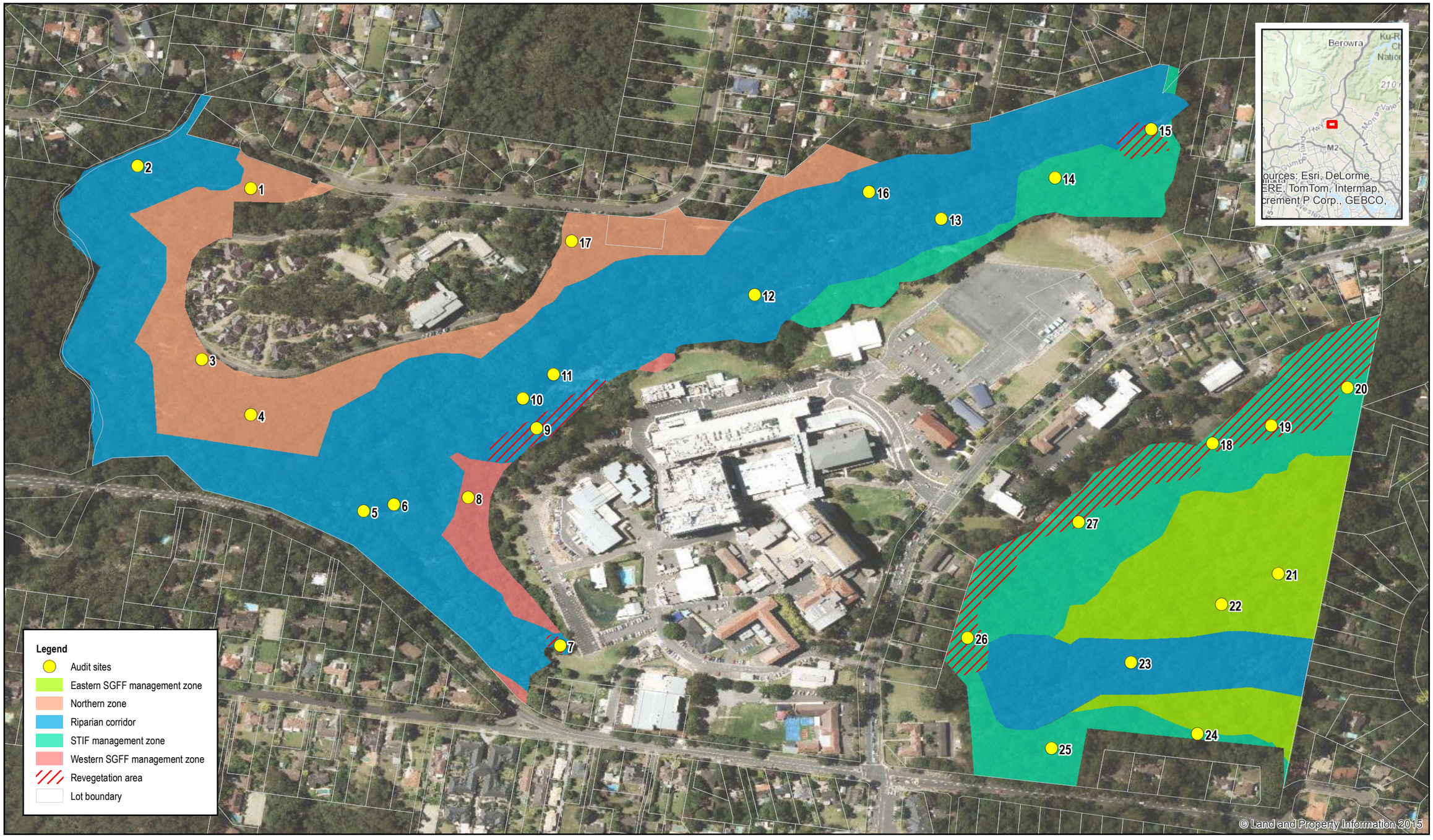
Information obtained during the audit was verified where possible. For example, statements made by on-site staff were verified by reviewing relevant documentation and/or site inspections.

2.2.3 Site inspection

A site inspection was undertaken across the site on 17 September 2015 by Alex Cockerill, who investigated the implementation of relevant compliance requirements, including the site's Biodiversity Management Plan (BMP). Figure 2.1 shows the sites that were inspected during the field inspection.

Appendix B provides photographs taken during the site inspections.

The site inspection focused on vegetated areas within the E2 zone and combined random meander and rapid assessment survey methodologies, as detailed in the following sections.



SEVENTH-DAY ADVENTIST CHURCH

Data source: -
- © Land and Property Information 2015
Sources: Esri, DeLorme, HERE, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community

Map no: 2267017A_GIS_001_A1

Author: - SuansriR

Last edited by: - SuansriR

Last edited date: 20/11/2015

0 50 100
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Scale ratio correct when printed at A3

Coordinate system: GCS GDA 1994

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Compliance Audit Wahroonga Estate, Fox Valley NSW
Figure 2.1
Management Zones

2.2.3.1 Random meanders surveys

Due to the large extent of the site, random meander surveys were undertaken to validate existing vegetation community and weed mapping within the BMP. Random meander surveys are a variation of the transect type survey and were completed in accordance with the technique described in *Management of Endangered Plants* by Simon Cropper (1993), whereby the recorder walks in an unsystematic manner throughout the site recording all species observed, boundaries between various vegetation communities and condition of vegetation. The time spent in each vegetation community was generally proportional to the size of the community and its species richness.

2.2.3.2 Rapid assessment

To assess biodiversity values, 27 rapid assessments were undertaken throughout the site. The rapid assessments incorporated methodologies from the BioBanking Operation Manual prepared by Seidel & Briggs 2008 and included an assessment of weed species diversity and cover, regeneration.

2.2.3.3 Condition and quality assessment of vegetation communities

The general condition of vegetation was assessed during the field surveys using parameters such as intactness, diversity, history of disturbance, weed invasion and health.

Three general categories were used to describe the condition of vegetation communities:

- **Good:** Vegetation still retains the species complement and structural characteristics of the pre-European equivalent. Such vegetation has usually changed very little over time and displays resilience to weed invasion due to intact groundcover, shrub and canopy layers.
- **Moderate:** Vegetation generally still retains its structural integrity, but has been disturbed and has lost some component of its original species complement. Weed invasion can be significant in such remnants.
- **Low:** Vegetation that has lost most of its species and is significantly modified structurally. Often such areas have a discontinuous canopy of the original tree cover, with very few shrubs. Exotic species, such as introduced pasture grasses or weeds, replace much of the indigenous ground cover. Environmental weeds are often co-dominant with the original indigenous species.

2.2.4 Closing meeting

A closing meeting was held on 17 September 2015 at the Wahroonga Adventist Retirement Village, commencing at 4.30pm. The same participants that attended the opening meeting came to the closing meeting.

The purpose of the closing meeting was to discuss preliminary audit findings, outline any outstanding information and data requirements and to discuss the audit reporting process.

2.3 Reporting

Following completion of the site component of the audit, audit notes were reviewed and outstanding information was clarified with ACA. The EPBC Act and BMP requirement checklists were completed following the receipt of outstanding information or clarification of data gaps.

This report was then prepared to provide an overview of any compliance issues and any other observations made by the auditor during the audit.

2.4 Definitions

The determination of results from the audit was based on the definitions provided in Table 2.3.

Table 2.3 Audit definitions

Rating	Description
Compliant (Y)	ACA has been found to comply with the specific requirement of a plan or condition of approval.
Observation (O)	ACA has been found to be compliant with the specific requirement of an approval condition or plan, although issues relevant to that requirement were noted.
Not compliant (N)	ACA has been found to have not met the specific requirement of a plan or condition of approval.
Not applicable (NA)	A specific requirement of a condition of approval or plan relevant to the site falls outside the scope of the audit, is addressed or duplicated by another audit condition or has not been triggered.
Undetermined (U)	A rating of 'undetermined' is given when the condition or element of a condition falls inside the scope of the audit but there is insufficient evidence to make a judgment on compliance or non-compliance.

3. Audit findings

This section provides an overview of the findings of the audit. A detailed assessment of compliance for each requirement of the approved audit protocol against the criteria is described in Appendix B.

3.1 Status of operations

The site consists of a large tract of remnant bushland that includes several endangered ecological communities (EECs) and a range of threatened flora and habitat for a number of threatened fauna species. The site is linked to Lane Cove National Park to the south-west.

The site has a high diversity of native plant species and includes a substantial proportion of Sydney Turpentine Ironbark Forest (STIF) and Blue Gum High Forest (BGHF), which have been significantly cleared across their original habitats and are both listed as endangered under Commonwealth and State legislation.

Responsibility for managing the Wahroonga Estate 'site' (bushland area) has been given to a team referred to as 'the grounds team' or 'BMP team' who are based at the Seventh-day Adventist Aged Care Facility at Wahroonga, NSW. The team is led by Graham Wagener and operates under a contract with ACA. The team includes full-time and part-time, paid and volunteer members and consisted of 10 individuals at the time of the audit. This team has been contracted since 2010 to maintain and improve the site, as required by the BMP. The team operates out of a shed and office building and utilises a range of equipment and stores which are kept at the site.

The key activities undertaken by the team include: weeding; propagation of native vegetation; planting of native vegetation and maintenance of plantings; community education and open days; monitoring and reporting and maintenance of the site (i.e. litter removal, trail maintenance, earthworks etc.).

Local and regional communities are heavily involved with the site and grounds team, with a number of local schools and other community groups using the site for excursions and to provide volunteers for bush regeneration work. The grounds team operates the Wahroonga Waterways Landcare group that works on the site.

During the audit, the site was found to be well maintained and used heavily by local and regional community groups. The area has well defined and maintained paths and a number of signs have been erected to provide information about the environmental and biodiversity features of the site. The site still contains substantial areas of weeds that are common to bushlands areas around Sydney, such as privet and lantana, although large efforts have been made by the grounds team in removing these and rehabilitating the site and substantial progress in achieving this is apparent.

The grounds team has generally adhered to implementing the approved BMP, but the team considers some key aspects of the plan to be incorrect and not best practice for site conditions. For example, rehabilitated parts of the site have been planted with a mixture of species that are both endemic and non-endemic to the site. The grounds team has also developed its own vegetation mapping that differs from that provided with the BMP.

3.2 Compliance

Table 3.1 provides details of the non-compliances that were identified as part of the audit. A full check-list of compliance against each requirement under the BMP is provided in Appendix B.

Table 3.1 Summary of non-compliances

EPBC Approval			
Condition reference	**Sub-criteria/ Indicator**	**Audit requirement**	**Summary of findings**
1.2.1	▪ Vegetation transition management area	▪ Has the vegetation transition management area been effectively established and is it being managed adequately?	▪ 'Transitional management area' is not mentioned anywhere within the BMP or identified in any Figures associated with the BMP.
1.2.2	▪ Site Boundary	▪ Is the site boundary established as required? Does the mapped boundary correlate to the boundary defined on the ground?	▪ There appeared to be some inconsistencies between the areas identified in the BMP including revegetation Area 2 and 3 and the on ground works. There are also some discrepancies between the Figure 3.1 weed zones and 4.1 management areas and the E2 zone boundary. ▪ No issues with boundary encroachment were noted. Boundary management measures are described in the Biodiversity Management Plan (BMP).
1.2.5	▪ Existing vegetation	▪ Do existing vegetation areas match those defined in the plan?	▪ The site audit identified that the majority of the sites inspected correlated with the identified broad vegetation classification used within the BMP. However, the grounds team have developed a refined vegetation map for the site that further divides the broad vegetation classifications into sub communities. ▪ While the refined classification is acceptable for the splitting of the riparian and Sydney Sandstone Gully Forest (SSGF) communities, the revised mapping has reclassified the areas of STIF and BGHF. This reclassification is not consistent within the detailed ecological assessment and commonwealth approval and should be reviewed.
1.2.7	▪ Proposed tree planting	▪ Has tree planting been undertaken as defined in the plan?	▪ Progressive revegetation works were identified by the audit site inspection within weed areas mapped in Figure 3.1 of the BMP, 8, 6, 7, 10, 12 and 13. No obvious application of mulch was observed, however planting included a selection of species from both understory and shrub and company layers. Planting densities appeared to be approximate and at the spacing identified in the BMP. Additional species may be required to meet floristics requirements for SSGF in accordance with the BMP. It is noted that none of the species identified in the BMP as dominant species in SSGF understorey were observed in plantings. Species observed in plantings and listed in Table C.2 of the BMP include *Tristaniopsis*

EPBC Approval			
Condition reference	**Sub-criteria/ Indicator**	**Audit requirement**	**Summary of findings**
			laurina, Omalanthus populifolius Lomandra longifolia. ■ Planting/revegetation activities undertaken at the site are described in detail in each BMP report. This includes some description of how the plantings required under the BMP have been worked to, and where some differences have occurred. The BMP is clearly out of date in regards to some requirements and needs to be updated. Plantings described in the BMP are not followed exactly due to differences in on-ground conditions and inaccuracy of mapping (in the BMP).
2.6	■ The approved plans must be implemented.	■ Were all approved plans effectively implemented?	■ ACA undertake a number of actions that go beyond the requirements of the BMP and relevant approvals, such as engaging local communities and schools in bush regeneration work, improving bushland area (access tracks, drainage management) and site monitoring. Some requirements of the BMP have not been implemented however; and these are described further in the detailed BMP assessment.
4.1	■ Within three months of every 12 month anniversary of the commencement of the action, the person taking the action must provide a report to the department demonstrating compliance with the conditions of this approval over the previous 12 months	■ Has the Department been supplied with an annual project compliance report against the conditions of approval, Biodiversity management plan and Conservation Interface Management Plan, prior to 19 December each year?	■ The action commenced on the 19 September 2011, therefore annual reporting requirements under Condition 4 of the approval were to commence on 19 December 2011 and recur annually thereafter. The following reports were provided to the auditors: ▸ 1 December 2012 ('Year 1 Report') - submitted on 25 Feb 2013 ▸ 2 November 2013 ('Year 2 Report') - submitted on 17 Dec 2013 ▸ September 2014 ('Year 3 Report') - submitted on 10 Dec 2014. ■ The reports detail compliance against the requirements of the BMP and are structured to correspond to the BMP's structure. Specific requirements of the approval are addressed in a covering letter provided with each report. These letters do not identify any compliance issues. ■ Compliance with this condition has not been met as the first compliance report was submitted late. Any future audits should assess compliance against compliance of the submission dates of future reports. Each requirement of the approval has not been addressed in these reports also.
9.1	■ The person taking the action must maintain accurate records substantiating all activities associated with or	■ Are records of all site actions being maintained properly? Are these easily accessible? Are there any records not being	■ Each yearly BMP report contains detailed descriptions of the activities undertaken at the site that relate to the approval/BMP requirements. A number of other activity registers are also kept, including: spraying records, planting lists/histories, toolbox meeting minutes, 'bush schedule', site

EPBC Approval			
Condition reference	**Sub-criteria/ Indicator**	**Audit requirement**	**Summary of findings**
	relevant to the above conditions of approval.	kept, or not provided to the auditors?	inspection forms, bird records etc. However detailed lists of the species planted in this area are not provided in the BMP reports, so the audit could not determine if revegetation activities have fully followed the BMP
Biodiversity Management Plan (BMP)			
Vegetation management plan			
C2 2.0	▪ Vegetation Management Plan ▪ Section 4.3.3 Seed Collection	▪ Seed collection, processing and storage should be undertaken in accordance with the Flora Bank Seed Collection Guidelines. Seed collection should be used for Rehabilitation of the STIF Management Zone 2.	▪ Some propagation of plants for use in revegetation of the site is undertaken by ACA staff using two greenhouses located within the aged care facility. It was reported by staff that prorogation methods used include germination of seed (purchased and collected) and cuttings. A list of seeds collected and propagated at the site is provided in each BMP report, although the species collected generally don't correspond with the STIF revegetation requirements. It was reported that revegetation requirements have been found to provide greater demand than on-site propagation activities can service. It also appears that some required species are difficult to propagate from collected seed (e.g. grass species). The 2012 report outlines quantities of purchased seed that were used for rehabilitation of STIF areas. This included use of collected *Indigofera australis* seed, although all other seed was purchased. The 2014 report states that tubestock and hydromulch was used for revegetation of STIF areas. ▪ A form was sighted during the audit for use on site for seed collection activities that aligns with the Flora Bank Seed Collection Guidelines - this form had recently been developed and a copy was sighted for the recent collection of Wombat Berry seeds (10/09/15). Although more dated records were not available. ▪ Compliance with this condition was not met as other methods for propagating STIF plants have been used. ▪ Recommendation - prioritise the use of seed collected on-site for rehabilitation of STIF areas over other means (such as use of purchased seed or tubestock). ▪ Ensure seed collection is undertaken to the requirements of the BMP and records are kept of all seed collection activities.
2.1	▪ As above	▪ Seed collection, processing and storage should follow the Flora Bank Seed Collection Guidelines (National Heritage Trust / Bushcare /Greening Australia 2002), which	▪ As above.

EPBC Approval			
Condition reference	**Sub-criteria/ Indicator**	**Audit requirement**	**Summary of findings**
		are found at www.florabank.org.au.	
2.2	▪ As above	▪ Seed collection should be used for Rehabilitation of the STIF Management Zone 2, noting that High quality STIF capable of providing seed for all strata can be found to the east in STIF Management Zone 1.	▪ As above
C3 3.3	▪ Vegetation Management Plan: ▪ Section 4.4.1 Riparian Management Zone ▪ i. Weeding	▪ Undertake weeding and soil stabilisation within the Riparian Management Zone in accordance with the Wahroonga Estate BMP (polygons 4 - 7).	▪ Stormwater run-off from 5 assets managed by Ku-ring-gai Municipal Council (KMC) flows into the site at five locations and was reported to have caused erosion and weed spread issues. In particular, the area adjacent to Elizabeth Street has been affected by concentrated water flows resulting from the sealing of gutters on this street by KMC Flows from the gutters are directed to a culvert which drains to the site and has resulted in scouring. ACA has approached KMC a number of times regarding impacts from council managed assets and to request assistance with mitigating the issues, but KMC has not committed to any action. A range of evidence was sighted to support this (e.g. email from Kelvin Peuser (ACA) to Ross Guerra (KMC) on 27/9/2011 also, 'Report for the Hydrology Chapter of Wahroonga Estate' by Frances O'Brien 8/2/2014). ▪ The audit site inspection confirmed primary weeding activities were focused in areas of Weed class 3 and to a lesser extent class 4 areas. No primary weeding was observed to have commenced in Area 4, however significant actions have been undertaken in areas 5, 6 and 7. The failure to perform sufficient weeding in Area 4 constitutes a non-compliance.
C4 4.0	▪ 4.0 Riparian Management Zone Revegetation will be undertaken in accordance with the BMP- Area 2	▪ Undertake Riparian Management Zone Revegetation in accordance with the Wahroonga Estate BMP.	▪ Progressive revegetation works were identified by the audit site inspection within weed areas mapped in figure 3.1 of the BMP, 8, 6, 7, 10, 12 and 13. No obvious application of mulch was observed, however planting included a selection of species from both understory and shrub and canopy layers. Planting densities appeared to be approximate and at spacing identified in BMP. Additional species may be required to meet floristics requirements for SSGF in accordance with the BMP. It is noted that none of the species identified in the BMP as dominant species in SSGF understorey were observed in plantings. Species observed in planting and listed in Table C.2 include Tristaniopsis laurina, Omalanthus populifolius Lomandra longifolia.

EPBC Approval			
Condition reference	**Sub-criteria/ Indicator**	**Audit requirement**	**Summary of findings**
			▪ The failure to apply mulch in accordance with the BMP requirements constitutes a non-compliance.
4.2.6	▪ 4.0 Riparian Management Zone Revegetation will be undertaken in accordance with the BMP- Area 2	▪ Install native tubestock, once mulch has been applied in according with the SSGF planting list provided in Appendix C.2.	▪ The audit site inspection observed plantings of canopy, understory and shrub layers within area 1. Planting densities appeared to be approximate and at spacing identified in BMP. Additional species may be required to meet floristics requirements for SSGF in accordance with the BMP. It is noted that none of the species identified in the BMP as dominant species in SSGF understorey were observed in plantings. However planted understorey species did consist of some species from Appendix C Species list and natural regeneration is taking place. ▪ The failure to apply mulch in accordance with the BMP requirements constitutes a non-compliance.
4.3.3	▪ 4.0 Riparian Management Zone Revegetation will be undertaken in accordance with the BMP- Area 2	▪ Mulch must be weed free certified.	▪ The grounds staff manager stated that he enquired with a number of sources about the availability of 'certified weed free mulch' and could not find any. The mulch applied therefore was not 'certified weed free'. ▪ Recommendation - review the availability of 'certified weed free mulch' and use this if available. If not remove this requirement from the BMP.
C4 4.3.7	▪ 4.0 Riparian Management Zone Revegetation will be undertaken in accordance with the BMP- Area 2	▪ Carry out supplementary plantings within Area 2.	▪ The annual BMP reports state that *Solanum laciniatum* has been planted, or grows in Area 2 as a 'pioneering plant' which provides a shading understorey and groundcover. It is noted that *Solanum laciniatum is not* listed in the BMP as a recommended planting for SSGF.
C8 8.0	▪ 4.4 Vegetation Management Requirements: ▪ 4.4.3 Sydney Turpentine Ironbark Forest Management Zone ▪ ii. Precautions against Phytophthora	▪ The following procedures will be implemented during any works in the Sydney Turpentine Ironbark Forest Management Zone as a precaution against Phytophthora: ▸ Sanitation of tools and machinery – tools must have all traces of soil washed off then be regularly drenched in a solution of disinfectant. When planting several plants, disinfect tools in a portable container of disinfectant before	▪ The grounds manager reported that no incidences of ground-based phytophthora have been observed across the site. Some cases of aerial phytophthora have been observed (i.e. trees dying from the top down). Due to this, the procedures for managing ground-based fungus specified in the BMP have not been implemented. Sterilised equipment is used however, when vegetation that is suspected to be affected by aerial phytophthora is being removed. Such vegetation is collected and disposed of as green waste, which is collected by KMC. ▪ No visible infection of phytophthora were observed within the site during the site inspection.

EPBC Approval			
Condition reference	**Sub-criteria/ Indicator**	**Audit requirement**	**Summary of findings**
		and after planting each one ▸ boots and tyres – ensure all soil is scrubbed clean and the surface is disinfected (using a one per cent solution of bleach, or a 70 per cent solution of methylated spirit. Using disinfectant according to the manufacturer's directions is also suitable.) ▸ infected vegetation – must be disposed of carefully. Never woodchip any vegetation suspected of being infected by Phytophthora.	
8.1.1	▪ As above	▪ Tools must have all traces of soil washed off then be regularly drenched in a solution of disinfectant. (A solution of one per cent bleach is sufficient for disinfecting machinery.)	▪ Refer to Requirement 8.0
8.1.2	▪ As above	▪ When planting several plants, disinfect tools in a portable container of disinfectant before and after planting each one.	▪ Refer to Requirement 8.0
8.2.1	▪ As above	▪ Boots and Tyres: To limit the spread of this fungus, ensure all soil is scrubbed clean and the surface is disinfected (using a one per cent solution of bleach, or a 70 per cent solution of methylated spirit. Using disinfectant according to the manufacturer's directions is also suitable.)	▪ Refer to Requirement 8.0
8.4	▪ As above	▪ With regard to infected vegetation and conditions 8.3.1. and 8.3.2 , carry out sanitation of tools and machinery as specified.	▪ Refer to Requirement 8.0
C10 10.0	▪ 4.4 Vegetation Management Requirements:	▪ Sydney Turpentine Ironbark Forest Management Zone	▪ The annual BMP reports show that weed control and clearing has been undertaken in Area 3 and that plantings have occurred in

EPBC Approval			
Condition reference	**Sub-criteria/ Indicator**	**Audit requirement**	**Summary of findings**
	▪ 4.4.3 Sydney Turpentine Ironbark Forest Management Zone ▪ iv. Revegetation Area 3	Revegetation in Area 3 will commence once weeds are controlled within the area. Mulch will be limited to a ring around each planted tubestock, imported mulch will be weed free certified. Supplementary plantings within this area will be carried out as follows: ▪ · Replanting of additional canopy species will be carried out in areas where the remnant canopy is relatively open; ▪ · Replanting of shrubs and small trees will be carried out to spacing produced in Appendix C.1; ▪ · Replanting of herbs and grasses will be performed where the understorey is sparse, or in areas where significant weed removal has created a lack of native groundcover vegetation; ▪ · Planted tubestock will receive generous watering prior to being planted; ▪ · Each tubestock will be ring mulched and watered; and ▪ · Tubestock will require regular watering during their establishment period as part of maintenance.	this area BMP 2014. Mulching of this area appears to have not been carried out prior to planting, instead hydro seeding has been used and native groundcovers have been established. A review of detailed lists of the species planted in this area (in BMP 2014) and site inspection observations of species planting with the Appendix C1 indicate that revegetation of Areas is in accordance with the BMP . ▪ Recommendation - a review of the planting requirements for the entire site should be undertaken against what has previously been planted. Any deficiencies or differences should be corrected.
C10 10.3	▪ 4.4 Vegetation Management Requirements: ▪ 4.4.3 Sydney Turpentine Ironbark Forest Management Zone ▪ iv. Revegetation ▪ Area 3	▪ Mulch will be limited to a ring around each planted tubestock to encourage natural regeneration in the spaces between tubestock.	▪ It was reported that mulching of individual tubestock plants has not been undertaken as it has been found to be unnecessary. Although natural leaf litter, existing canopy cover and manual watering are considered to cover this, the requirement is not complied with.
10.4	▪ As above	▪ Imported mulch will be weed certified. free	▪ See finding under 4.3.3.

EPBC Approval			
Condition reference	**Sub-criteria/ Indicator**	**Audit requirement**	**Summary of findings**
10.5.2	▪ As above	▪ Carry out replanting of shrubs and small trees in accordance with spacing intervals outlined in Appendix C.2.	▪ The annual BMP reports provide an overview of the plantings undertaken in Area 3, but only the 2014 report provides a list of the species and numbers planted in this area. Planting densities are not recorded. ▪ The 2014 BMP report states that 'Although Area 3 is listed in the original BMP as located in STIF, a tributary runs through it and hence its inclusion under the Riparian Management Area'. ACA staff stated during the audit that the vegetation mapping included in the BMP is incorrect and does not match the actual vegetation types in some areas. It appears that revegetation activities in Area 3 have therefore not followed the BMP. ▪ The audit site inspection observed plantings of shrubs and small trees in areas immediately adjoining Area 3. Planting densities appeared to be approximate and at spacing identified in BMP. Additional species may be required to meet floristics requirements for STIF in accordance with the BMP.
10.5.5	▪ As above	▪ Each tubestock will be ring mulched and watered.	▪ Refer to Requirement 10.3
10.6	▪ As above	▪ A planting list for STIF has been provided in Appendix C.1 which identifies planting densities for individual species.	▪ Refer to 10.5.2
C11 11.0	▪ 4.4 Vegetation Management Requirements: ▪ 4.4.3 Sydney Turpentine Ironbark Forest Management Zone ▪ iv. Revegetation ▪ b. Area 4	▪ Revegetation within the Sydney Turpentine Ironbark Forest Management Zone Area 4 will aim to remove weeds in the ground stratum and replant missing structural and floristic elements. Herbicide application is to occur two weeks prior to mulching. Two weeks should be allowed between herbicide applications and before mulching. ▪ Planting will take place once weeds are controlled within this area and a layer of imported mulch 100 mm thick has been applied. Imported mulch will be weed free certified. This management zone	▪ The annual BMP reports show that weed control and clearing has been undertaken in Area 4 including both Herbicide application on groundcover and cut and paste of woody weeds. Plantings have occurred in this area with species generally consistent with the species identified in Appendix C1. However a list of species and numbers planted is not provided. Planting densities are not recorded. Mulching of this area appears to have not been carried out prior to planting, instead hydro seeding has been used and native groundcovers have been established. Detailed lists of the species planted in this area and density are not provided in the BMP reports, so the audit could not determine if revegetation activities have fully followed the BMP. ▪ The audit site inspection observed plantings within Area 4. Planting densities appeared to be approximate and at spacing identified in BMP.

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Condition reference	**Sub-criteria/ Indicator**	**Audit requirement**	**Summary of findings**
		will receive no burns for a period of at least six years. ■ Supplementary plantings will be carried out as follows: ▸ replanting of additional canopy species will be carried out in areas where the remnant canopy is relatively open ▸ replanting of herbs and grasses will be performed where the understorey is sparse, or in areas where significant weed removal has created a lack of native groundcover vegetation ▸ planted tubestock should receive generous watering prior to being planted ▸ tubestock will require regular watering during their establishment period as part of maintenance.	
11.1	■ As above	■ Undertake weeding and planting of ground stratum in STIF Management Zone Area 4 as a priority and in accordance with the Wahroonga Estate BMP.	■ While primary weeding and some planting was observed throughout the majority of Area 4, significant understorey weed infestation remain within the southern portion of Area 4 with both audit sites 26 and 27 recording weed cover in the understory >70% cover. Therefore the presence of significant weed infestation at the time of the audit suggest works have not been undertaken as a priority and in accordance with the BMP
C11 11.3	■ As above	■ Carry out herbicide application two weekly prior to mulching in accordance with the Wahroonga Estate BMP.	■ Area 4 does not appear to have been mulched following herbicide application or prior to plantings. The 2012 annual report states that mulch was not applied as a 'self-mulching' effect had occurred following herbicide application. The 2013 and 2014 reports state that hydroseeding was used in place of mulch that year in Area 4.
11.7	■ As above	■ Planting will take place once weeds are controlled within this area and a layer of imported mulch 100 mm thick has been applied.	■ Refer to requirement 11.3

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C18 18.0	▪ 4.5 Public Access and Impact Avoidance:	▪ The APZ boundary will be fenced to reduce public access. Bushfire service tracks will be maintained. Fencing materials should be resistant to fire and should not restrict the movement of fauna.	▪ The APZ has been partially fenced where the public can access it (near the ACA main office) as the grounds staff believe it would be impractical to fence the entire length. The APZ is generally located away from public access points and therefore unwanted public access through these areas is uncommon. ▪ The fire trail appeared to be in appropriate condition to allow access.
18.1	▪ As above	▪ The APZ boundary indicated in pink of Figure 4.1 of the BMP will be fenced to reduce public access into the bushland.	▪ Refer requirement 18.0
18.4.1	▪ As above	▪ Reduce multiple public access points into the E2 zone.	▪ Refer Requirement 18.0
18.4.4.	▪ As above	▪ The APZ boundary will be fenced to reduce mower creep.	▪ Refer Requirement 18.0
21.0	▪ 4.7 Maintenance: ▪ 4.7.1 Maintenance - 5 years ▪ ii. Revegetation Maintenance	▪ Revegetation Maintenance sites will require the following maintenance activities: ‣ replacement of plant stock ‣ supplementary mulching ‣ replaced tubestocks will be regularly watering during their establishment phase and during drier months ‣ spot spraying and hand weed revegetation sites.	▪ The grounds team manager reported that loss of tubestock is low and plantings are monitored regularly by grounds staff. Dead plants are replaced as required. The grounds team uses manually operated sprinklers (in STIF areas) and a 200L water cart and 90L ATU to water plantings. ▪ All areas of plantings had appropriate tree guards, stakes and relatively low death rates (<10%) at observed audit sites 7, 10 14. ▪ Records have not been kept detailing the replacement of plant stock, and supplementary mulching has not occurred in accordance with the BMP.
C21 21.1.2	▪ As above	▪ Keeping comprehensive records will provide information on the effectiveness of management practices.	▪ Supplementary mulching is only undertaken at the site to prevent erosion, as outlined in the annual reports. The grounds team manager reported that natural leaf litter provides sufficient mulch and the annual reports state that better results have been achieved for areas planted with seed and those allowed to naturally regenerate, where mulch has not been applied (e.g. page 17 of the 2013 annual report states 'The choice not to mulch has been the right one however, with many varieties of natural revegetation taking place'). ▪ Their evidence that in some areas of significant understory weed infestations mulch may have been a successful method.

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Condition reference	**Sub-criteria/ Indicator**	**Audit requirement**	**Summary of findings**
			For example audit sites 27, 18 and 19, however, compliance with this condition has not been met.
C 23 23.0,	▪ 4.8 Monitoring: ▪ 4.8.1 Monitoring by quadrats	▪ Qualified bushland management consultants will be utilised to undertake Monitoring by quadrats. Permanent 20 m x 20 m quadrats will be used for baseline and post-treatment monitoring. Information on site details, habitat features, disturbance and floristic composition in each area will be recorded onto data sheets. There will be a minimum of 1 quadrat per management zone, or 1 quadrat per 10 hectares, whichever is greater. These quadrats will be monitored every six months during weed control efforts and then on an annual basis in perpetuity.	▪ The annual Voluntary Management Plan (VMP) reports show that a regular program of monitoring has been undertaken across the site. ▪ Monitoring sites were inspected at audits sites 4, 10, 12 and 14. At each location sites are appropriately marked and fenced. Monitoring currently appears to be restricted to photo monitoring. No evidence of floristic sampling, structural composition or % percentage abundance of native vs weed species is provided however and therefore compliance with this requirement has not been met.
C 23 23.2	▪ As above	▪ Keeping comprehensive records will provide information on the effectiveness of management practices.	▪ The monitoring currently presented in the VMP progress report (2014) is restricted to photographic record. No evidence of floristic sampling, structural composition or % percentage abundance of native vs weed species is provided. Long term monitoring by photographic evidence is only limited in providing an understanding of effectiveness of management actions or if natural vegetation is improving or declining.
C 23 23.3.2	▪ As above	▪ Carry out program of regular monitoring to collect information on site details, habitat features, disturbance and floristic composition in each area will be recorded onto data sheets in accordance with the Wahroonga Estate BMP.	▪ Monitoring as presented in BMP annual reports provide no information on habitat features or floristic composition. No data sheets were sighted.
23.3.4	▪ As above	▪ These quadrats will be monitored every six months during weed control efforts and then on an annual basis in perpetuity.	▪ Refer to requirement 23.0. Monitoring is occurring every 12 months, not every six months after weeding
24.0	▪ 4.8 Monitoring:	▪ Monitoring revegetation area will be undertaken by qualified bushland	▪ No evidence of monitoring progress against the performance measures was found in the

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Condition reference	**Sub-criteria/ Indicator**	**Audit requirement**	**Summary of findings**
	▪ 4.8.2 Revegetation Area	management consultants. General observations of the nature and condition of revegetation Areas 1, 2, 3 and 4 will be taken during monitoring surveys, including: ▸ estimates of the success rate of plantings and assessment of plant replacement requirements ▸ evidence of erosion and sedimentation and the correct function of erosion control devices ▸ depth and condition of mulch ▸ recommendations for corrective measures and/or vegetation management. ▪ The performance indicators (Table 4.1) for revegetation works will be monitored.	annual BMP reports or elsewhere. Also refer to Requirement 23.0. ▪ Recommendation - ensure all monitoring requirements specified in the BMP are undertaken.
24.1.1	▪ As above	▪ Estimates of the success rate of plantings and assessment of plant replacement requirements shall be recorded and evidence maintained.	▪ Estimates of the success rate of plantings and assessment of plant replacement requirements are not being recorded or undertaken in accordance with the VMP.
24.1.2	▪ As Above	▪ Evidence of erosion and sedimentation and the correct function of erosion control devices shall be maintained	▪ Evidence is not being maintained in accordance with the VMP.
24.1.3	▪ As Above	▪ The depth and condition of mulch shall be recorded.	▪ The depth of mulch placed is not being recorded in accordance with the VMP.
24.1.4	▪ As above	▪ Recommendations for corrective measures and/or vegetation management shall be recorded	▪ Recommendations for corrective measures and vegetation management is not being made or recorded.
24.1.5	▪ As above	▪ Performance indicators for vegetation works shall be monitored as per table 4.1 of the BMP (*Structural Performance of re-vegetation).*	▪ Performance indicators are not being monitored.

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Condition reference	**Sub-criteria/ Indicator**	**Audit requirement**	**Summary of findings**
C 25 25.0	▪ 4.8 Monitoring: ▪ 4.8.3 Photo Monitoring	▪ Photo Monitoring will be undertaken by qualified bushland management consultants. Photo points will be selected in each management zone within areas that are representative of the vegetation in each zone. Photo monitoring will be undertaken every 6 months during weed control efforts. During the maintenance period, photo monitoring will be undertaken on an annual basis. A minimum of 1 photo point per management zone or 1 photo point per 5 hectares will be established, whichever is greater. Each photo point will be logged with GPS and once rehabilitation has commenced marked with a numbered peg.	▪ Photo monitoring has occurred but not every six months. At densities approximately in accordance with BMP.
25.2	▪ As above	▪ Monitor photo monitoring points every 6 months during weed control efforts.	▪ Refer to requirement 25
C 27.0	▪ 4.9 Documenting and Reporting:	▪ The VMP will be an adaptive plan of management that is continually updated. The consultant will be responsible for ensuring the measures outlined in this VMP are implemented and that performance criteria are satisfied. ▪ DEWHA require a report to be submitted every 12 months by the revegetation management consultant until the Minister is satisfied that the proponent has complied with all the conditions of approval. The progress reports will: ‣ state the findings of the monitoring activities ‣ discuss any problems encountered in	▪ The 2014 annual BMP report provides a range of findings and discussion on the successfulness or otherwise of management actions and stability of stream works. The findings of the monitoring activities are also presented however, only limited information of floristic abundance or quantitative weed cover is currently identified by the monitoring. This issue is covered by other approval requirements however

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		implementing the BMP ▸ comment on the stability of and condition of any associated stream works.	
27.3	■ As above	■ The consultant will be responsible for ensuring the measures outlined in the VMP are implemented.	■ Refer to comment 23.0 and 24.0. An annual BMP report is prepared by the Graham Wegener (Dip App Sci Ag) and Frances O'Brien (BEnv LLB). A covering letter is provided with each report providing a review against approval condition. ■ Several non-compliances were raised with regard to the implementation of the VMP and the consultant can therefore not be said to be discharging his responsibility effectively.
27.4	■ As above	■ The consultant will be responsible for ensuring that performance criteria are satisfied.	■ The Independent Auditor Comments at 23.0 above state that "Monitoring currently appears to be restricted to photo monitoring. No evidence of floristic sampling, structural composition or percentage abundance of native vs weed species is provided." Further 24.0 notes that "No evidence of monitoring progress against the performance measures was found in the annual BMP reports or elsewhere".
27.7	■ As above	■ Forward annual report to the Department of the Environment within three months of every 12 month anniversary of the commencement of the action taking place.	■ Compliance with this condition has not been met as the required reports were not submitted by 10 September of each relevant year and it appears the first report was one year overdue. Each requirement of the approval has not been addressed in these reports also.
Fire management plan			
17.1.4 Pile burning for disposal of vegetation material removed during APZ or SFMZ works.	■ 5.5 Fuel Management Zone: ■ 5.5.4 Strategic Fire Management Zones [SFMZ]	■ Pile burning for disposal of vegetation material removed during APZ or SFMZ works.	■ No pile burning has occurred on site
FMP C20 20.0	■ 5.6 Fire Management Strategies: ■ [Refer to Appendix F – Fuel Management Plan]. ■ 5.6.2 Asset Protection Zones	■ Management of the Inner Protection Area (IPA) in the asset protection zone shall comply with the following: ▸ maintain maximum fine fuel loading [leaves and twigs] at 3 tonnes/hectare	■ The Inner Protection Area has not been monitored against the requirements of this condition (i.e. vegetation clearances, fuel loads etc. have not been measured). Therefore compliance with this condition has not been met. The only fire maintenance works undertaken at the site have included clearing of the APZ and maintenance of fire trails. ■ The site audit inspected areas of the IPA and APZ within the E2 zone and it was observed to contain isolated scattered

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Condition reference	**Sub-criteria/ Indicator**	**Audit requirement**	**Summary of findings**
	▪ i. Inner Protection Area ▪ b. Performance Criteria – Inner Protection Area:	▸ maintain shrubs so that they are clear of the external glazing of the building by at least 5 metres ▸ prune low tree branches 2 metres from the ground to prevent a ground fire from spreading into the tree canopy ▸ avoid the use of flammable mulch in garden beds that adjoin the buildings ▸ maintain landscape gardens by removing dead and dying material ▸ retention of small clumps of trees is acceptable provided that they do not provide a continuous fire-path to the buildings ▸ separate tree crowns by at least 2 metres so that the canopy is not continuous and does not encroach closer than 5 metres from the buildings ▸ landscape species selection shall be drawn from those that are considered to be species which are “fire retardant” and do not promulgate the spread of fire.	canopy trees over managed lawn and understory and/or gardens. The IPA generally was observed to be in accordance with the BMP, however; no data on fuel loads was collected or sighted.
20.1.1	▪ As above	▪ Maintain maximum fine fuel loading [leaves and twigs] at 3 tonnes/hectare.	▪ The IPA generally was observed to be in accordance with the BMP, however; no data on fuel loads was collected or sighted.
21.0	▪ 5.6 Fire Management Strategies: ▪ [Refer to Appendix F – Fuel Management Plan]. ▪ 5.6.2 Asset Protection Zones	▪ The asset protection zone management program timing will be undertaken in accordance with Table 5.9 of the BMP.	▪ The Inner Protection Area has not been measured against the requirements of this condition (i.e. vegetation clearances, fuel loads etc. have not been measured). Therefore compliance with this condition has not been met. The only fire maintenance works undertaken at the site have included clearing of the APZ and maintenance of fire trails. ▪ The site audit inspected areas of the IPA and APZ within the E2 zone and it was

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Condition reference	**Sub-criteria/ Indicator**	**Audit requirement**	**Summary of findings**
	▪ ii. Management Program - Asset Protection Zones		observed to be managed in accordance with prescribed conditions in Table 5.9 B387
21.1	▪ As above	▪ The asset protection zone management program will be undertaken in accordance with Table 5.9 of the BMP, entitled "Timing of works within Inner Protection Zone Area".	▪ The Inner Protection Area has not been measured against the requirements of this condition (i.e. vegetation clearances, fuel loads etc. have not been measured). Therefore compliance with this condition has not been met. The only fire maintenance works undertaken at the site have included clearing of the APZ and maintenance of fire trails. ▪ The site audit inspected areas of the IPA and APZ within the E2 zone and it was observed to be managed in accordance with prescribed conditions in Table 5.9 B387
C23 23.0	▪ 5.6 Fire Management Strategies: ▪ [Refer to Appendix F – Fuel Management Plan]. ▪ 5.6.2 Asset Protection Zones ▪ iii. Outer Protection Area ▪ b. Performance Criteria – Outer Protection Area:	▪ The criterion that is required to maintain an Outer Protection Area within the asset protection zone includes: ▸ maintain maximum fine fuel loading [leaves and twigs] at 8 tonnes/hectare ▸ maintain a discontinuous mature tree canopy cover and shrub layer ▸ timing of maintenance works will be undertaken in accordance with Table 5.10 of the BMP.	▪ The Outer Protection Area has not been measured against the requirements of this condition (i.e. vegetation clearances, fuel loads etc. have not been measured). Therefore compliance with this condition has not been met. The only fire maintenance works undertaken at the site have included clearing of the APZ and maintenance of fire trails. ▪ The site audit inspected areas of the OPA and APZ within the E2 zone and it was observed to be managed generally in accordance with prescribed conditions in Table 5.10. Appendix F does not distinguish between the Inner and outer protection zones.
23.1.1	▪ As above	▪ Maintain maximum fine fuel loading [leaves and twigs] at 8 tonnes/hectare.	▪ The Outer Protection Area has not been measured against the requirements of this condition (i.e. vegetation clearances, fuel loads etc. have not been measured). Therefore compliance with this condition has not been met. The only fire maintenance works undertaken at the site have included clearing of the APZ and maintenance of fire trails. ▪ The site audit inspected areas of the OPA and APZ within the E2 zone and it was observed to be managed generally in accordance with prescribed conditions in Table 5.10. Appendix F does not distinguish between the Inner and outer protection zones.
23.1.2	▪ As above	▪ Maintain a discontinuous mature tree canopy cover and shrub layer.	▪ The Outer Protection Area has not been measured against the requirements of this condition (i.e. vegetation clearances, fuel loads etc. have not been measured). Therefore compliance with this condition

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Condition reference	**Sub-criteria/ Indicator**	**Audit requirement**	**Summary of findings**
			has not been met. The only fire maintenance works undertaken at the site have included clearing of the APZ and maintenance of fire trails. ■ The site audit inspected areas of the OPA and APZ within the E2 zone and it was observed to be managed generally in accordance with prescribed conditions in Table 5.10. Appendix F does not distinguish between the Inner and outer protection zones.
C26 26.5	■ 5.6 Fire Management Strategies: ■ 5.6.5 Access Roads, Fire Trails and Control Lines ■ [Refer to Appendix E – Plan of Tracks, Trails & Control Lines].	■ Maintain access tracks in accordance with Table 5.12 of the BMP and Inspect tracks annually in July/August and maintenance works implemented before the commencement of the prescribed Bushfire Danger Period – [1st October – 31st March or otherwise as determined].	■ All tracks inspected during the site audit were found to be maintained and in accordance with requirements of the BMP. All fire trails were installed and maintained prior to July and August (BMP 2012). No evidence of trails being inspected annually in July/August is provided in annual reports, however it is noted that weekly inspection by ground staff for maintenance occur.
C27 27.0, 27.1.1, 27.1.2, 27.1.3, 27.2	■ 5.6 Fire Management Strategies: ■ 5.6.6 Monitoring	■ The following ongoing monitoring shall be undertaken: ▸ establish sites to monitor fuel loadings in all Strategic Fire Management Zones and Heritage Management Zones ▸ in August, undertake annual inspection of the Asset Protection Zones Lot and the Strategic Fire Management Zone ▸ establish sites in each vegetation community to monitor the effect of implemented fire management regimes on biodiversity ▸ document the cause of unplanned fires and the effectiveness of the emergency response ▸ mapping of fire regime, both planned and unplanned wildfire is to be undertaken and kept up to date for annual fire management	■ Monitoring for fuel loadings has not been undertaken. Recommendation - undertake fuel load inspections across the site as required by the BMP and revised management of APZ and SFMZ and hazard reduction burns to meet changes in monitored fuel loads in accordance with FMP. ■ A review of monitoring results against the requirements of the BMP has not been undertaken, as fuel load monitoring has not been undertaken. ■ Recommendation - undertake a review of fuel load monitoring results against the BMP, when monitoring has been undertaken.

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Condition reference	**Sub-criteria/ Indicator**	**Audit requirement**	**Summary of findings**
		strategy implementation and burn cycle analysis. All elements of fire regime [intensity, frequency and seasonal occurrence] shall be recorded as well as species presence related to time since last burn. ■ Establish sites in each vegetation community to monitor the effect of implemented fire management regimes on biodiversity. ■ Undertake annual inspection of the Asset Protection Zones Lot and the Strategic Fire Management Zone in August. ■ Establish sites in each vegetation community to monitor the effect of implemented fire management regimes on biodiversity. ■ Examine results of the monitoring program against objectives of this Fire Management Plan. This will indicate whether management strategies have been effective in producing an ecologically based fire management programme for the vegetation within the site.	
Pest management plan			
C2 2.0	■ 6.4 Pest Species: ■ 6.4.2 Bird Species:	■ Pest Bird species management - actions that can be taken to minimise the impact of these species includes: ▸ prevent access to food in rubbish bins by modifying the design or by ensuring that a lid is attached and used ▸ avoid providing nectar resources within landscaping	■ No visible evidence of scattered rubbish was observed around bins provided within the areas inspected by the site audit, however lids are not provided on all bins. ■ Nectar producing resources were observed in adjoining properties surrounding the site however no new plantings of callistemon or grevillea species were observed during site audit.

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		such as Callistemon and hybrid Grevillea ▸ signage should be erected to inform the general public not to feed birds in or near the E2 zone.	
C2 2.2.3	▪ As above	▪ Erect signage to inform the general public not to feed birds in or near the E2 zone.	▪ While a range of signage was observed, no signs containing information on feeding the birds were found.
C5 5.2.1	▪ 6.4 Pest Species ▪ 6.4.5 Feral Cats	▪ Education regarding desexing pet cats.	▪ Pets are not allowed to be kept within the aged care facility, so this is generally not an issue. ACA is currently developing leaflets outlining issues with dispersal of pest species, this is to be provided to local residents through community newsletters for the site, local schools and residents of the aged care facility. However as leaflets have not yet been developed and pets are permitted in residential areas of the estate this is considered to be non-compliant
5.2.2	▪ As above	▪ Encouraging residents to keep cats indoors at night.	▪ refer to 5.2.1 Pets are not allowed to be kept at the aged care facility. Pets are currently permitted in the residential facility. ACA is currently developing leaflets outlining issues with dispersal of pest species, including cats, this is to be provided to local residents through community newsletters for the site, local schools and residents of the aged care facility. However as leaflets have not yet been developed and pets are permitted in residential areas of the estate this is considered to be non-compliant.
C7 7.0,7.1, 7.4, 7.5, 7.6, 7.7	▪ 6.5 Community Education:	▪ Community information - Information packs should be provided to all new residents and an ongoing campaign of community education will be actively promoted. Education and awareness programs on feral and domestic animal management should be implemented within the Wahroonga Estate in conjunction with other programs concerning flora and fauna and weeds. Residents should be educated about the risk to native fauna from stray dogs, and will be encouraged to report any stray dogs to the Council.	▪ A community information pack has not been developed and is not provided to residents of the aged care facility. Residents are not allowed to keep dogs or cats and hence the risks associated with their pets is minimal. Signage is installed around the site to inform visitors and users of the area about ecological issues.

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Condition reference	**Sub-criteria/ Indicator**	**Audit requirement**	**Summary of findings**
		Residents will be informed to keep their own dogs contained at all times and to avoid taking them off the leash while in or near the E2 zone. Residents will be informed to keep their cats indoors at night to avoid impacts from predation on native fauna. Educational programs concerning ecological issues in the E2 zone (including domestic and feral animals) will be made available as pamphlets and distributed during induction courses. ■ Information packs should be provided to all new residents. ■ Provide educational programs concerning ecological issues in the E2 zone (including domestic and feral animals) as pamphlets and distributed during induction courses.	
Habitat Corridor and Linkages Management Plan			
C3 3.0	■ 7.4 Management Objectives and Actions: ■ 7.4.1 Vegetation Retention	■ The Habitat Corridor and Linkages Management objectives and actions will be achieved through the following management actions: Retention of all native vegetation within the E2 zone. ■ Management of pests and weeds within the Coups Creek and Fox Valley Road corridors as prescribed in the pest and weed management plans for the subject land. ■ Bushfire management of APZ's adjacent to the Coups Creek and Fox Valley Road corridors within the subject land in accordance with the attached Fire. Management Plan. ■ Exclusion fencing along the boundaries of the	■ The site inspection of habitat corridors confirmed that Habitat Corridors and Linkages are being managed in accordance with the approved BMP and that the minimum width of both corridors are currently being retained in accordance with the BMP. Exclusion fencing was observed along the Fox Valley corridor. No fencing was observed along Coups Creek. ■ Recommendation - ensure fencing requirements specified in the BMP are met.

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Condition reference	**Sub-criteria/ Indicator**	**Audit requirement**	**Summary of findings**
		Coups Creek and Fox Valley Road corridors within the subject land. ▪ Vegetation within the two existing vegetated corridors on the subject land will be managed long-term through regular maintenance visits and monitoring which will manage weeds and promote biodiversity.	
C3 3.1.4	▪ As above	▪ Install exclusion fencing along the boundaries of the Coups Creek and Fox Valley Road corridors within the subject land.	▪ Exclusion fencing was observed along the Fox Valley corridor. No fencing was observed along Coups Creek. ▪ Recommendation - ensure fencing requirements specified in the BMP are met.
C5 5.0, 5.3	▪ 7.4 Management Objectives and Actions: ▪ 7.4.3 Pest Management	▪ Habitat Corridor and Linkages Pest Management -It is essential to educate the community of the potential impacts of feral and domestic animals and of their responsibilities to minimise these impacts. ▪ Educate the community of the potential impacts of feral and domestic animals and of their responsibilities to minimise these impacts.	▪ Refer to Requirements 7.0 of the PMP above. ▪ Recommendation – Develop a community education pack and implement and provide this to new residents. This education pack should also advise residents of the potential impacts of feral and domestic animals and of their responsibilities to minimise these impacts.
C7 7.0, 7.1	▪ 7.4 Management Objectives and Actions: ▪ 7.4.5 Fencing	▪ Habitat Corridor and Linkages fencing -The bushland within the E2 zone is proposed to be fenced to reduce public access and their associated impacts on native fauna. Fencing will be carried out so as not to impede fauna movements. ▪ Undertake fencing of bushland within the E2 zone to reduce public access and their associated impacts on native fauna.	▪ Exclusion fencing was observed within the E2 zone including both fencing and clearly demarcation bollard with signage, however no fencing was observed along the boundaries of Coups Creek corridor within the subject land. Fencing included fauna friendly design and will not impact on fauna movement.
Hydrology and Nutrient Management Plan			
C2 2.0 and	▪ 8.3 Management Strategy	▪ Install a dispersal trench when the soil and geotechnical conditions are suitable to disperse	▪ The Stormwater Management Plan and Construction Environmental Management Plans for developments adjacent to the bushland areas do not specify any form of

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Condition reference	**Sub-criteria/ Indicator**	**Audit requirement**	**Summary of findings**
2.1.1	▪ 8.3.2 Management of Stormwater Discharges	all stormwater runoff entering the bushland sufficiently so as not to cause downstream erosion or scour.	scour protraction or flow dissipation where stormwater is to be released. ▪ Based on the information reviewed for the audit and audit site inspection, several issues have been identified with stormwater discharge from areas ultimately under ACA's control. These include construction areas and previously developed areas at and near the SAN hospital. Issues with hydrology for the site are outlined in Chapter 7 of the 2014 BMP report. The issues noted in the report include: a pollution incident from a construction area (5 June 2014) (resolved) and stormwater discharge from the SAN hospital into the site at two locations (unresolved) is causing erosion and minor scouring. The bushland team reported that they are working with the managers of the SAN site towards resolving this issue. The work required includes installation of a swale drain at one site and extending a discharge pipe at the other site to remove scour issues. No issues with erosion or scour have occurred for stormwater discharged under ACA's control. ▪ Recommendation - ensure any site management plans for areas adjacent to the site incorporate any relevant requirements from the BMP (e.g. scour protection).
C10 10.2	▪ 8.3.4 Non-structural Stormwater Management Measures: ▪ Non-structural stormwater management measures mainly include: i. Development Assessment & Control	Enforce proposed management strategy elements, especially the structural stormwater management measures on developments within the Wahroonga Estate site is the cornerstone of implementing this proposed strategy.	▪ Publicly available development consents were reviewed that were applicable to developments of adjacent sites (i.e. Wahroonga Adventist School and SAN Hospital additions). No Council approvals were made available to the auditor for review. Neither of the state level approvals refer to the BMP, the Stormwater Management Plan (Hyder 2009) or the specific requirements for WSUD of the BMP. The approvals do refer to KMC's water sensitive design DCP, the Blue Book and another Stormwater Management Plan (assumed to be more site specific). ▪ It is noted that it is not in ACA's powers to make approval authorities implement development approval conditions. ▪ Recommendation - The BMP should be revised to remove any requirements that are outside the remit of ACA.
C11 11.2.1	▪ 8.3.4 Non-structural Stormwater Management Measures: ▸ Non-structural stormwater management	▪ Educate the community living and working in the Wahroonga Estate development site through specific programs such as drain stencilling, stormwater education campaigns, involving local schools	▪ The bushland team provide community newsletters to local residents on a regular basis. The June 2015 Newsletter was sighted raising various issues covered by the BMP, such as pet control issues, feeding native wildlife, pollution of local waterways, weed control and rubbish dumping.

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Condition reference	**Sub-criteria/ Indicator**	**Audit requirement**	**Summary of findings**
	measures mainly include: – Community Education and Participation	and residents in the management and monitoring of the local bushland and streams.	■ No specific community education programs such as drain stencilling, stormwater education campaigns, involving local schools.

3.3 Summary of audit observations

A number of observations were made during the audit regarding site environmental management practices. These observations were determined to not affect the ACA's compliance against the agreed audit protocol (refer to Section 2.1), however recommendations have been provided where it was observed that site processes could be improved (i.e. process of continual improvement).

Table 3.2 provides a summary of observations made during the audit.

Table 3.2 Summary of observations

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Condition reference	**Sub-criteria/ Indicator**	**Audit requirement**	**Summary of findings**
1.2.3	■ Watercourses	■ Are watercourses located as defined in the plan?	■ Watercourses are not mapped in the BMP, although they are mapped in the annual BMP reports produced by the Grounds and Bush Department of the Seventh-day Adventist Aged Care group (SAAC). ■ Watercourses were observed to be in average condition with evidence of erosion and stormwater. However significant restoration works were observed to be progressing including erosion control devices replanting and weed control.
1.2.4	■ Detention basins	■ Are detention basins located as defined in the plan?	■ Detention basins are not discernible on the copy of the Concept Plan provided with the EPBC referral due to it being a low resolution, black and white copy. Other copies of the plan available from the NSW Department of Planning and Environment show three detention basins at the site, all of which appear to be located as mapped. ■ Detention basins are not mapped in the BMP or maps used by staff to manage the site, or on the annual BMP reports. ■ The site audit observed a detention basin in the Riparian management zone to be in good condition and appeared to be suitable for the BMP.
1.3	■ Have any inconsistencies between the final Wahroonga Estate	■ Are there any inconsistencies between final Wahroonga Development Concept Plan and the conditions of approval?	■ A number of inconsistencies were noted during the audit between the requirements of the BMP and on-site activities. These include requirements in the BMP for sanitisation of equipment to control fungus disease (not fully implemented as no soil borne phytophthora has

EPBC Approval			
Condition reference	**Sub-criteria/ Indicator**	**Audit requirement**	**Summary of findings**
	Development Concept Plan (Annexure 1) and the conditions of this approval been identified?		ever occurred), controlled burns (not undertaken due to lack of support from fire authorities), requirements for education of aged care residents about domestic pet control (not implemented as residents are not allowed pets) etc.
1.4	▪ As above	▪ If there are any inconsistencies, has the approval overridden the plan?	▪ The inconsistencies between the BMP and on-site activities are considered to be generally administrative and are unlikely to pose risk of substantial harm to the environment. The inconsistencies should be rectified as soon as possible however.
2.1.a)	▪ Biodiversity Management Plan with clear objectives, performance criteria and targets, which must include but not be limited to:	▪ Biodiversity Management Plan has been prepared with clear objectives, performance criteria and targets, which must include but not be limited to:	▪ A BMP was developed by Cumberland Ecology in November 2010. It is inconsistent with a number of practices undertaken on-site and needs to be updated.
2.1.a)(iii)	▸ Hydrology and nutrient management	▸ Hydrology and nutrient management. Does the hydrology and nutrient management section of the BMP include the details required under the approval?	▪ Section 8 of the BMP outlines hydrology and nutrient management requirements. The audit found that hydrology and nutrient management is a focus of bush regeneration activities. Some of the measures recommended for nutrient control in the BMP have not been implemented on-site, such as gross pollutant traps, detention basins and other Water Sensitive Urban Design measures. These measures may be appropriate for areas outside the site and ACA has approached KMC about installing gross pollutant traps in upstream areas (this request has been declined). However, these measures are not appropriate for the site.
2.4.b (ii) and	▸ Identify areas that will be managed as asset protections zones.	▸ Does the Conservation Interface Management Plan identify areas that will be managed as Asset Protection Zones?	▪ The BMP includes measures for managing asset protection zones, but does not define these. Figure 4.1 of the plan shows the 'extent of managed APZ', but the actual area is not discernible on the figure (only the boundaries facing Fox Valley Road are shown. The BMP text does not make specific reference to where asset protection zones are located. ▪ A separate 'Vegetation Zone Map' maintained by ACA clearly marks asset protection zones.
Biodiversity Management Plan (BMP)			
Vegetation Management Plan (VMP)			
C4 4.24	▪ 4.4.1 Riparian Management Zone ii. Revegetation	Carry out blanketing of imported mulch 100m thick after areas are ripped in accordance with the Wahroonga Estate BMP.	▪ Mulching has not been undertaken as these areas have not been ripped and a 'self mulching effect' has occurred through the use of herbicide, which has seen dead grass build up in areas which would have been

EPBC Approval			
Condition reference	**Sub-criteria/ Indicator**	**Audit requirement**	**Summary of findings**
			mulched (refer to page 19 of 2012 BMP report).
Hydrology and nutrient management plan			
C9 9.0	▪ 8.3 Management Strategy ▪ 8.3.3 Water Sensitive Urban Design Measures	▪ "The following WSUD measures can be utilised for hydrological and nutrient management within the Wahroonga Estate site: Porous paving. The following issues should be considered to ensure the sustainability and longevity of porous paving systems: ‣ geotechnical advice should be obtained and testing carried out where infiltration devices are proposed ‣ permeable pavement should not be placed downstream of sediment sources, unless pre-filtering devices are installed ‣ care should be taken in the establishment of vegetation and planting density; expert advice should be sought.	▪ Porous paving is not referred to in the Stormwater Management Plan developed for adjacent developments. Given the range of other WSUD mechanisms referred to and the consideration of KMC's development control plans in this document, and the lack of any issues with water coming from adjacent developed areas under ACA's control this is not considered to be a key issue. Some areas of scour associated with stormwater discharge from the SAN hospital site have been identified. The bushland team reported that they are working with the managers of the SAN site towards resolving this issue. The work required includes installation of a swale drain at one site and extending a discharge pipe at the other site to remove scour issues. No issues with erosion or scour have occurred for stormwater discharged under ACA's control.

3.4 Recommendations

Based on the findings of the audit, the following recommendations are made in order to address compliance issues:

- The BMP should be revised to consider current site practices and conditions. Once this is done, the BMP should be provided to the Department of the Environment for review and approval. Any changes to the BMP should be done in consultation with the Department.
- The BMP should define the ‘vegetation transition management area’ and any associated management requirements.
- The BMP vegetation mapping should be used by the grounds team to direct management of the site. Separate mapping should not be used. If the mapping included in the BMP is not accurate, it should be updated.
- Ensure the seed collection and propagation requirements of the BMP are adhered to and that rehabilitation of the site (particularly STIF areas) is undertaken with plants grown from seed collected on site as a priority.
- Ensure all plants planted on-site meet the planting requirements of the BMP (i.e. Appendix C2).

- Review the availability of 'certified weed free mulch' and use this if available. If not remove this requirement from the BMP.
- Review the requirements for phytophthora control and amend the BMP if these are not appropriate for the site.
- Ensure site monitoring activities include all requirements of the BMP, such as floristics and planting survival rates.
- Undertake an assessment of plantings that have been undertaken across the site against the requirements of the BMP (i.e. Appendix C2), correct any inconsistencies or deficiencies with in-fill planting if required to meet the BMP requirements.
- Review the fencing requirements of the BMP and address any deficiencies or remove fencing requirements if they are inappropriate.
- Review requirements for management of the inner and outer protection zone in the BMP against site conditions and undertake maintenance works as required.
- Undertake fuel load inspections across the site as required by the BMP.
- Install signage informing the general public not to feed the birds within the E2 zone.
- Ensure any site management plans developed for areas adjacent to the site (e.g. SAN hospital) incorporate any relevant requirements from the BMP (e.g. scour protection).
- Water management requirements described in the BMP for developments and areas outside the site, should be reflective of the proponent's ability to implement such requirements and should consider relevant development guidelines for the area, such as Ku-ring-gai Municipal Council's (KMC) Development Control Plans (DCP).

3.5 Conclusions

Based on the review of available documentation and observations made during the audit, it was found that ACA is generally operating in compliance with the BMP and EPBC approval requirements. A number of non-compliances with the BMP were noted however; many of which are considered to be due to the lack of revision of the BMP since it was developed.

Some additional non-compliance also occurred as a result of the proponent not implementing what is required under the current BMP. In particular, ACA should review their current monitoring practices in accordance with the BMP, along with implementing improvements in record keeping of the type and location of revegetation planting works.

The BMP should be reviewed in light of current site conditions and practices best suited to the site. Some requirements of the BMP have not been addressed due to matters outside ACA's control. This includes prescribed back burning, which has not been undertaken at the site due to the unavailability of NSW Fire and Rescue and minimal opportunities under the suitable environmental conditions.

It was noted that the grounds team has deviated from the vegetation mapping developed for the BMP and has developed its own mapping. This changes the implementation of the BMP and needs to be reviewed in consultation with the Department of the Environment.

ACA has undertaken numerous rehabilitation works across the site and has developed an extensive and effective community engagement program, which sees a wide range of groups visit the site and assist with its maintenance. However additional community engagement and education targeted at the specific requirements of the BMP is required.

The issues identified through the audit are considered to be unlikely to contribute to a risk of off-site harm to the environment or communities outside the site, or contribute to significant degradation of the site. The

issues raised in this audit should be addressed by ACA, in consultation with the Department of the Environment.

4. Limitations

In reading this report, is should be noted:

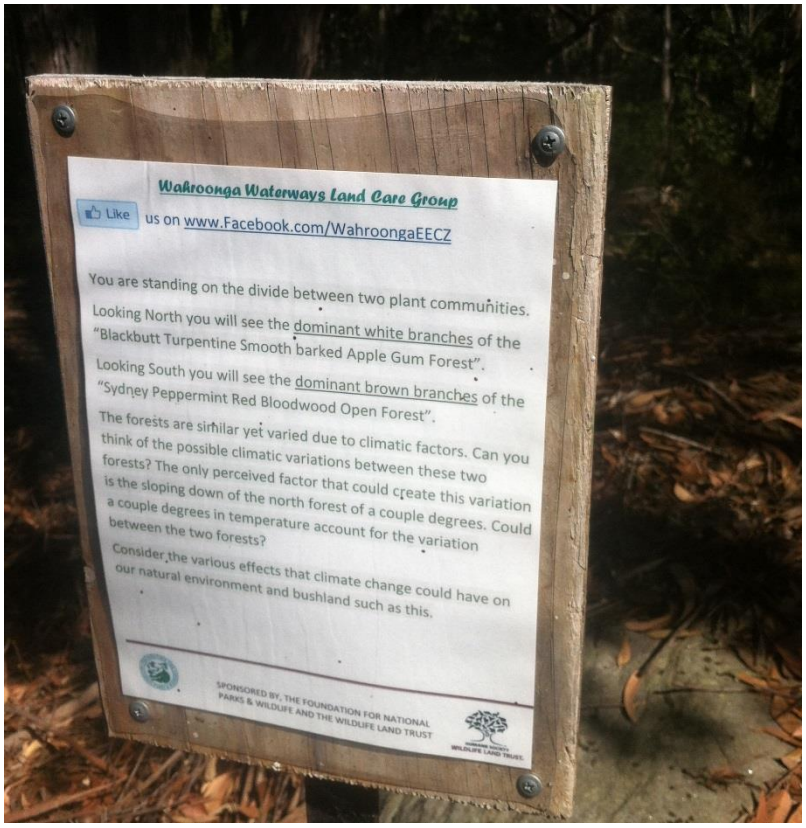
- The Auditor (Steven Crick) is a certified Lead Auditor in the Environmental Scheme by Exemplar Global (Certificate No: 12453).
- WSP | Parsons Brinckerhoff has prepared this audit report as required by Condition 5 of the Wahroonga Estate Project Approval (2008/4460) granted under the *Environment Protection and Biodiversity Conservation Act 1999* and specific requirements of the Department of the Environment provided prior to the audit.
- This report has been developed from certain information provided by ACA (the Auditee) at the request of and exclusively for the use and benefit of the Auditee.
- This report has been prepared in accordance with the scope of work/services set out in a contract, or as otherwise agreed, between the Auditor and the Auditee. In preparing this report, the Auditor has relied upon data, surveys, analyses, designs, plans and other information provided by the Auditee and other individuals and organisations, most of whom are referred to in the report (the data). Except as otherwise stated in the report, the Auditor has not verified the accuracy or completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in this report (conclusions) are based in whole or part on the data, those conclusions are contingent upon the accuracy and completeness of the data. The Auditor will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to the Auditor.
- The Auditor assumes no responsibility and will not be liable to any other person or organisation for, or in relation to any matter dealt with in this report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in this report (including, without limitation, matters arising from any negligent act or omission of the Auditor or for any loss or damage suffered by any other party relying upon the matters dealt with or conclusions expressed in this report). Other parties should not rely upon the report or the accuracy or completeness of any conclusions and should make their own inquiries and obtain independent advice in relation to such matters.
- The Audit has examined the Auditee's compliance with the EPBC Approval and site BMP for the period from 18 June 2010 to 17 September 2015. The Auditor has relied on information provided by the Auditee. The Auditor expresses no opinion as to the accuracy, truth, sufficiency or legality of the information provided by the Auditee in respect of the Auditee's compliance standards.
- This Report has been prepared in accordance with generally accepted practices (including the standards set out in *ISO AS/NZS 19011:2014 Guidelines for auditing management systems* using standards of care and diligence normally practiced by recognised consulting firms performing services of a similar nature.
- To the best of the Auditor's knowledge, the facts and matters described in this report reasonably represent the conditions at the time of printing of the report. However, the passage of time, the manifestation of latent conditions or the impact of future events (including a change in applicable law) may have resulted in a variation to the conditions. The Auditor will not be liable to update or revise the report to take into account any events or emergent circumstances or facts occurring or becoming apparent after the date of the report.
- This Report is issued with the understanding that it is the responsibility of the Auditee to ensure that the information contained herein is brought to the attention of the appropriate regulatory agencies, where required by law.
- Neither the Auditor nor any member, associate or employee of WSP | Parsons Brinckerhoff undertakes any responsibility for any injury, loss or damage claimed by the Auditee arising out of a claim by any third party against the Auditee in connection with this Report.

Appendix A

Site photographs

A1. Audit photographs

Photograph 1 – Propagation nursery used by the grounds team



Photograph 2 – Educational signage within the site, indicating vegetation communities

Photograph 3 – Audit site 6 Coups Creek rehabilitation site showing Primary weeding complete stream restoration and plantings

Photograph 4 – Revegetation Area 1 showing planting, primary weed removal and erosion control

Photograph 5 – Progressive primary weed removal in Revegetation Area 2

Photograph 6 – Audit Site 17 exotic/weed encroachment in Northern Management zone area

Photograph 7 – Fencing of areas near ACA headquarters

Photograph 8 – Educational signage in STIF area

Appendix B

Audit checklists

Indicator	Independent Auditor Comments	Measures made	Requirement	Verification Method	Compliance Finding
Condition 1	**The person taking the action must carry out the action in accordance with the final Wahroonga Estate Development Consent Plan *(Annexure 1)* as per the Final Preferred Project Report dated 22 January 2010 and the conditions of this approval. In the event of any inconsistencies, the conditions of this approval prevail to the extent of the inconsistency.**				
1.1 The person taking the action must carry out the action in accordance with the final Wahroonga Estate Development Consent Plan (originally Annexure 1 to the EPBC approval and now in accordance with a subsequent variation notice which varied the Annexure, dated 25 November 2010).	Development of the overall site as shown in Annexure 1 has been limited to the following: - Hospital extension and carpark (built) - Medical research facility (built) - School (building to commence in late 2015) Planning is currently underway for development of the following: - Doctors suites at Fox Valley road/Commenarra Pkwy intersection (DA refused by Council, currently under review by Regional Planning Committee) - Additional Independent Living Units at the retirement village (currently in planning) - Development adjacent to new school area (to the north) (currently in planning) Approval was refused for the following: - Hospital staff residential buildings All built development appeared to have been constructed as shown on the Wahroonga Estate Development Consent Plan	Site inspection Interviews with key staff (Property Manager, Grounds Manager)	Carry out action in accordance with final Wahroonga Estate Development Consent Plan.	On-site: undertaking site inspection of Wahroonga Estate. Off-site: reviewing of the Wahroonga Estate Development Concept Plan (Annexure 1) as varied on 25 November 2010 to check that the current site conforms with & incorporates each of the key elements as identified in Annexure 1.	Y
1.2 This includes but is not limited to each of the key elements/areas as identified on the Plan:	NA	NA	As above	On-site: undertaking site inspection of Wahroonga Estate. Off-site: reviewing of the final Wahroonga Estate Development Consent Plan to check that the current site conforms within and incorporates the elements listed below.	NA
1.2.1 Vegetation transition management area	Transitional management area' is not mentioned anywhere within the BMP or identified in any Figures associated with the BMP. It is unclear on if this is a reference to all management areas within the E2 zoning under the BMP. Compliance with this condition was not demonstrated because the plan did not show the Transitional management area.	Field inspections, review of available documents	Has the vegetation transition management area been effectively established and is it being managed adequately?	On-site: undertaking site inspection of vegetation transition management area. Off-site: reviewing of the final Wahroonga Estate Development Consent Plan to check that the current site conforms within and incorporates elements from the plan.	N

Indicator	Independent Auditor Comments	Measures made	Requirement	Verification Method	Compliance Finding
1.2.2 Site Boundary	There appeared to be some inconsistencies between the areas identified in the BMP including revegetation Area 2 and 3 and the on ground works. There is also some discrepancies between the Figure 3.1 weed zones and 4.1 management areas and the E2 zone boundary. No issues with boundary encroachment were noted. Boundary management measures are described in the Biodiversity Management Plan (BMP).	Field inspections, review of available documents	Is the site boundary established as required? Does the mapped boundary correlate to the boundary defined on the ground?	On-site: undertaking site inspection of site boundary. Off-site: reviewing of the final Wahroonga Estate Development Consent Plan to check that the current site conforms within and incorporates elements from the plan.	N
1.2.3 Watercourses	Watercourses are not mapped in the BMP, although are mapped in the annual BMP reports produced by the Grounds and Bush Department of the Seventh-day Adventist Aged Care group (SAAC). Watercourses were observed to be in average condition with evidence of erosion and stormwater. However significant restoration works were observed to be progressing including erosion control devices replanting and weed control	Field inspections, review of available documents	Are water courses located as defined in the plan?	On-site: undertaking site inspection of watercourses. Off-site: reviewing of the final Wahroonga Estate Development Consent Plan to check that the current site conforms within and incorporates elements from the plan.	O
1.2.4 Detention basins	Detention basis are not discernible on the copy of the Concept Plan provided with the EPBC referral due to it being a low resolution, black and white copy. Other copies of the plan available from the NSW Department of Planning and Environment show three detention basis at the site, all of which appear to be located as mapped. Detention basins are not mapped in the BMP or maps used by staff to manage the site, or on the annual BMP reports. The site audit observed a detention basin in the Riparian management zone to be in good condition and appeared to be suitable for the BMP.	Field inspections, review of available documents	Are detention basins located as defined in the plan?	On-site: undertaking site inspection of detention basins. Off-site: reviewing of the final Wahroonga Estate Development Consent Plan to check that the current site conforms within and incorporates elements from the plan.	O
1.2.5 Existing vegetation	The site audit identified that the majority of the sites inspected correlated with the identified broad vegetation classification used within the BMP. However the grounds team have developed a refined vegetation map for the site that further plants the broad vegetation classification into sub communities. While the refined classification is acceptable for the splitting of the riparian and SSGF communities the revised mapping has reclassified the areas of STIF and BGHF. This reclassification is not consistent within the detailed ecological assessment and commonwealth approval and can not be supported.	Field inspections, review of available documents	Do existing vegetation areas match those defined in the plan?	On-site: undertaking site inspection of existing vegetation. Off-site: reviewing of the final Wahroonga Estate Development Consent Plan to check that the current site conforms within and incorporates elements from the plan.	N

Indicator	Independent Auditor Comments	Measures made	Requirement	Verification Method	Compliance Finding
1.2.6 Existing vegetation managed	The sites vegetation management is generally being undertaken in accordance with the BMP. Primary weeding activities were observed in the majority of audit sites where required across all Weed class 1 and 2 categories. Partial Primary weeding had commenced in a number of class 3 areas and some class 4 areas.	Field inspections, review of available documents	Are existing vegetation areas being managed as required by the plan?	On-site: undertaking site inspection of existing vegetation managed. Off-site: reviewing of the final Wahroonga Estate Development Consent Plan to check that the current site conforms within and incorporates elements from the plan.	Y
1.2.7 Proposed tree planting	Progressive revegetation works were identified by the audit site inspection within weed areas mapped in figure 3.1 of the BMP, 8, 6, 7, 10, 12 and 13. No obvious application of mulch was observed, however planting included a selection of species from both understorey and shrub and canopy layers. Planting densities appeared to be approximate and at spacing identified in BMP. ACA reported that Revegetation Area 4 had been hydroseeded with Dichondra repens, Indigofera australis, Themeda australis and Melaleuca decora. It was also found that Area 3 had been plated with a diverse range of canopy and shrub species and Area 21 had been sown with Native Mint. The site inspection found that diversity of species in the understorey of Area 1 is largely limited to Lomandra longifolia and planting of additional species may be required to meet floristics requirements for SSGF in accordance with the BMP. It is noted that none of the species identified in the BMP as dominant species in SSGF understorey were observed in planted areas. Species observed in planting and listed in Table C.2 include Tristaniopsis laurina, Omalanthus populifolius Lomandra lonfifolia. Planting details are listed in Appendix C of the BMP, but this was not included in the copy of the BMP provided for the audit. Planting/revegetation activities undertaken at the site are described in detail in each BMP report. This includes some description of how the plantings required under the BMP have been worked to, and where some differences have occurred. **The BMP is clearly out of date in regards to some requirements and needs to be updated**. Plantings described in the BMP are not followed exactly due to differences in on-ground conditions and inaccuracy of mapping (in the BMP).	Field inspections, review of available documents	Has tree planting been undertaken as defined in the plan?	On-site: undertaking site inspection of proposed tree planting areas. Off-site: reviewing of the final Wahroonga Estate Development Consent Plan to check that the current site conforms with and incorporates elements from the plan.	N

Indicator	Independent Auditor Comments	Measures made	Requirement	Verification Method	Compliance Finding
1.2.8 Residential	No development of residential areas appears to have occurred since the plan was approved. All planned developments in this area appear to match the plan.	Field inspections, review of available documents	Do residential areas defined in the plan match those on the ground? Are there any new developments?	On-site: undertaking site inspection of residential. Off-site: reviewing of the final Wahroonga Estate Development Consent Plan to check that the current site conforms with and incorporates elements from the plan.	Y
1.2.9 Seniors living	No development of senior living areas appears to have occurred since the plan was approved. All planned developments in this area appear to match the plan.	Field inspections, review of available documents	Do senior living areas match those defined in the plan?	On-site: undertaking site inspection of seniors living. Off-site: reviewing of the final Wahroonga Estate Development Consent Plan to check that the current site conforms with and incorporates elements from the plan.	Y
1.2.10 Educational	No development of educational areas appears to have occurred since the plan was approved. No development is anticipated in these areas.	Field inspections, review of available documents	Do educational facilities match those defined in the plan?	On-site: undertaking site inspection of education. Off-site: reviewing of the final Wahroonga Estate Development Consent Plan to check that the current site conforms with and incorporates elements from the plan.	NA
1.2.11 Place of public worship	No development of place of public worship have occurred since the plan was approved. No development is anticipated in these areas.	Field inspections, review of available documents	Do places of public worship match those defined in the plan?	On-site: undertaking site inspection of public worship places. Off-site: reviewing of the final Wahroonga Estate Development Consent Plan to check that the current site conforms within and incorporates elements from the plan.	NA
1.2.12 Mixed use	No development of mixed use areas appears to have occurred since the plan was approved. All planned developments in these areas appear to match the plan.	Field inspections, review of available documents	Are mixed use areas defined in the plan relative to those on the ground?	On-site: undertaking site inspection of mixed use areas. Off-site: reviewing of the final Wahroonga Estate Development Consent Plan to check that the current site conforms within and incorporates elements from the plan.	Y

Indicator	Independent Auditor Comments	Measures made	Requirement	Verification Method	Compliance Finding
1.2.13 Hospital and hospital related	Development within the hospital and medical research facility areas appears to match the plan. No further developments are anticipated for these areas.	Field inspections, review of available documents	Do hospital and associated facilities defined in the plan match those on the ground?	On-site: undertaking site inspection of hospitals and hospital related areas. Off-site: reviewing of the final Wahroonga Estate Development Consent Plan to check that the current site conforms within and incorporates elements from the plan.	Y
1.2.14 Commercial	No development has occurred within the commercial areas. Development planned for this area (Doctors Suites) appears to match the plan.	Field inspections, review of available documents	Do commercial areas match those defined in the plan?	On-site: undertaking site inspection of commercial areas. Off-site: reviewing of the final Wahroonga Estate Development Consent Plan to check that the current site conforms within and incorporates elements from the plan.	Y
1.2.15 Existing building envelopes	Building envelopes are defined horizontally (plan view) on the plan - all development (actual and planned) appears to meet the requirements of the plan.	Field inspections, review of available documents	Do existing building envelopes meet the requirements or definitions of the plan?	On-site: undertaking site inspection of existing building envelopes. Off-site: reviewing of the final Wahroonga Estate Development Consent Plan to check that the current site conforms within and incorporates elements from the plan.	Y
1.3 Have any inconsistencies between the final Wahroonga Estate Development Concept Plan (Annexure 1) and the conditions of this approval been identified? ***For example, the requirements of conditions 1 and 2; noting that the Annexure associated with condition 1 and the approved BMP required by condition 2 may have the potential to be out of sync with each other.***	The BMP appears to have not been revised since 2010. A number of inconsistencies were noted during the audit between the requirements of the BMP and on-site activities. These include requirements in the BMP for sanitisation of equipment to control fungus disease (not fully implemented as no soil borne phytophthora has ever occurred), controlled burns (not undertaken due to lack of support from fire authorities), requirements for education of aged care residents about domestic pet control (not implemented as residents are not allowed pets) etc.	Staff interviews, review of available documents	Are there any inconsistencies between final Wahroonga Development Concept Plan and the conditions of approval?	On- site: undertaking site inspection of Wahroonga Estate. Off-site reviewing of the final Wahroonga Estate Development Consent Plan to check if there are any inconsistencies.	O
1.4 If inconsistencies have been identified, do the conditions of this approval prevail to the extent of the inconsistency?	The inconsistencies between the BMP and on-site activities are considered to be generally administrative and are unlikely to pose risk of substantial harm to the environment. The inconsistencies should be rectified as soon as possible however.	Staff interviews, review of available documents	If there are any inconsistencies, has the approval overridden the plan?	Off-site reviewing of the final Wahroonga Estate Development Consent Plan to check if there are any inconsistencies. If inconsistencies are found prevalence of the inconsistencies will be discussed with the proponent and Department.	O

Indicator	Independent Auditor Comments	Measures made	Requirement	Verification Method	Compliance Finding
Condition 2	**In order to minimise potential impacts on EPBC listed threatened species and ecological communities and listed migratory species, prior to any works commencing and in accordance with the statement of commitments and the NSW Director General's Assessment Report (March 2010), the person taking the action must develop a:** **(a) Biodiversity Management Plan with clear objectives, performance criteria and targets, which must include but not be limited to:** **(i) vegetation management;** **(ii) pest and weed management;** **(iii) hydrology and nutrient management;** **(iv) habitat corridor and linkages management;** **(v) bushfire management;** **(vi) measures for long term management of the conservation lands on-site, including but not limited to:** **- clear agreement as to ownership and responsibility of long term management and monitoring of E2 Environmental Conservation zones on-site *(Annexure 2)* ;** **- a financial commitment to be approved by the department for the long term management of the E2 Environmental Conservation zones on-site.** **(b) Conservation Interface Management Plan with clear objectives, performance criteria and targets, which must address, but not be limited to:** **(i) measures to protect and manage Turpentine-Ironbark Forest of the Sydney basin Bioregion located in the E2 Environmental Conservation zones from indirect impacts, public access recreational use and edge effects;** **(ii) identify areas that will be managed as asset protection zones.** **The final versions of these plans must be submitted to the Minister for approval at least 3 months prior to any works commencing. The approved plans must be implemented.**				
2.1. In order to minimise potential impacts on EPBC listed threatened species and ecological communities and listed migratory species, prior to any works commencing and in accordance with the statement of commitments and the NSW Director General's Assessment Report (March 2010), the person taking the action must develop a:	NA	NA	The below documents have been prepared prior to any works commencing and in accordance with the statement of commitments and the NSW Director General's Assessment Report to minimise potential impacts on EPBC Act listed threatened biodiversity. Do these documents match the requirements of relevant documents?	Off-site: reviewing of Biodiversity Management Plan for consistencies with the statements of commitments and NSW Director General's Assessment Report.	NA
2.1.a) Biodiversity Management Plan with clear objectives, performance criteria and targets, which must include but not be limited to:	A BMP was developed by Cumberland Ecology November 2010). It is inconsistent with a number of practices undertaken on-site.	Review of BMP, staff interviews, field inspections	Biodiversity Management Plan has been prepared with clear objectives, performance criteria and targets, which must include but not be limited to:	Off-site: reviewing of Biodiversity Management Plan for evidence of clear objectives, performance criteria and targets which include the following:	O

Indicator	Independent Auditor Comments	Measures made	Requirement	Verification Method	Compliance Finding
2.1.a)(i) vegetation management;	Sections 4 of the BMP contains a Vegetation Management Plan. The sites vegetation management is generally being undertaken in accordance with the BMP. Primary weeding activities were observed in the majority of audits sites where required across all Weed class 1 and 2 categories.	Review of BMP, staff interviews, field inspections	Does the vegetation management section of the BMP include the details required under the approval?	On-site: undertaking site inspection of vegetation within the Wahroonga Estate and completion of 20 X 20m BioBanking quadrats, where appropriate and conduct interviews with appropriate person(s) responsible for vegetation maintenance. Off-site: reviewing of monitoring reports and Biodiversity Management Plan for evidence of compliance.	Y
2.1.a)(ii) pest and weed management;	Section 3 of the BMP provides measures for weed management, Section 7 covers pest management. The sites pest and weed management is generally being undertaken in accordance with the BMP. Primary weeding activities were observed in the majority of audits sites where required across all Weed class 1 and 2 categories	Review of BMP, staff interviews, field inspections	Does the pest and weed management section of the BMP include the details required under the approval?	On-site: undertaking site inspection of Wahroonga Estate and pest management areas. Undertake interviews with appropriate person(s) responsible for pest management. Off-site reviewing of Biodiversity Management Plan and monitoring reports for evidence of compliance.	Y
2.1.a)(iii) hydrology and nutrient management;	Section 8 of the BMP outlines hydrology and nutrient management requirements. The audit found that hydrology and nutrient management is a focus of bush regeneration activities. Some of the measures recommended for nutrient control in the BMP have not been implemented on-site, such as gross pollutant traps, detention basins and other Water Sensitive Urban Design measures. These measures may be appropriate for areas outside the site and ACA has approached KMC about installing gross pollutant traps in upstream areas (this request has been declined). However, these measures are not appropriate for the site.	Review of BMP, staff interviews, field inspections	Hydrology and nutrient management. Does the hydrology and nutrient management section of the BMP include the details required under the approval?	On-site: undertaking site inspection of Wahroonga Estate i.e. waterbodies. Undertake interviews with appropriate person(s) responsible for water management. Off-site reviewing of Biodiversity Management Plan and monitoring reports for evidence of compliance.	O
2.1.a)(iv) habitat corridor and linkages management;	Section 7 of the BMP outlines habitat corridor and linkage management requirements. The site inspection of habitat corridors confirmed that Habitat Corridors and Linkages are being managed in accordance with the approved BMP.	Review of BMP, staff interviews, field inspections	Habitat corridor and linkages management. Does the habitat corridor and linkages management section of the BMP include the details required under the approval?	On-site: undertaking site inspection of habitat corridors. Undertake interviews with appropriate person(s) responsible for habitat corridors. Off-site reviewing of Biodiversity Management Plan and monitoring reports for evidence of compliance.	Y

Indicator	Independent Auditor Comments	Measures made	Requirement	Verification Method	Compliance Finding
2.1.a)(v) bushfire management;	Section 5 of the BMP outlines bushfire management requirements. No bushfires have occurred at the site since the approval was granted. ACA has been provided with a certificate allowing back burning to be undertaken across the site, although no back burning has been undertaken due to NSW Fire and Rescue declining each specific back burning request (generally due to unsuitable timing in regard to surrounding land uses).	Review of BMP, staff interviews, field inspections	Does the bushfire management section of the BMP include the details required under the approval?	On-site: undertaking site inspection of Wahroonga Estate i.e. predominately vegetation areas. Undertake interviews with appropriate person(s) responsible for bush fire management. Off-site reviewing of Biodiversity Management Plan, monitoring reports and records of fire regimes for evidence of compliance.	Y
2.1.a)(vi) measures for long term management of the conservation lands on-site, including but not limited to:	Measures for the long-term management of the conservation lands are described throughout the BMP	Review of BMP, staff interviews, field inspections			Y
2.2 clear agreement as to ownership and responsibility of long term management and monitoring of E2 Environmental Conservation zones on-site (Annexure 2);	Section 4.6 of the BMP states that the Australasian Conference Association (ACA) (or its successor) will have full ownership of the conservation areas and be responsible for all maintenance and monitoring activities required for this area. Key staff responsible for the site confirmed that ACA is responsible for these activities and holds all titles for the relevant lands.	Review of BMP, interview with the department	Has agreement been established for the E2 Environmental Conservation Zone ownership and responsibility of long term management and monitoring?	Off-site: reviewing documents providing evidence as to the ownership and management of E2 Environmental Conservation Zone.	Y
2.3 a financial commitment to be approved by the department for the long term management of the E2 Environmental Conservation zones on-site.	A letter from ACA to the Department of Sustainability, Environment, Water, Population and Communities (now Department of the Environment) dated 23 November 2010, regarding the *'financial commitment from ACA for the long-term management for the E2 environmental conservation zone'* is provided in the appendices of the BMP (appears to be included in Appendix F).	Review of BMP, staff interviews, interviews with Department staff	Has the Department approved financial commitment for the long term management of the E2 Conservation Zones on site?	Off-site: reviewing written evidence that the Department has approved financial commitments of E2 Environmental Conservation Zone.	Y
2.4.b) Conservation Interface Management Plan with clear objectives, performance criteria and targets, which must address, but not be limited to:	Section 1.4 of the BMP states 'The Conservation Interface Management Plan has been incorporated into the Vegetation Management Plan (Chapter 4). Issues relating to Clause b(i) and (ii) have been dealt with within the Management Zones (Section 4.4) and Bushfire Management Plan (Chapter 5)'.	Review of the BMP			Y
2.4.b)(i) measures to protect and manage Turpentine-Ironbark Forest of the Sydney basin Bioregion located in the E2 Environmental Conservation zones from indirect impacts, public access, recreational use and edge effects;	The Turpentine-Ironbark Forest of the Sydney basin Bioregion located in the E2 Environmental Conservation zones has clear signage, fencing and defined access tracks both restricting access and recreational use of the areas and minimising edge effects	Review of the BMP	Does the Conservation Interface Management Plan address measures to protect and manage STIF located in the E2 Environmental Conservation Zones from indirect, public access, recreational use and edge effects?	Off-site: reviewing of Conservation Interface Management Plan to identify evidence that it provides measures to protect and manage STIF in E2 Environmental Conservation Zones from indirect impacts, public access, recreational use and edge effects.	Y

Indicator	Independent Auditor Comments	Measures made	Requirement	Verification Method	Compliance Finding
2.4.b)(ii) identify areas that will be managed as asset protections zones.	The BMP includes measures for managing asset protection zones, but does not define these. Figure 4.1 of the plan shows the 'extent of managed APZ', but the actual area is not discernible on the figure (only the boundaries facing Fox Valley Road are shown). The BMP text does not make specific reference to where asset protection zones are located. A separate 'Vegetation Zone Map' maintained by ACA clearly marks asset protection zones.		Does the Conservation Interface Management Plan identify areas that will be managed as Asset Protection Zones?	Off-site: reviewing documentation that outlines that will be managed as Asset Protection Zones.	O
2.5 The final versions of these plans must be submitted to the Minister for approval at least 3 months prior to any works commencing.	The BMP was approved by the former Department of Sustainability, Environment, Water, Population and Communities (SEWPaC) (now Department of the Environment) on 13 December 2010. This was within the required timeframe.		Was the Conservation Interface Management Plan final version submitted to the Minister at least 3 months prior to any works commencing?	Off-site: reviewing written evidence that the Minister approved final version and was submitted at least 3 months prior to works commencing.	Y
2.6 The approved plans must be implemented. ***See separate implementation checklist.***	The copy of the BMP used on-site and provided to the auditor was marked 'draft' and this should be changed to 'final'.	Review of the BMP, site inspections, staff interviews	Were all approved plans effectively implemented?	On-site: undertaking site inspection of Wahroonga Estate. Undertake interviews with appropriate person(s) responsible for implementing plans. Off-site reviewing of Biodiversity Management Plan, monitoring reports and records of fire regimes for evidence of compliance.	N
Condition 3	**Within 10 days of commencement of the action, the person taking the action must advise the department in writing of the actual date of commencement.**				
3.1 On what date did the action commence?	Work commenced on 19 September 2011.		When did works commence?	Off-site: reviewing document that provide a date when the action commenced.	NA
3.2 Was the department advised in writing within 10 days of this commencement date?	A letter notifying the Department of commencement of works commencing was sent to the Department on 27 September 2011.		Was the Department notified in writing within 10 days of commencement date?	Off-site: reviewing document that provides evidence that the department was advised in writing 10 days prior to commencement.	Y

Indicator	Independent Auditor Comments	Measures made	Requirement	Verification Method	Compliance Finding
Condition 4	**Within three months of every 12 month anniversary of the commencement of the action, the person taking the action must provide a report to the department demonstrating compliance with the conditions of this approval over the previous 12 months. These reports must be provided to the department each year until the Minister is satisfied that the proponent has complied with all conditions of the approval.** **Within three months of every 12 month anniversary of the commencement of the action, the person taking the action must submit to the department a report addressing compliance with the conditions of this approval over the previous 12 months. This report must include details of how the Biodiversity Management Plan required by condition number 2(a) and the Conservation Interface Management Plan required by condition number 2(b) have been implemented. Annual reports must be provided until the Minister is satisfied that the person taking the action has complied with all conditions of the approval.**				
4.1 Within three months of every 12 month anniversary of the commencement of the action, the person taking the action must provide a report to the department demonstrating compliance with the conditions of this approval over the previous 12 months.	A letter sent from the former Department of Sustainability, Environment, Water, Population and Communities (SEWPAC) on 25 October 2011 (Ref: 2010/21069) states that annual reporting requirements under Condition 4 of the approval were to commence on 19 December 2011 and recur annually thereafter. The audit protocol should be revised to reflect that letter. The following reports were provided to the auditors: - 1 December 2012 ('Year 1 Report') - submitted in December 2012, however; a separate compliance report required under this clause was not submitted until 25 February 2013 - 2 November 2013 ('Year 2 Report') - submitted on 17 Dec 2013 - September 2014 ('Year 3 Report') - submitted on 10 Dec 2014 The reports detail compliance against the requirements of the BMP and are structured to correspond to the BMP's structure. Specific requirements of the approval are addressed in a covering letter provided with each report. These letters do not identify any compliance issues. Compliance with this condition has not been met as the first compliance report was submitted late. Any future audits should assess compliance against compliance of the submission dates of future reports.	Review of BMP review reports	Has the Department been supplied with an annual project compliance report against the conditions of approval, Biodiversity management plan and Conservation Interface Management Plan, prior to 10 September each year?	Off-site: reviewing documents that provide evidence that the department is being supplied annual compliance reports prior to the 10 September each year.	N
4.2 These reports must be provided to the department each year until the Minister is satisfied that the proponent has complied with all conditions of the approval.	No direction has been received by the Minister or their delegate regarding these reports.	Review of BMP review reports	Has the Minister made any directions regarding the approval?	Off-site: reviewing documents that provide evidence that the department is being supplied annual compliance reports prior to the 10 September each year. If Minister is satisfied that conditions are met and a compliance report is no longer required will review written evidence from the Minister stating so.	Y

Indicator	Independent Auditor Comments	Measures made	Requirement	Verification Method	Compliance Finding
4.3 This report must include details of how the Biodiversity Management Plan required by condition number 2a) has been implemented.	The reports include a review of the BMP has been implemented and is structured to match the structure of the BMP.	Review of BMP review reports	Does the report adequately detail the following:	Off-site: reviewing Biodiversity Management Plan to check that it conforms with condition number 2a).	Y
4.3.1 Do the reports address the requirements under 2a) including, but not limited to:	The reports include a review of the BMP has been implemented and is structured to match the structure of the BMP.	Review of BMP review reports			Y
4.3.1(i) vegetation management;	Covered by Chapter 2 or 3 of each plan	Review of BMP review reports	vegetation requirements/actions?	Off-site: reviewing Biodiversity Management Plan to check that it conforms with condition number 2a).	Y
4.3.1(ii) pest and weed management;	Covered by Chapter 6 or 7 of each plan	Review of BMP review reports	pest and weed management requirements/actions?	Off-site: reviewing Biodiversity Management Plan to check that it conforms with condition number 2a).	Y
4.3.1(iii) hydrology and nutrient management;	Covered by Chapter 4 or 5 of each plan	Review of BMP review reports	hydrology and nutrient management requirements/actions?	Off-site: reviewing Biodiversity Management Plan to check that it conforms with condition number 2a).	Y
4.3.1(iv) habitat corridor and linkages management;	Covered by Chapter 5 or 6 of each plan	Review of BMP review reports	habitat corridor and linkages management requirements/actions?	Off-site: reviewing Biodiversity Management Plan to check that it conforms with condition number 2a).	Y
4.3.1(v) bushfire management;	Covered by Chapter 3 or 4 of each plan	Review of BMP review reports	bushfire management actions/requirements?	Off-site: reviewing Biodiversity Management Plan to check that it conforms with condition number 2a).	Y
4.3.1(vi) measures for long term management of the conservation lands on-site, including but not limited to:	Included throughout the reports	Review of BMP review reports	long term management actions relating to conservation lands?	Off-site: reviewing Biodiversity Management Plan to check that it conforms with condition number 2(a).	Y
4.4 This report must include details of how the Conservation Interface Management Plan required by condition number 2(b) has been implemented.	Refer to requirement 2.4(b)	Review of BMP review reports	Details of how the Conservation Interface Management Plan has been implemented?	Off-site: reviewing Biodiversity Management Plan to check that it conforms with condition number 2(a).	Y
4.4.1 Do the reports address the requirements under 2(b) including, but not limited to:	Refer to requirement 2.4(b)	Review of BMP review reports			Y

Indicator	Independent Auditor Comments	Measures made	Requirement	Verification Method	Compliance Finding
4.4.1(i) measures to protect and manage Turpentine-Ironbark Forest of the Sydney basin Bioregion located in the E2 Environmental Conservation zones from indirect impacts, public access, recreational use and edge effects;	Covered by Chapter 2 or 3 of each plan	Review of BMP review reports	Details of measures implemented to protect and manage STIF located in the E2 Environmental Conservation Zones from indirect impacts, public access, recreational use and edge effects?	Off-site: reviewing Biodiversity Management Plan to check that it conforms with condition number 2(b).	Y
4.4.1(ii) identify areas that will be managed as asset protections zones.	Figures 1.1-3 of each report show asset protection zones.	Review of BMP review reports	Are areas to be managed as asset protections zones identified?	Off-site: reviewing Biodiversity Management Plan to check that it conforms with condition number 2(b).	Y
4.5 Annual reports must be provided until the Minister is satisfied that the person taking the action has complied with all conditions of the approval.	No direction has been received by the Minister or their delegate regarding these reports.	Staff interviews	Has the Minister made any directions or stated that they are satisfied that the action has been complied with?	Off-site: reviewing documents that provide evidence that the department has been supplied annual compliance reports in accordance with all conditions of approval.	Y
Condition 5	**Upon the direction of the Minister, the person taking the action must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the Minister. The independent auditor must be approved by the Minister prior to the commencement of the audit. Audit criteria must be agreed to by the Minister and the audit report must address the criteria to the satisfaction of the Minister.**				
5.1 Upon the direction of the Minister, the person taking the action must ensure that an independent audit of compliance with the conditions of approval is conducted.	ACA engaged the auditors following direction from the Department to do so	Contract for this audit	Have any independent audits been undertaken within required timeframes?	Complete on-site inspections and off-site reviews within timeframe, where possible.	Y
5.2 The person taking the action must ensure that an independent audit report is submitted to the Minister.	The audit report will be submitted to the Department of Environment following an initial review by ACA.		Have any independent audit reports been submitted to the Minister for approval?	Audit to be submitted to Minister for approval.	Y
5.3 The independent auditor must be approved by the Minister prior to the commencement of the audit.	The audit team was approved by the Department of Environment prior to the audit being undertaken.	Emails between the auditors, ACA and the Department	Has the independent auditor been approved by Minister prior to undertaking audit?	Off-site: review of written evidence that the auditor is approved by the Minister prior to undertaking the audit.	Y
5.4 The Audit criteria must be agreed to by the Minister prior to the commencement of the audit.	The audit criteria was reviewed and approved by the Department of Environment prior to the audit.	Emails between the auditors, ACA and the Department	Was the audit criteria approved by Minister prior to commencement of audit?	Off-site: review of written evidence that audit criteria approved by the Minister prior to undertaking the audit.	Y
5.5 The audit report must address the criteria to the satisfaction of the Minister.	The audit report has been referred to the Department of the Environment for review		Have any audit reports been approved by the Minister as satisfying the audit criteria?	Off-site: prepare report in accordance with the approved criteria to the satisfaction of the Minister.	Y

Indicator	Independent Auditor Comments	Measures made	Requirement	Verification Method	Compliance Finding
Condition 6	**If the person taking the action wishes to carry out any activity otherwise than in accordance with the plans referred to in the conditions of this approval, the person taking the action must submit for the Minister's approval a revised version of any such plan. The varied activity shall not commence until the Minister has approved the varied plan in writing. If the Minister approves such a revised plan, that plan must be implemented in place of the plan originally approved.**				
6.1 If the person taking the action wishes to carry out any activity otherwise than in accordance with the plans referred to in the conditions of this approval, the person taking the action must submit for the Minister's approval a revised version of any such plan.	The BMP has not been revised since it was drafted in 2010.	Review of the BMP	Have any revisions to the plans been made? Were these submitted to the Minister for approval?	Off-site: reviewing of documents providing evidence that revisions of plans were proved to the Minister for written approval prior to activity commencement.	NA
6.2 The varied activity shall not commence until the Minister has approved the varied plan in writing.	The BMP has not been revised since it was drafted in 2010.	Review of the BMP	If any varied plans were made, were these submitted to the Minister prior to works commencing?	Off-site: reviewing of documents providing evidence that the Minister provided written approval prior to activity commencement.	NA
6.3 If the Minister approves such a revised plan, that plan must be implemented in place of the plan originally approved.	The BMP has not been revised since it was drafted in 2010.	Review of the BMP	If any plans have been revised, was the old version of the plan effectively rescinded?	Off-site: reviewing of documents providing evidence that the revised plan approved by the Minister is being implemented.	NA
Condition 7	**If the Minister believes that it is necessary or desirable for the better protection of listed threatened species and ecological communities and listed migratory species to do so, the Minister may request that the person taking the action make specified revisions to the plans approved pursuant to the conditions of this approval and submit the revised plan for the Ministers approval. The person taking the action must comply with any such request. The revised approved plan must be implemented. Unless the Minister has approved the revised plan, then the person taking the action must continue to implement the plan originally approved.**				
7.1 If the Minister believes that it is necessary or desirable for the better protection of listed threatened species and ecological communities and listed migratory species to do so, the Minister may request that the person taking the action make specified revisions to the plans approved pursuant to the conditions of this approval and submit the revised plan for the Ministers approval.	No direction has been received from the Minister or their delegate regarding specific edits to the BMP	Reviews of available documentation, staff interviews	Has the Minister made any direction for the plans to be modified? If so, was this done in accordance with review/approval requirements?	Off-site: reviewing of documents providing evidence that revisions of plans were proved to the Minister for written approval prior to activity commencement.	NA
7.2 If the Minister requests specified revisions to the approved plans be made, then the person taking the action must comply with any such request.	No direction has been received from the Minister or their delegate regarding specific edits to the BMP	Reviews of available documentation, staff interviews	Has the Minister made any direction for the plans to be modified? If so, was this done in accordance with review/approval requirements?	Off-site: reviewing of documents providing evidence that the plans were revised in accordance with Minster's requests.	NA

Indicator	Independent Auditor Comments	Measures made	Requirement	Verification Method	Compliance Finding
7.3 The revised approved plan must be implemented.	No direction has been received from the Minister or their delegate regarding specific edits to the BMP	Reviews of available documentation, staff interviews	Has the Minister made any direction for the plans to be modified? If so, was this plan adequately implemented?	Off-site: reviewing of documents providing evidence that the revised plan approved by the Minister is being implemented.	NA
7.4 Unless the Minister has approved the revised plan, then the person taking the action must continue to implement the plan originally approved.	No direction has been received from the Minister or their delegate regarding specific edits to the BMP	Reviews of available documentation, staff interviews	Original management plan continues to be implemented if the Minister has not approved a revised version of the management plan.	Off-site: reviewing of documents providing evidence that the revised plan is only implemented after receiving approval of the revised plan by the Minister.	NA
Condition 8	**If, at any time after three years from the date of this approval, the Minister notifies the person taking the action in writing that the Minister is not satisfied that there has been substantial commencement of the action, the action must not thereafter be commenced without the written agreement of the Minister.**				
8.1 If, at any time after three years from the date of this approval, the Minister notifies the person taking the action in writing that the Minister is not satisfied that there has been substantial commencement of the action, the action must not thereafter be commenced without the written agreement of the Minister.	No direction has been received from the Minister or their delegate regarding any works at the site.	Reviews of available documentation, staff interviews	Has the Minister made any direction regarding works not being commenced within three years? Was this direction complied with?	Off-site: reviewing of written approval of Minister approval for commencement if action is stopped my Minister, where appropriate.	NA

Indicator	Independent Auditor Comments	Measures made	Requirement	Verification Method	Compliance Finding
Condition 9	**The person taking the action must maintain accurate records substantiating all activities associated with or relevant to the above conditions of approval, including measures taken to implement the management plans required by this approval, and make them available upon request to the department. Such records may be subject to audit by the department or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the department's website. The results of audits may also be publicised through the general media.**				
9.1 The person taking the action must maintain accurate records substantiating all activities associated with or relevant to the above conditions of approval.	Each yearly BMP report contains detailed descriptions of the activities undertaken at the site that relate to the approval/BMP requirements. A number of other activity registers are also kept, including: spraying records, planting lists/histories, toolbox meeting minutes, 'bush schedule', site inspection forms, bird records etc. However detailed lists of the species planted in this area are not provided in the BMP reports, so the audit could not determine if revegetation activities have fully followed the BMP	Field inspections, review of available documents, staff interviews	Are records of all site actions being maintained properly? Are these easily accessible? Are there any records not being kept, or not provided to the auditors?	Off-site: reviewing records relevant to conditions of approval.	N
9.2 The person taking the action must maintain accurate records of measures taken to implement the management plans required by this approval.	Refer to requirement 9.1	Field inspections, review of available documents, staff interviews	Are records of all site actions being maintained properly? Are these easily accessible? Are there any records not being kept, or not provided to the auditors?	Off-site: reviewing records relevant to implementation of management plans.	Y
9.3 The person taking the action must make these records available upon request to the department.	No requests have been received from the Department of the Environment regarding site records.	Staff interviews	Has the Department made any requests to access records associated with the project? Have these requests been complied with?	Off-site: reviewing evidence that the records are available to the department on request.	Y
9.4 Such records may be subject to audit by the department or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with the conditions of approval.	This audit has reviewed all available site records. It was reported that no other audits have taken place.	Field inspections, review of available documents, staff interviews	Has the Department undertaken any audits on the project? What were the outcomes of these audits?	Off-site: all records are accessible as part of audit.	Y
9.5 Summaries of audits will be posted on the department's website.	NA	NA	NA - this is not the proponents responsibility	NA	NA
9.6 The results of audits may also be publicised through the general media.	NA	NA	NA - this is not the proponents responsibility	NA	NA

Indicator	Independent Auditor Comments	Measures made	Requirement	Verification Method	Compliance Finding

NOTES:

(1) General:	**The Audit Criteria and Methodology must be based upon the relevant approval instrument and must comprehensively address all of the approval conditions including elements of conditions and measures required by management plans, reports, or programs etc. Each condition must be included in its entirety and then be broken down into its component elements.** **The Audit Criteria and Methodology must be prepared by the approved independent auditor and it must be approved by the Minister/Delegate prior to the audit commencing. The approved Audit Criteria and Methodology is to be incorporated into the resulting Audit Report and is to be used to set out in detail the audit findings.** **In submitting the Audit Criteria and Methodology to the Department for approval, all fields are to be completed with the exception of the Measurements Made, Independent Auditor Comments and the Compliance Finding fields which are to be completed in the resulting Audit Report.**
(2) Requirement:	**The Requirement field in the Audit Criteria and Methodology is to be completed by the auditors to articulate in their own words what they understand the compliance requirement of the condition/condition element or commitment contained within associated plans, reports, programs etc. required by a condition to be.**
(3) Verification Method:	**The Verification Method field in the Audit Criteria and Methodology is to be completed by the auditors to articulate in their own words how they intend going about measuring compliance with the conditions/condition elements or commitments contained within associated plans, reports, programs etc. e.g. reviewing documentation in the nature of xxxxx and/or by undertaking a site inspection of xxxxx.** **Where sample records are to be reviewed (e.g. water quality monitoring records, inspection logs, pre-clearance surveys etc.) the Australian Government Department of the Environment needs to be satisfied that a sufficiently representative sample of records will be reviewed. In this regard the Audit Criteria and Methodology must identify the nature of the records to be reviewed, the total number of records that are potentially available for review, the number of those records planned to be reviewed and the method intended to be used to ensure a sufficiently representative sample of records e.g. even spread over time, dates, etc.**
(4) Measurements Made:	**Audit Reports are to include details of actual measurement made, sample sizes and audit evidence obtained. Where sample records are referenced (e.g. water quality monitoring records, inspection logs, pre-clearance surveys etc.) a sufficiently representative sample of records should be reviewed.** **In this regard the audit report must identify the nature of the actual records, the total number of records that were available for review, the actual number of records that were reviewed and the method used to ensure a sufficiently representative sample of records e.g. even spread over time, dates, etc.**
(5) Independent Auditor Comments:	**The resulting Audit Report:** **- must not report by exception and must include details of all findings made against each criterion. Where the implementation of plans, reports, or programs etc. (however described) required by the approval conditions are to be measured, the details of the individual commitments contained in those plans, reports, or programs etc. are to be separately identified and measured.** **- must not place an over-reliance on representations made by the approval/permit holder or their representatives (i.e. audit findings should be based on independently verifiable third party evidence).** **- must demonstrate that a sufficiently representative random sample of records have been reviewed (see further detail under Verification Methods and Measurements Made).**

Indicator	Independent Auditor Comments	Measures made	Requirement	Verification Method	Compliance Finding
(6) Compliance Finding:	**The Australian Government Department of the Environment uses the following Compliance finding ratings:** **Y: Compliance; N: Non-compliance; NA: Not applicable at time of audit; U: Undetermined; O: Observation.** **Compliance** **A rating of 'compliance' is given when the auditee has complied with a condition, element of a condition, or measure required by a management plan, report or program etc.** **Non-compliance** **A rating of 'non-compliance' is given when the auditee has not met a condition, element of a condition, or measure required by a management plan, report or program etc.** **Not applicable** **A rating of 'not applicable at the time of the audit' is given when the condition or element of a condition falls outside the scope of the audit e.g. if an activity has not yet commenced.** **Undetermined** **A rating of 'undetermined' is given when the condition or element of a condition falls inside the scope of the audit but there is insufficient evidence to make a judgment on compliance or non-compliance.** **Observation** **An 'observation' may be made about issues relevant to the protection of a matter of national environmental significance when the issue is not strictly related to compliance or non-compliance with a condition or element of a condition.** **Note: The above ratings are to be applied by the approved independent auditor. They are also to be applied when measuring compliance in relation to management plans, reports, or programs etc. (however described) required by conditions.**				

Audit Criteria and Methodology - Wahroonga Estate Redevelopment, Fox Valley, NSW

Client: Australasian Conference Association Ltd

Date of Report:

Report prepared by:

Biodiversity Management Plan	**Wahroonga Estate Redevelopment - Biodiversity Management Plan** **June 2015** **Prepared by Cumberland Ecology**
Weed Management Plan - Condition 1	**3.5 Weed Control Methods:** ***3.5.1 Primary Weeding*** **Priority must be given to the removal of primary weeds during weed control programs. Primary weeding aims at removing keystone weeds including noxious weeds and reducing weed cover to < 30%. Table 3.1of the BMP lists keystone weed species identified on the subject land which are to be removed during primary weeding. It is expected that this is not a comprehensive list, and that additional weed species may be present. Best practice should be employed to control weed species that are not listed in Table 3.1 of the BMP.**

Indicator	Independent Auditor Comments	Measures made	Requirement	Verification Method	Compliance Finding
1.0 Carry out primary weeding in accordance with BMP	Weeding is undertaken continuously across the site by its 'BMP Team', who undertake weeding according to a 'Weed flowering Season Chart' which provides a yearly program for targeted weeding based on the flowering regime of weeds applicable to the site. This chart includes the weeds listed for control in the BMP and others that are considered applicable to the site. Weeding activities are detailed to a high level in each annual BMP report. Weeding appears to be done in accordance with the BMP through physical and chemical controls.	Site surveys, staff interview, review of available documents.	Carry out primary weeding in accordance with Wahroonga Estate BMP.	On-site: undertaking a site inspection of primary weeding areas and completing 20 X 20 m BioBanking quadrats. Off-site: A review of documentation to confirm that primary weeding is being undertaken in accordance with the approved BMP. * Documentation can be in the nature of copies of reports, records, weeding/spray diaries, invoices for weed control services etc.	Y
1.1 Priority must be given to the removal of primary weeds during weed control programs.	Primary weeding activities were observed in the majority of audit sites where required across all Weed class 1 and 2 categories. Partial Primary weeding had commenced in a number of class 3 areas and some class 4 areas.	Site surveys, staff interview, review of available documents.	Carry out primary weeding in accordance with the Wahroonga Estate BMP.	On-site: undertaking a site inspection of primary weeding areas and completing 20 X 20 m BioBanking quadrats. Off-site: A review of documentation to confirm that priority is being given to the removal of primary weeds during weed control programs.	Y
1.2 Primary weeding aims at removing keystone weeds including noxious weeds in accordance with Table 3.1 of the BMP which lists keystone weed species identified on the subject land which are to be removed during primary weeding.	Weed spread at the site is under constant evaluation by the BMP team and weed control practices are undertaken according to the schedule and observations of occurrence. Priority is given to an overall program of removing priority (or keystone) weeds and this is confirmed in the annual BMP reports (e.g.. page 11, 2014 BMP report). Primary weeding activities were observed in the majority of audit sites where required across all Weed class 1 and 2 categories. Partial Primary weeding had commenced in a number of class 3 areas and some class 4 areas.	Site surveys, staff interview, review of available documents.	Carry out primary weeding (including keystone and noxious weeds) in accordance with Table 3.1 of the Wahroonga Estate BMP.	On-site: undertaking a site inspection of primary weeding areas and undertaking 20 X 20 m BioBanking quadrats to determine exotic species richness and identify presence of keystone and noxious weed species. Off-site: A review of documentation to confirm that removal of keystone weeds, including noxious weeds, is being undertaken during primary weeding and in accordance with Table 3.1 of the approved BMP.	Y
1.3 Primary weeding aims at and reducing weed cover to < 30%.	The BMP reports include a weed map showing % weed coverage of the site for the 4 different weed classes, this is under constant evaluation and is updated for each annual report. Primary weeding activities were observed in the majority of audits sites within Weed class 1 and 2 categories reducing weed cover <30%. Partial Primary weeding had commenced in a number of class 3 areas and some class 4 areas resulting in weed cover to be reduced in some cases <30% .	Site surveys, staff interview, review of available documents.	Carry out primary weeding in accordance with the Wahroonga Estate BMP (reduce exotic cover to <30%).	On-site: undertaking a site inspection of primary weeding areas and undertaking 20 X 20 m BioBanking quadrats to determine weed cover (%). Off-site: A review of documentation to confirm that primary weeding aimed at reducing weed cover to <30% is being undertaken in accordance with the approved BMP.	Y
1.4 It is expected that this is not a comprehensive list, and that additional weed species may be present. Therefore, best practice should be employed to control weed species that are not listed in Table 3.1 of the BMP.	A detailed weed schedule has been developed by ACA according to weeds listed in the BMP and those observed or expected to be potential issue on site.	Staff interviews, review of available documents	Carry out weeding in accordance with the Wahroonga Estate BMP. Employ best practices to control weed species not listed in Table 3.1 of the BMP.	On-site: undertaking a site inspection of primary weeding areas and completing 20 X 20 m BioBanking quadrats to determine exotic species richness and identify presence of weed species not identified in Table 3.1 of the approved BMP. Off-site: A review of documentation to confirm that best practice is being employed to control weed species that are not listed in Table 3.1 of the approved BMP.	Y

Weed Management Plan - Condition 2	**3.5 Weed Control Methods:** ***3.5.2 Secondary Weeding*** **Secondary weeding efforts should occur after primary weeding objectives are achieved. Secondary weeding efforts will aim to further reduce weed cover to < 5%. Table 3.1 of the BMP summarises secondary weed species recorded within the subject land. It is expected that this is not a comprehensive list, and that additional weed species may be present. Best practice should be employed to control weed species that are not listed in Table 3.1 of the BMP.**

2.0 Carry out secondary weeding in accordance with BMP once primary weeding objectives are achieved.	Secondary weeding is undertaken with priority given to 'aggressive' secondary weeds. Weed control methods and tasks undertaken are outlined in each annual BMP report. The BMP reports include a weed map showing % weed coverage of the site for the 4 different weed classes, this is under constant evaluation and is updated for each annual report. Secondary weeding activities across the majority of audits sites within Weed class 1 and 2 categories had reduced weed cover <30%.	Site surveys, staff interview, review of available documents.	Carry out secondary weeding in accordance with the Wahroonga Estate BMP.	On-site: undertaking a site inspection of secondary weeding areas and completing 20 X 20 m BioBanking quadrats. Off-site: A review of documentation to confirm that secondary weeding is being undertaken after primary weeding objectives are achieved and in accordance with the approved BMP.	Y
2.1 Secondary weeding efforts will aim to further reduce weed cover to < 5%. Table 3.1 of the BMP summarises secondary weed species recorded within the subject land.	Weed control is under constant evaluation by the grounds team and weed coverage is mapped for different weed classes on a map that is included in each annual report.	Site surveys, staff interview, review of available documents.	Carry out secondary weeding in accordance with Table 3.1 of the Wahroonga Estate BMP (reduce exotic cover to <5%).	On-site: undertaking a site inspection of secondary weeding areas and completing 20 X 20 m BioBanking quadrats to determine weed cover (%). Off-site: A review of documentation to confirm that secondary weeding efforts aimed at reducing weed cover to <5% were undertaken in accordance with the approved BMP.	Y
2.2 It is expected that this is not a comprehensive list, and that additional weed species may be present. Therefore, best practice should be employed to control weed species that are not listed in Table 3.1 of the BMP.	A detailed weed schedule has been developed by ACA according to weeds listed in the BMP and those observed or expected to be potential issue on site.	Staff interviews, review of available documents	Carry out secondary weeding in accordance with the Wahroonga Estate BMP. Employ best practices to control weed species not listed in Table 3.1 of the BMP.	On-site: undertaking a site inspection of secondary weeding areas and completing 20 X 20 BioBanking quadrats to determine exotic species richness and identify presence of weed species not identified in Table 3.1 of the approved BMP. Off-site: A review of documentation to confirm that best practice has been employed to control weed species that are not listed in Table 3.1 of the approved BMP.	Y
Weed Management Plan - Condition 3	**3.6 Specific Weed Control Methods** **Undertake appropriate weed control techniques for weed species in accordance with Table 3.2 Appropriate Weed Control Techniques For Weed Species on the Subject Land.**				
3.1 Undertake appropriate weed control techniques for weed species as outlined in Section 3.6 and in accordance with methods in Table 3.2 of the BMP.	Specific weed control techniques employed at the site are described in the annual BMP reports. Weed control techniques described in these reports and also by staff interviewed for the audit appear to align with those specified in the BMP. It was noted that some specifications described in the BMP have been found to be ineffective for on-site weed control, such as use of diluted herbicide for cut and paste control methods. The use of diluted herbicide is still employed and it is recommended that this is reviewed - the intention of the BMP is to outline effective weed control methods and methods should be changed if they are found to be effective, as long as this does not increase the risk of damage to adjacent native vegetation. Evidence of Primary weeding techniques including Hand Weeding, Rake and Pile, Cut and Paste and Mechanical Removal were observed during the audit site inspection.	Staff interviews, review of available documents	Undertake appropriate weed control techniques for weeds species as identified in Section 3.6 and in accordance with methods outlined in Table 3.2 of the Wahroonga Estate BMP.	On-site: undertaking a site inspection and undertaking 20 X 20 m BioBanking quadrats. Off-site: A review of documentation to confirm that appropriate weed control techniques are employed for weed species as outlined in Section 3.6 and in accordance with methods in Table 3.2 of the approved BMP.	Y
Weed Management Plan - Condition 4	**3.7 Sequencing of Works:** **Undertake weeding in accordance with Table 3.3 Sequence of Works - Weed Control.**				
4.0 Undertake identified sequencing of weed control efforts for the E2 Environment Conservation Zone in accordance with Table 3.3 of the BMP and including:	NA	NA	Undertake identified sequencing of weed control efforts for the E2 Environment Conservation Zone in accordance with Table 3.3 of the Wahroonga Estate BMP.	On-site: undertaking a site inspection of E2 Environment Conservation Zone and completing 20 X 20 m BioBanking quadrats. Off-site: A review of documentation to confirm that identified sequencing of weed control efforts for the E2 Environment Conservation Zone are undertaken in accordance with Table 3.3 of the approved BMP.	NA

4.1 The proposed sequence of works is based on the principle of working from least weed infested areas to the most heavily weed infested areas. Relating this to the site, this means that weed classes 1 and 2 will be controlled prior to weed classes 3 and 4.	Weeding is undertaken using a weed map and weeding schedule as described above. Areas of higher weed infestation are prioritised, along with flowering species and higher classes of weeds. The audit found that the weed map and flowering provides a high level of detail for weed planning and these tools are used on a daily basis to guide weed control. Primary weeding activities were observed in the majority of audit sites where required across all Weed class 1 and 2 categories in accordance with sequence of the BMP S 3.1. Partial Primary weeding had commenced in a number of class 3 areas and some class 4 areas. Evidence of primary weeding included a range of species across groundcovers, canopy and shrub layers. Further Primary weeding will be required in the majority of class 3 and al of class 4 weed areas. Observed Primary weeds infestation included Crofton weed in area 7, 8 and 9, camphor laurel in 22. It should be noted that S 3..5.1 of BMP refers to Table 3.2 as a list of Keystone weeds, however this should be 3.1 neither Small leaf or large leaf privet are identified in Table 3.2 identified as primary weeds in the bump despite significant infestation in the Riparian Corridor MGT zone.	Staff interviews, review of available documents	Undertake identified sequencing of weed control efforts for the E2 Environment Conservation Zone in accordance with Table 3.3 of the Wahroonga Estate BMP i.e. weed classes 1 and 2 to be controlled prior to weed classes 3 and 4.	On-site: undertaking a site inspection of E2 Environment Conservation Zone and completing 20 X 20 m BioBanking quadrats. Off-site: A review of documentation to confirm that the sequence of works is based on the principle of working from least weed infested areas to the most heavily weed infested areas; i.e.. weed classes 1 and 2 are controlled prior to weed classes 3 and 4.	Y
4.2	The annual reports state that keystone and secondary weeds are prioritised for control. This approach was confirmed by staff during interviews.	Staff interviews, review of available documents	Undertake identified sequencing of weed control efforts for the E2 Environment Conservation Zone in accordance with Table 3.3 of the Wahroonga Estate BMP i.e. weed classes 1 and 2 to be controlled prior to weed classes 3 and 4.	On-site: undertaking a site inspection of E2 Environment Conservation Zone and completing 20 X 20 m BioBanking quadrats. Off-site: A review of documentation to confirm that initial weeding occurred to weed classes 1 and 2 and was aimed at improving the condition of these classes.	Y
4.3 Once initial weeding objectives have been achieved, primary weeding will occur throughout the entire E2 zone in weed classes 3 and 4 to remove noxious and keystone weeds	This approach was confirmed in staff interviews and is demonstrated in the annual reports that show that weeding activities progress to lower priority weeds when possible. A review of these reports shows that primary and secondary weeds remain the major concern at the site and are still the focus of the majority of weed control works. Primary weeding act ivies were observed in the majority of audits sites where required across all Weed class 1 and 2 categories in accordance with sequence of the BMP S 3.1. Partial Primary weeding had commenced in a number of class 3 areas and some class 4 areas. Evidence of primary weeding included a range so species across groundcovers, canopy and shrub layers. Further Primary weeding will be required in the majority of Class 3 and al of class 4 weed areas. Observed Primary weeds infestation included Crofton weed in area 7, 8 and 9, camphor laurel in 22. It should be noted that S 3..5.1 of BMP refers to Table 3.2 as a list of Keystone weeds, however this should be 3.1 neither Small leaf or large leaf privet are not identified in Table 3.2 identified as primary weeds in the bump despite significant infestation in the Riparian Corridor MGT zone.	Staff interviews, review of available documents	Undertake primary weeding on completion of initial weeding, throughout the entire E2 Conservation Zone in weed Classes 3 and 4 in accordance with Wahroonga Estate BMP.	On-site: undertaking a site inspection of E2 Environment Conservation Zone and completing 20 X 20 m BioBanking quadrats to determine exotic species richness and keystone and noxious weeds. Off-site: A review of documentation to confirm that once initial weeding objectives were achieved, primary weeding occurred throughout the entire E2 zone in weed classes 3 and 4 to remove noxious and keystone weeds.	Y
4.4 Primary weeding will occur throughout the entire E2 zone in weed classes 3 and 4 to reduce the weed cover to < 30%.	Figures 2.1 to 2.4 in the 2014 BMP report show the progress of weed control on the site. These figures show substantial progress in the reduction of weed cover to under 30% across the site. Some areas of greater than 30% remain but are being worked on. The audit site inspection confirmed the changes in weed class 3 and 4 in some cases, however also identified some inconsistencies between the mapped 2014 weed class and on site weed % cover The weekly inspections are appropriate monitoring for bushland edges to show weed invasion is being reduced. Site inspections validated that weed invasion is being reduced in these edges	Staff interviews, review of available documents	Undertake primary throughout the entire E2 Conservation Zone in weed Classes 3 and 4 in accordance with the Wahroonga Estate BMP (reduce exotic cover to <30%).	On-site: undertaking a site inspection of E2 Environment Conservation Zone and completing 20 X 20 m BioBanking quadrats to determine weed cover (%). Off-site: A review of documentation to confirm that primary weeding has occurred throughout the entire E2 zone in weed classes 3 and 4 to reduce the weed cover to < 30%.	Y
4.5 Once all keystone and noxious weeds have been managed and weed cover has been reduced to < 30%, secondary weeding can occur. Secondary weeding will aim at reducing weed cover to < 5% by controlling less invasive weed species and regenerating keystone and noxious weeds.	Refer to requirements 4.3 and 4.4.		Undertake secondary weeding, on completion of primary weeding in accordance with the Wahroonga Estate BMP (reduce exotic cover to <30%).	On-site: undertaking a site inspection of E2 Environment Conservation Zone and completing 20 X 20 m BioBanking quadrats to determine weed cover (%). Off-site: A review of documentation to confirm that secondary weeding, aimed at reducing weed cover to < 5% by controlling less invasive weed species and regenerating keystone and noxious weeds, occurred once all keystone and noxious weeds were managed and weed cover had been reduced to < 30%.	Y

Vegetation Management Plan - Condition 1	**4.3 Vegetation Management:** **4.3.1 Edge Effects** **Maintenance weeding should regularly monitor bushland edges to reduce weed invasion.** **The dumping of lawn and garden clipping is prohibited within the E2 zone.**				
1.1 Weeding should regularly monitor bushland edges to reduce weed invasion	Weed spread is monitored through weekly site inspections of sections of the site by the Grounds and Projects Supervisor and Technical Research Officer. Each week a different section of the site (from a total of 4 sections) is focused on. The results of this survey are used to program weed control works for the coming week. The weed spread map is updated on an annual basis and photographic records are also taken on an annual basis and detailed in each BMP report.	Staff interviews, review of available documents	Weeding should regularly monitor bushland edges to reduce weed invasion.	On-site: undertaking a site inspection of bushland edges to identify presence/absence of weed invasion. Off-site: A review of documentation to confirm that weeding has regularly monitored bushland edges to reduce weed invasion.	Y
1.2 Dumping of lawn and garden clippings within the E2 zone is monitored & appropriate action is taken to enforce prohibition.	A weekly site inspection is undertaken by the Grounds and Projects Supervisor and Technical Research Officer. Each week a different section of the site (from a total of 4 sections) is focused on. Dumped green waste is removed immediately when observed. Community consultation is undertaken to educate local residents of the results of dumping green waste at or adjacent to the site. Methods for communication include community newsletters and notifications that discuss the dumping of green waste. No green waste was observed in the site during the audit site inspections.	Staff interviews, review of available documents	Monitor dumping of lawn and garden clippings within E2 Conservation Zone and carry out appropriate actions to enforce prohibition in accordance with Wahroonga Estate BMP.	On-site: Undertake a site inspection of the E2 zone to confirm that enforcement actions relating to the prohibition of dumping of lawn and garden clippings is having the desired effect. Off-site: reviewing documentation in the nature of monitoring reports and/or other records of appropriate actions to enforce prohibition.	Y
Vegetation Management Plan - Condition 2	**4.3 Vegetation Management:** **4.3.3 Seed Collection** **On site seed collection is recommended for use in rehabilitation of STIF Management Zone 2. High quality STIF capable of providing seed for all strata can be found to the east in STIF Management Zone 1. Seed collection, processing and storage should follow the Flora Bank Seed Collection Guidelines (National Heritage Trust / Bush care /Greening Australia 2002), which are found at www.florabank.org.au.**				
2.0 Seed collection, processing and storage should be undertaken in accordance with the Flora Bank Seed Collection Guidelines. Seed collection should be used for Rehabilitation of the STIF management zone 2.	Some propagation of plants for use in revegetation of the site is undertaken by ACA staff using two greenhouses located within the aged care facility. It was reported by staff that prorogation methods used include germination of seed (purchased and collected) and cuttings. A list of seeds collected and propagated at the site is provided in each BMP report, although the species collected generally don't correspond with the STIF revegetation requirements of the BMP. ACA reported that the STIF planting lists from the BMP were provided to an independent ecological consultant (Antechinus Environmental), who provided seeds for planting from that list. These seeds were hydroseeded in the STIF area. It appears that not all species listed in the BMP were not all available. The provenance of the seed provided by Antechinus Environmental is not known. It is important to note that the source (or provenance) of seed used for revegetation of STIF areas should be from within the site or as close as possible. This approach is used to ensure the genetics of local biodiversity is maintained. It was reported that revegetation requirements have been found to provide greater demand that on-site propagation activities can service and this is why an independent consultant was used to provide seed. It also appears that some required species are difficult to propagate from collected seed (e.g. grass species). The 2012 report outlines quantities of purchased seed that were used for rehabilitation of STIF areas. This included use of collected *Indigofera australis* seed, although all other seed was purchased. The 2014 report states that tubestock and hydromulch was used for revegetation of STIF areas. A form was sighted during the audit for use on site for seed collection activities that aligns with the Flora Bank Seed Collection Guidelines - this form had recently been developed and a copy was sighted for the recent collection of Wombat Berry seeds (10/09/15). Although more dated records were not available. Compliance with this condition was not met as other methods for propagating STIF plants have been used than planting of seeds or seedlings coming from specimens collected on-site. Recommendation - prioritise the use of seed collected on-site for rehabilitation of STIF areas over other means (such as use of purchased seed or tubestock). Ensure seed collection is undertaken to the requirements of the BMP and records are kept of all seed collection activities.	Staff interviews, review of available documents	Seed collection, processing and storage should be undertaken in accordance with the Flora Bank Seed Collection Guidelines. Seed collection should be used for Rehabilitation of the STIF management zone 2.	On-site: undertaking site inspection of STIF Management Sites 1 and 2. Off-site: A review of documentation to confirm that seed collection, processing and storage is being undertaken in accordance with the Flora Bank Seed Collection Guidelines and that seed collected is being used for rehabilitation of the STIF management zone 2.	N

2.1 Seed collection, processing and storage should follow the Flora Bank Seed Collection Guidelines (National Heritage Trust / Bush care /Greening Australia 2002), which are found at www.florabank.org.au.	As above	As above	Seed collection, processing and storage should be undertaken in accordance with the Flora Bank Seed Collection Guidelines (National Heritage Trust / Bushcare /Greening Australia 2002).	On-site: undertaking site inspection of STIF Management Sites 1 and 2. Off-site: reviewing documentation in the nature of seed collection records.	N

2.2 Seed collection should be used for Rehabilitation of the STIF management zone 2**, noting that High quality STIF capable of providing seed for all strata can be found to the east in STIF Management Zone 1.**	As above	As above	Seed collection should be used for Rehabilitation of STIF Management 2 (high quality STIF capable of providing seed for all strata can be found to the east of STIF Management Zone 1).	On-site: undertaking site inspection of STIF Management Sites 1 and 2. Off-site: reviewing documentation in the nature of seed collection records.	N
Vegetation Management Plan - Condition 3	**4.4 Vegetation Management Requirements:** **4.4.1 Riparian Management Zone** **I. Weeding** **· Weeding efforts should focus on areas historically weedy (classes 3 and 4). These areas are typically disturbed and have a higher abundance of weeds which will require more regular monitoring.** **· Soil stabilisation is a high priority when managing this zone.** **· Other degraded areas requiring more regular attention includes polygon 4 which follows The Comenarra Parkway, parts of polygons 5, 6, and 7 (see Figure 3.1 &Table 3.3).** **· Forest edges should also be monitored regularly as edge effects encourage weed growth.**				
3.0 Weeding in the Riparian Management Zone should focus on areas classed 3 or 4. Soil stabilisation is a high priority action, more regular attention is required for more degraded areas including polygons 4, 5, 6, and 7, and forest edges should be monitored regularly for weed growth.	Weed maps provided in the BMP reports (Figures 2.1-2.4) show that progress in weed control has been made across riparian areas. The audit site inspection confirmed primary weeding activities were focused in areas of Weed class 3 and to a lesser extent class 4 areas. No Primary weeding was observed to have commenced in area 4, however significant actions have been undertaken in areas 5, 6 and 7.	Site surveys, staff interview, review of available documents.	Weeding in the Riparian Management Zone should focus on areas classed 3 or 4. Soil stabilisation is a high priority action, and forest edges should be monitored for weed growth.	Onsite: undertaking site inspection of Riparian Management Zone and completion of 20 X 20 BioBanking quadrats to determine exotic species richness. Off-site: reviewing of documentation in the nature of monitoring reports.	Y
3.1 Weeding efforts should focus on areas historically weedy (classes 3 and 4). These areas are typically disturbed and have a higher abundance of weeds which will require more regular monitoring.	Weed maps provided in the BMP reports (Figures 2.1-2.4) show that progress in weed control has been made across riparian areas. The audit site inspection confirmed primary weeding activities were focused in areas of Weed class 3 and to a lesser extent class 4 areas. No Primary weeding was observed to have commenced in area 4, however significant actions have been undertaken in areas 5, 6 and 7.	Site surveys, staff interview, review of available documents.	Weeding in the Riparian Management Zone should focus on areas historically classed 3 or 4 in accordance with Wahroonga Estate BMP.	Onsite: undertaking site inspection of Riparian Management Zone and completion of 20 X 20 BioBanking quadrats to determine exotic species richness. Off-site: reviewing of documentation in the nature of monitoring reports.	Y
3.2 Soil stabilisation is a high priority when managing this zone.	Stabilisation works and erosion issues are detailed in each BMP report. Stabilisation works undertaken include plantings and earthworks where required. Soil stabilisation devices were observed in place through this area including areas 5 and 6. BMP 2012 describes the 1 in 100 year storm events prior to the implementation of the BMP and resulting considerable additional storm water erosion issues. BMP 2012 describes how ACA have undertaken a review of the adequacy of the current approved stormwater planning and proactively discussed with Council cooperative approaches to stormwater management., including ACA Director, Kelvin Peuser, contacting the council prior to and following the start of the BMP regarding council's involvement in relation to stormwater drainage from Elizabeth Street.	Site surveys, staff interview, review of available documents.	Undertake high priority soil stabilisation when managing Riparian Management Zone in accordance with the Wahroonga Estate BMP.	Onsite: undertaking site inspection of Riparian Management Zone. Off-site: A review of documentation to confirm that high priority soil stabilisation has been undertaken in accordance with the Wahroonga Estate approved BMP when managing the Riparian Management Zone.	Y

3.3 Other degraded areas requiring more regular attention includes polygon 4 which follows The Comenarra Parkway, parts of polygons 5, 6, and 7 (see Figure 3.1 &Table 3.3).	Stormwater run-off from 5 assets managed by Ku-ring-gai Municipal Council (KMC) flows into the site at five locations and was reported to have caused erosion and weed spread issues. In particular, the area adjacent to Elizabeth Street has been affected by concentrated water flows resulting from the sealing of gutters on this street by KMC Flows from the gutters are directed to a culvert which drains to the site and has resulted in scouring. ACA has approached KMC a number of times regarding impacts from council managed assets and to request assistance with mitigating the issues, but KMC has not committed to any action. A range of evidence was sighted to support this (e.g. email from Kelvin Peuser (ACA) to Ross Guerra (KMC) on 27/9/2011 also, 'Report for the Hydrology Chapter of Wahroonga Estate' by Frances O'Brien 8/2/2014). The audit site inspection confirmed primary weeding activities were focused in areas of Weed class 3 and to a lesser extent class 4 areas. No Primary weeding was observed to have commenced in area 4, however significant actions have been undertaken in areas 5, 6 and 7. The failure to perform sufficient weeding in Area 4 constitutes a non-compliance.	Site surveys, staff interview, review of available documents.	Undertake weeding and soil stabilisation within the Riparian Management Zone in accordance with the Wahroonga Estate BMP (polygons 4 - 7).	Onsite: undertaking site inspection of Riparian Management Zone and completion of 20 X 20 BioBanking quadrats to determine exotic species richness. Off-site: reviewing of documentation in the nature of monitoring reports.	N
3.4 Forest edges should also be monitored regularly as edge effects encourage weed growth.	Refer to 1.1 above. The BMP reports outline edge effects e.g. the 2014 report notes that stormwater run-off from the SAN Hospital site have caused 'considerable' erosion and pollution issues. Correspondence between the grounds team and the managers of the hospital site is include in the 2014 report and the auditor sighted quotes from John Parish Plumbing (20/5/2015) and Penrith Lakes Plumbing (20/5/2015) for undertaking works to mitigate these impacts. Degradation of Forest edges Weed spread is monitored through weekly site inspections of sections of the site by the Grounds and Projects Supervisor and Technical Research Officer. Each week a different section of the site (from a total of 4 sections) is focused on. The results of this survey are used to program weed control works for the coming week. The weed spread map is updated on an annual basis and photographic records are also taken on an annual basis and detailed in each BMP report.	Site surveys, staff interview, review of available documents.	Monitor forest edges regularly as edge effects encourage weed growth.	Onsite: undertaking site inspection of Riparian Management Zone and completion of 20 X 20 BioBanking quadrats to determine exotic species richness. Off-site: reviewing of documentation in the nature of monitoring reports.	Y

Vegetation Management Plan - Condition 4	**4.4 Vegetation Management Requirements:** **4.4.1 Riparian Management Zone** **ii. Revegetation** **Plantings of native tubestock will commence as scheduled within Table 3.3 of the BMP once weeds are controlled within these areas. Areas receiving revegetation in this management zone include; Area 1 and Area 2 (see Figure 4.1 of the BMP).** **Area 1:** **· This area will require the control of exotic grasses with herbicide spray and the control of woody weeds using the cut and paste method.** **· Lawn areas may require ripping to loosen soils.** **· Ripping is to occur two weeks after herbicide application to ensure herbicide translocation throughout the groundcovers.** **· Once selected areas are ripped and weeds are controlled, a blanketing of imported mulch 100mm thick can be applied.** **· The mulch must be weed free certified.** **· Once mulch has been applied, native tubestock will be installed. Supplementary plantings within this area will aim to recreate the structure and floristics of the natural community (SSGF) and will be carried out as follows:** **- Replanting of additional canopy species will be carried out in areas where the remnant canopy is relatively open;** **- Replanting of shrubs and small trees will be carried out to spacing indicated in Appendix C.2;** **- Replanting of herbs and grasses will be performed where the understorey is sparse, or in areas where significant weed removal has created a lack of native groundcover vegetation;** **- Planted tubestock should receive generous watering prior to being planted and after; and** **- Tubestock will require regular watering during their establishment period and as part of maintenance.**				
	Area 2: **· This area will require revegetation as it is dominated by exotic canopy trees and shrubs and weed control efforts will result in the removal of most of the vegetation.** **· Once weeds are removed using cut and paste methods, a blanketing of mulch 100mm thick can be applied.** **· The mulch must be weed free certified.** **· Sediment fences should be installed upslope of Area 2 to reduce scour and soil transportation.** **· There is evidence of scour from stormwater outlets which need to be remediated prior to any mulching or plantings.** **· Once mulch has been applied native tubestock can be installed.** **· Supplementary plantings within this area will aim to recreate the structure and floristics of the natural community (SSGF) and will be carried out as follows:** **- Replanting of additional canopy species will be carried out in areas where the remnant canopy is relatively open;** **- Replanting of shrubs and small trees will be carried out to spacing indicated in Appendix C.2;** **- Replanting of herbs and grasses will be performed where the understorey is sparse, or in areas where significant weed removal has created a lack of native groundcover vegetation;** **- Planted tubestock should receive generous watering prior to being planted and once installed to bed them in and remove air pockets around the roots,** **- Tubestock will require regular watering during their establishment period and as part of maintenance.**				
4.0 Riparian Management Zone Revegetation will be undertaken in accordance with the BMP.	Progressive revegetation works were identified by the audit site inspection within weed areas mapped in figure 3.1 of the BMP, 8, 6, 7, 10, 12 and 13. No obvious application of mulch was observed, however planting included a selection of species from both understorey and shrub and canopy layers. Planting densities appeared to be approximate and at spacing identified in BMP. Additional species may be required to meet floristics requirements for SSGF in accordance with the BMP. It is noted that none of the species identified in the BMP as dominant species in SSGF understorey were observed in plantings. Species observed in planting and listed in Table C.2 include Tristaniopsis laurina, Omalanthus populifolius Lomandra longifolia. The BMP reports outline revegetation activities undertaken across the site. Revegetation activities in these reports appears to have followed the BMP requirements.	Staff interviews, review of available documents	Undertake Riparian Management Zone Revegetation in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of Riparian Management Zones and complete a 20 X 20 m BioBanking quadrat to determine vegetation characteristics. Off-site: A review of documentation to confirm that Riparian Management Zone Revegetation has been be undertaken in accordance with the approved BMP.	N
4.1 Plantings of native tubestock will commence as scheduled within Table 3.3 of the BMP once weeds are controlled within these areas. Areas receiving revegetation in this management zone include; Area 1 and Area 2 (see Figure 4.1 of the BMP).	Tubestock planting has been undertaken in the required areas, if suitable following weed control. This is detailed in the annual BMP reports. A detailed report is provided in each report for each area. The audit site inspection confirmed primary weeding activities including significant actions have been undertaken in revegetation areas 1. prior to undertaking plantings	Staff interviews, review of available documents	Undertake plantings of native tubestock in accordance with Table 3.3 of the Wahroonga Estate BMP.	On-site: undertaking site inspection of Area 1 and Area 2. Off-site: A review of documentation to confirm that once weeds were controlled within Areas 1 and 2, plantings of native tubestock commenced as scheduled within Table 3.3 of the approved BMP.	Y

4.2 Area 1:			Area 1:		
4.2.1 This area will require the control of exotic grasses with herbicide spray and the control of woody weeds using the cut and paste method.	Herbicides are used for weed control activities in Area 1, as outlined by the annual BMP reports 2012 to 2014. Evidence of controlling grasses (Ehrharta) using Fusillade and Paspalum dilatatum with Roundup. Woody weed control using cut and paste 50% Roundup Bioactive and Mark-It dye was provided in BMP 2012	Staff interviews, review of available documents	Undertake weed control (exotic grasses) in accordance with Wahroonga Estate BMP.	On-site: undertaking site inspection of Area 1 and undertake 20 X 20 m BioBanking quadrats to determine weed species richness and % cover. Off-site: A review of documentation to confirm that control of exotic grasses with herbicide spray and the control of woody weeds using the cut and paste method has been undertaken in Area 1.	Y
4.2.2 Lawn areas may require ripping to loosen soils.	Ripping has not been undertaken in lawn areas as it has been determined to be unnecessary. As outlined in the 2012 BMP report, application of herbicides to these areas have resulted in a 'self-mulching effect' that has remedied the effects of compaction in this area.	Staff interviews, review of available documents	Undertake ripping in lawn areas, where required, to loosen soils in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of Area 1. Off-site: A review of documentation to confirm that lawn areas are ripped to loosen soils, if required.	Y
4.2.3 Ripping is to occur two weeks after herbicide application to ensure herbicide translocation throughout the groundcovers.	Refer to requirement 4.2.2.	NA	Undertake ripping in lawn areas, where required, two weeds after herbicide application in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of Area 1. Off-site: reviewing of documentation in the nature of ripping and herbicide application records.	NA
4.2.4 Once selected areas are ripped and weeds are controlled, a blanketing of imported mulch 100mm thick can be applied.	Mulching has not been undertaken as these areas have not been ripped and a 'self mulching effect' has occurred through the use of herbicide, which has seen dead grass build up in areas which would have been mulched (refer to page 19 of 2012 BMP report).	Staff interviews, review of available documents	Carry out blanketing of imported mulch 100m thick after areas are ripped in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of Area 1. Off-site: A review of documentation to confirm that once selected areas were ripped and weeds controlled, a blanketing of imported mulch 100mm thick was applied.	O
4.2.5 The mulch must be weed free certified.	No mulch has been used - the grounds team noted that certified weed free mulch is a product that may not exist.	Staff interviews, review of available documents	Mulch must be weed free certified.	Off-site: reviewing documentation in the nature of records confirming use of weed free certified mulch.	NA
4.2.6 Once mulch has been applied, native tubestock will be installed. A planting list for SSGF has been provided in Appendix C.2. Supplementary plantings within this area will aim to recreate the structure and floristics of the natural community (SSGF) and will be carried out as follows:	The audit site inspection observed plantings of canopy, understorey and shrub layers within area 1. Planting densities appeared to be approximate and at spacing identified in BMP. Additional species may be required to meet floristics requirements for SSGF in accordance with the BMP. It is noted that none of the species identified in the BMP as dominant species in SSGF understorey were observed in plantings. However planted understorey species did consist of some species from Appendix C Species list and natural regeneration is taking place	Staff interviews, review of available documents	Install native tubestock, once mulch has been applied in according with the SSGF planting list provided in Appendix C.2.	On-site: undertaking site inspection of Area 1 and complete a 20 X 20 m BioBanking quadrat to confirm species present. Off-site: A review of documentation to confirm that native tubestock from the planting list for SSGF (Appendix C.2) were installed once mulch was applied.	N
4.2.7 Replanting of additional canopy species will be carried out in areas where the remnant canopy is relatively open;	Refer to requirement 4.2.6 Natural regeneration of Canopy species Syncarpia glomulifera were observed within BMP 2012 and additional planting of canopy species Blue Gum BMP 2014 was undertaken in areas of relatively open remnant canopy	NA	Carry out replanting of additional canopy species in areas where remnant canopy is relatively open.	On-site: undertaking site inspection of Area 1 and complete a 20 X 20 m BioBanking quadrat to confirm species present. Off-site: A review of documentation to confirm that replanting of additional canopy species has been carried out in areas where the remnant canopy was relatively open.	Y
4.2.8 Replanting of shrubs and small trees will be carried out to spacing indicated in Appendix C.2;	Refer to requirement 4.2.6 Natural regeneration of shrub and small tree species including Pittosporum undulatum were observed and replanting of shrub species Polyscias sambucifolia were undertaken in areas where understorey was sparse BMP 2012	NA	Carry out replanting of shrubs and small trees in accordance with spacing intervals outlined in Appendix C.2.	On-site: undertaking site inspection of Area 1 and complete a 20 X 20 m BioBanking quadrat to confirm species present. Off-site: A review of documentation to confirm that replanting of shrubs and small trees has been carried out to spacing indicated in Appendix C.2	Y
4.2.9 Replanting of herbs and grasses will be performed where the understorey is sparse, or in areas where significant weed removal has created a lack of native groundcover vegetation;	Refer to requirement 4.2.6 Natural regeneration assisted by reseeding of Dichondra repens (purchased) & Indigofera australis (collected) and planting of Juncus, Dianella BMP 2012 and Native mint (Mentha australis) seed spread in 2014 have occurred in areas where understorey is sparse	NA	Carry out replanting of herbs and grasses in areas where understorey is sparse or in areas where significant weed removal has created a lack of native groundcover vegetation.	On-site: undertaking site inspection of Area 1 and complete a 20 X 20 m BioBanking quadrat to confirm species present. Off-site: A review of documentation to confirm that replanting of herbs and grasses has been performed where the understorey was sparse, or in areas where significant weed removal created a lack of native groundcover vegetation.	Y
4.2.10 Planted tube stock should receive generous watering prior to being planted and after; and	Refer to requirement 4.2.6. Hand watering is referenced and referred to in BMP 2012 and 2014 which indicates that tubestock will be watered before and after planting.	NA	Water planted tubestock prior to and after being planted.	Off-site: reviewing documentation in the nature of records of watering regimes.	Y
4.2.11 Tubestock will require regular watering during their establishment period and as part of maintenance.	Refer to requirement 4.2.6 and 4.2.11. Hand watering is referenced and referred to in BMP 2012, 2014 and 2015 indicating watering during establishment period as part of maintenance.	NA	Water tubestock during their establishment period as part of their maintenance.	Off-site: reviewing documentation in the nature of records of watering regimes.	Y
4.3 Area 2:			Area 2:		
4.3.1 This area will require revegetation as it is dominated by exotic canopy trees and shrubs and weed control efforts will result in the removal of most of the vegetation. .	Grounds staff reported that Area 2 had been revegetated as required by the BMP and that revegetation work had actually gone beyond that required by the BMP in this area. The BMP annual reports describe that revegetation has been undertaken in that area. Observation from audit site 9, 10 and 11 indicated Revegetation works including exotic canopy removal had been undertaken. Significant exotic canopy remains upslope however it was unclear if this was within or outside of the area 2. revegetation boundary	Staff interviews, review of available documents	Carry out revegetation in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of Area 2. Off-site: A review of documentation to confirm that revegetation of Area 2 has occurred in accordance with the approved BMP.	U

4.3.2 Once weeds are removed using cut and paste methods, a blanketing of mulch 100mm thick can be applied.	Mulch was applied to areas to be planted in Area 2 after cut and paste weeding methods as outlined in the annual BMP reports, however no mention of depth.	Staff interviews, review of available documents	Carry out blanketing of imported mulch 100m thick after areas are ripped in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of Area 2. Off-site: A review of documentation to confirm that a blanketing of mulch 100mm thick was applied once weeds were removed using cut and paste methods.	U
4.3.3 The mulch must be weed free certified.	The grounds staff manager stated that he enquired with a number of sources about the availability of 'certified weed free mulch' and could not find any. The mulch applied therefore was not 'certified weed free'. Recommendation - review the availability of 'certified weed free mulch' and use this if available. If not remove this requirement from the BMP.	Staff interview	Mulch must be weed free certified.	Off-site: reviewing documentation in the nature of records confirming use of weed free certified mulch.	N
4.3.4 Sediment fences should be installed upslope of Area 2 to reduce scour and soil transportation.	Observation from audit sites 9, 10 and 11 indicated Revegetation works including some sedimentation fences had been installed and no scour or erosion issues were identified.	Site inspection	Install sediment fences upslope of Area 2 in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of Area 2 sediment fences. Off-site: A review of documentation to confirm that sediment fences were installed upslope of Area 2 to reduce scour and soil transportation.	Y
4.3.5 There is evidence of scour from stormwater outlets which need to be remediated prior to any mulching or plantings.	No scour or erosion issues were observed during site inspections.	Site inspection	Remediate scouring from stormwater outlets, where appropriate, prior to any mulching or plantings.	On-site: undertaking site inspection of Area 2. Off-site: reviewing documentation in the nature of records confirming remediation if required.	Y
4.3.6 Once mulch has been applied native tubestock can be installed. A planting list for SSGF has been provided in Appendix C.2	The annual BMP reports provide an overview of the plantings undertaken in Area 2, but do not provide lists of the specific plants used (e.g.. Page 16, 2012 report). The requirements below examine the implementation of this planting list in more detail. It is recommended that the BMP reports provide a review of how plantings undertaken meet the requirements of the BMP. Native tubestock and natural regeneration have been used in area since 2009 (Prior to BMP) (as referenced in 2013 BMP)	Staff interviews, review of available documents	Install native tubestock, once mulch has been applied in according with the SSGF planting list provided in Appendix C.2.	On-site: undertaking site inspection of Area 2 and complete a 20 X 20 m BioBanking quadrat to confirm species present. Off-site: A review of documentation to confirm that once mulch was applied native tubestock were installed from the planting list for SSGF (provided in Appendix C.2)	U
4.3.7 Supplementary plantings within this area will aim to recreate the structure and floristics of the natural community (SSGF) and will be carried out as follows:	The annual BMP reports state that *Solanum laciniatum* has been planted, or grows in Area 2 as a 'pioneering plant' which provides a shading understorey and groundcover. It is noted that Solanum laciniatum is not listed in the BMP AC.2 recommended plantings for SSGF. ACA reported that the reference to this species in the annual BMP report is incorrect and the species planted is actually Solanum Aviculare, which is listed in the BMP. Solanum aviculare is not listed in the BMP Appendix C planting lists for either the STIF or SSGF vegetation.	Staff interviews, review of available documents	Carry out supplementary plantings within Area 2.	On-site: undertaking site inspection of Area 2 and complete a 20 X 20 m BioBanking quadrat to confirm species present. Off-site: A review of documentation to confirm that supplementary plantings within Area 2 aim to recreate the structure and floristics of the natural community (SSGF)	N
4.3.8 Replanting of additional canopy species will be carried out in areas where the remnant canopy is relatively open;	The audit site inspection observed plantings within area 2, however no additional canopy planting were required at the time of inspection due to the lack of relatively open canopy areas and natural regenerating canopy species i.e. Blue gum and lily pilly (ref BMP 2014) . Additional species may be required to meet floristics requirements for SSGF in accordance with the BMP. Additional Canopy planting may be required after the successful establishment of the understorey revegetation works and naturally regenerating canopy	Staff interviews, review of available documents	Carry out replanting of additional canopy species in areas where remnant canopy is relatively open.	On-site: undertaking site inspection of Area 2 and complete a 20 X 20 m BioBanking quadrat to confirm species present. Off-site: A review of documentation to confirm that replanting of additional canopy species has been carried out in areas where the remnant canopy is relatively open.	NA
4.3.9 Replanting of shrubs and small trees will be carried out to spacing indicated in Appendix C.2;	The audit site inspection observed plantings of canopy, understorey and shrub layers within area 2. Planting densities appeared to be approximate and at spacing identified in BMP. diversity of species planted in the understorey is largely limited to Lomandra longifolia and additional species may be required to meet floristics requirements for SSGF in accordance with the BMP. It is noted that none of the species identified in the BMP as dominant species in SSGF understorey were observed in plantings.	Staff interviews, review of available documents	Carry out replanting of shrubs and small trees in accordance with spacing intervals outlined in Appendix C.2.	On-site: undertaking site inspection of Area 2 and complete a 20 X 20 m BioBanking quadrat to confirm species present. Off-site: A review of documentation to confirm that replanting of shrubs and small trees has been carried out to spacing indicated in Appendix C.2	Y

4.3.10 Replanting of herbs and grasses will be performed where the understorey is sparse, or in areas where significant weed removal has created a lack of native groundcover vegetation;	The audit site inspection observed plantings of canopy, understorey and shrub layers within area 2. Planting densities appeared to be approximate and at spacing identified in BMP. Additional species may be required to meet floristics requirements for SSGF in accordance with the BMP. It is noted that none of the species identified in the BMP as dominant species in SSGF understorey were observed in plantings. Native mint (Mentha australis) was spread along bare patches exposed to erosion (BMP 2014). BMP 2012 referenced additional planting in September 2011 of understorey species following weeding however does not provide a list of species.	Staff interviews, review of available documents	Carry out replanting of herbs and grasses in areas where understorey is sparse or in areas where significant weed removal has created a lack of native groundcover vegetation.	On-site: undertaking site inspection of Area 2 and complete a 20 X 20 m BioBanking quadrat to confirm species present. Off-site: A review of documentation to confirm that replanting of herbs and grasses has been performed where the understorey is sparse, or in areas where significant weed removal has created a lack of native groundcover vegetation.	Y
4.3.11 Planted tubestock should receive generous watering prior to being planted and once installed to bed them in and remove air pockets around the roots.	Following planting, watering is undertaken 'as required' using manual observations and a rain gauge to judge when it may be required. Watering is undertaken using a 200 L water cart and a 90 L 'ATU'.	Staff interviews, review of available documents	Water planted tubestock prior to and after being planted.	Off-site: reviewing documentation in the nature of records of watering regimes.	Y
4.3.12 Tubestock will require regular watering during their establishment period and as part of maintenance.	Refer to requirement 4.3.11	NA	Water tubestock during their establishment period as part of their maintenance.	Off-site: reviewing documentation in the nature of records of watering regimes.	Y
Vegetation Management Plan - Condition 5	**4.4 Vegetation Management Requirements:** **4.4.2 Asset Protection Zone (APZ)** **An APZ is a requirement of the NSW Rural Fire Service.** **I. <u>Weeding</u>** **APZs require regular management of understorey vegetation to reduce fuel loads. This requirement encourages weed species to colonise, producing weed sources and points of entry into bushland. Weed control efforts within these areas should aim to target known invasive species (refer to Table 3.3 of the BMP). All native trees will be retained. If native canopy trees die, they will be replaced by trees of the same species.**				
5.0 Asset Protection Zone Weeding should be undertaken in accordance with the BMP:	The annual reports state the APZ's have been kept adequately clear. Site inspection observed areas of APZ being managed for weeds.	Review of available documents	Asset Protection Zone weeding should be undertaken in accordance with the Wahroonga Estate BMP. All native trees will be retained, and if any native canopy trees die they will be replaced by trees of the same species.	On-site: undertaking site inspection of Asset Protection Zone. Off-site: A review of documentation to confirm that Asset Protection Zone Weeding has been undertaken in accordance with the approved BMP.	Y
5.1 Weed control efforts within these areas should aim to target known invasive species (refer to Table 3.3 of the BMP).	Refer to previous comments on weed control. The grounds team have developed a detailed 'weed schedule' which includes the weeds identified in the BMP and a number of other weeds that have been found on-site since. Weeding is undertaken by the 10-person grounds team generally on a daily basis using the most effective methods that have been found to control each species of weed. Primary weeding activities were observed in the majority of audits sites within Weed class 1 and 2 categories reducing weed cover <30%. Partial Primary weeding had commenced in a number of class 3 areas and some class 4 areas resulting in weed cover to be reduced in some cases <30% .	Staff interviews, review of available documents	Weed control efforts should aim to target known invasive species in accordance with Table 3.3 of the Wahroonga Estate BMP.	On-site: undertaking site inspection of Asset Protection Zone and completing 20 X 20 m BioBanking quadrats to determine exotic species richness. Off-site: A review of documentation to confirm that weed control efforts within these areas have aimed to target known invasive species (refer to Table 3.3 of the approved BMP).	Y
5.2 All native trees will be retained.	The audit found that no native trees have been actively removed from any bushland areas.	Staff interviews, site inspection	Retain all native trees.	On-site: undertaking site inspection of Asset Protection Zone. Off-site: A review of documentation to confirm that all native trees are retained.	Y
5.3 If native canopy trees die, they will be replaced by trees of the same species.	No evidence of significant canopy tree death was observed. Staff reported that no incidents of canopy tree death have occurred.	Staff interviews, site inspection	Replace native canopy trees that die with the same species.	On-site: undertaking site inspection of Asset Protection Zone. Off-site: where applicable review documentation in the nature of records for replacing native canopy trees that have died and been replaced.	Y

Vegetation Management Plan - Condition 6	**4.4 Vegetation Management Requirements:** **4.4.2 Asset Protection Zone (APZ)** **ii. Revegetation** **No revegetation is proposed within this management zone except the replacement of native canopy trees when existing trees die.**				
6.1 No revegetation is proposed within the Asset Protection Zone except with the replacement of native canopy species when existing trees die.	No revegetation has been undertaken in the APZ zone.	Staff interviews, site inspection	No revegetation is proposed within the Asset Protection Zone except with the replacement of native canopy species when existing trees die.	On-site: undertaking site inspection of Asset Protection Zone. Off-site: where applicable review documentation in the nature of records for replacing native canopy trees that have died and been replaced.	Y
Vegetation Management Plan - Condition 7	**4.4 Vegetation Management Requirements:** **4.4.3 Sydney Turpentine Ironbark Forest Management Zone** **This vegetation community has been designated its own management zone because of its conservation significance (Figure 4.1 of the BMP) and to satisfy Commonwealth Government Condition 2 b (I) (see Section 1.4 of the BMP).** **The STIF occurring within the E2 zone conforms to a Critically Endangered Ecological Community (CEEC) listed under the EPBC Act (Figure 2.1 of the BMP). According to mapping by SKM (2009), this vegetation community occurs as two condition classes within the E2 zone; very high and moderate high condition.**				
7.1 Sydney Turpentine Ironbark Forest Management Zone Fire regimes must be undertaken In accordance with the BMP. See burning schedules in the Fire Management Plan, Chapter 5 of the BMP.	No controlled burns or accidental fires have occurred at the site since the BMP was developed.	Staff interviews, site inspection, review of available documents	Sydney Turpentine Ironbark Forest Management Zone Fire regimes must be undertaken In accordance with Chapter 5 of the Wahroonga BMP.	On-site: undertaking site inspection of STIF Management Zone. Off-site: reviewing documentation in the nature of burning schedules.	N/A
7.2 Fuel reduction as part of bushfire management must be considered as the vegetation is bushfire prone and adjacent urban development.	The grounds staff manager reported that ongoing attempts have been made to organise hazard reduction burns for the site and that these commenced prior to development of the BMP. NSW Fire and Rescue have been approached a number of times since the BMP was developed to organise a hazard reduction burn, but to date a burn has not proceeded due to a range of issues raised by NSW Fire and Rescue. These issues include: wet conditions and proximity to schools, residential areas and major roads (which may be affected by smoke). A burn certificate was issued by NSW Fire and Rescue in 2012 and re-issued in 2013 and 2014. The BMP annual reports detail the outcomes of correspondence with NSW Fire and Rescue and show that ACA has been proactive in arranging a hazard reduction burn for the site. Correspondence between ACA and NSW Fire and Rescue was observed by the auditors during the audit (e.g. emails between Graham Wegener (ACA) and Robert Strauch (NSW Fire and Rescue in July 2014).	Staff interviews, review of available documents	Sydney Turpentine Ironbark Forest Management Zone Fire regimes must be undertaken In accordance with Chapter 5 of the Wahroonga BMP.	On-site: undertaking site inspection of STIF Management Zone. Off-site: reviewing documentation in the nature of burning schedules.	Y
Vegetation Management Plan - Condition 8	**4.4 Vegetation Management Requirements:** **4.4.3 Sydney Turpentine Ironbark Forest Management Zone** **ii. <u>Precautions against Phytophthora</u>** **To inhibit the spread of Phytophthora, the NSW Government has developed the following procedures (DECC (NSW), 2008b):** **· Sanitation of tools and machinery – tools must have all traces of soil washed off then be regularly drenched in a solution of disinfectant. (A solution of one per cent bleach is sufficient for disinfecting machinery.) When planting several plants, disinfect tools in a portable container of disinfectant before and after planting each one;** **· Boots and tyres – soil clinging to boots and tyres is a common vector in transporting Phytophthora. To limit the spread of this fungus, ensure all soil is scrubbed clean and the surface is disinfected (using a one per cent solution of bleach, or a 70 per cent solution of methylated spirit. Using disinfectant according to the manufacturer's directions is also suitable.); and** **· Infected vegetation – Phytophthora can persist for many years in the dead organic tissue of any trees it has infected. Infected vegetation must be disposed of carefully. Never woodchip any vegetation suspected of being infected by Phytophthora.** **These procedures will be implanted during any works being undertaken in this community on the subject site.**				

8.0 The following procedures will be implemented during any works in the Sydney Turpentine Ironbark Forest Management Zone as a precaution against Phytophthora: -Sanitation of tools and machinery – tools must have all traces of soil washed off then be regularly drenched in a solution of disinfectant. When planting several plants, disinfect tools in a portable container of disinfectant before and after planting each one; - Boots and tyres – ensure all soil is scrubbed clean and the surface is disinfected (using a one per cent solution of bleach, or a 70 per cent solution of methylated spirit. Using disinfectant according to the manufacturer's directions is also suitable.); and · Infected vegetation – Infected vegetation must be disposed of carefully. Never woodchip any vegetation suspected of being infected by Phytophthora.	The grounds manager reported that no incidences of ground-based phytophthora have been observed across the site. Some cases of aerial phytophthora have been observed (i.e.. trees dying from the top down). Due to this, the procedures for managing ground-based fungus specified in the BMP have not been implemented. Sterilised equipment is used however, when vegetation that is suspected to be affected by aerial phytophthora is being removed. Such vegetation is collected and disposed of as green waste, which is collected by KMC. No visible infection of phycophorum were observed within this zone	Staff interviews, site inspection	The following procedures will be implemented during any works in the Sydney Turpentine Ironbark Forest Management Zone as a precaution against Phytophthora: -Sanitation of tools and machinery – tools must have all traces of soil washed off then be regularly drenched in a solution of disinfectant. When planting several plants, disinfect tools in a portable container of disinfectant before and after planting each one; - Boots and tyres – ensure all soil is scrubbed clean and the surface is disinfected (using a one per cent solution of bleach, or a 70 per cent solution of methylated spirit. Using disinfectant according to the manufacturer's directions is also suitable.); and - Infected vegetation – Infected vegetation must be disposed of carefully. Never woodchip any vegetation suspected of being infected by Phytophthora.	On-site: undertaking site inspection of STIF Management Zone. Off-site: where appropriate review documentation in the nature of records pertaining to Phytophthora.	N
8.1 **Sanitation of tools and machinery:**			Sanitation of tools and machinery:		
8.1.1 Tools must have all traces of soil washed off then be regularly drenched in a solution of disinfectant. (A solution of one per cent bleach is sufficient for disinfecting machinery.)	Refer to Requirement 8.0	NA	Carry our sanitation of tools and machinery in accordance with Wahroonga Estate BMP.	On-site: undertaking site inspection of STIF Management Zone for presence of Phytophthora. Off-site: A review of documentation to confirm that sanitation of tools & machinery is undertaken in accordance with the approved BMP i.e. that all traces of soil are washed off tools which are then drenched in a solution of disinfectant.	N
8.1.2 When planting several plants, disinfect tools in a portable container of disinfectant before and after planting each one.	Refer to Requirement 8.0	NA	Carry our sanitation of tools and machinery in accordance with Wahroonga Estate BMP.	On-site: undertaking site inspection of STIF Management Zone for presence of Phytophthora. Off-site: A review of documentation to confirm that sanitation of tools & machinery is undertaken in accordance with the approved BMP i.e. that tools are disinfected before & after planting each plant.	N
8.2 **Boots and tyres:**			Boots and tyres:		
8.2.1 To limit the spread of this fungus, ensure all soil is scrubbed clean and the surface is disinfected (using a one per cent solution of bleach, or a 70 per cent solution of methylated spirit. Using disinfectant according to the manufacturer's directions is also suitable.)	Refer to Requirement 8.0	NA	Carry our sanitation of tools and machinery in accordance with Wahroonga Estate BMP.	On-site: undertaking site inspection of STIF Management Zone for presence of Phytophthora. Off-site: A review of documentation to confirm that sanitation of boots & tyres is undertaken in accordance with the approved BMP i.e. that all soil is scrubbed clean and the surface is disinfected.	N
8.3 **Infected vegetation:**			Infected vegetation:		
8.3.1 Infected vegetation must be disposed of carefully.	Vegetation that is suspected to be infected is collected in a skip waste bin and disposed of as green waste (collected by KMC and disposed of to landfill).	Staff interviews	Dispose of infected vegetation in accordance with Wahroonga Estate BMP.	On-site: undertaking site inspection of STIF Management Zone for presence of Phytophthora. Off-site: reviewing of documents in the nature of records regarding the disposal of infected vegetation where applicable.	Y
8.3.2 Never woodchip any vegetation suspected of being infected by Phytophthora.	Suspect infected vegetation is not re-used on site and is segregated from other green waste for disposal in the site's green waste bin.	Staff interviews	Never woodchip any vegetation suspected of being infected by Phytophthora.	On-site: undertaking site inspection of STIF Management Zone for presence of Phytophthora. Off-site: A review of documentation to confirm that vegetation suspected of being infected is disposed of in accordance with the approved BMP & never wood chipped.	Y
8.4 These procedures will be implanted during any works being undertaken in this community on the subject site.	Refer to Requirements 8.3.1 and 8.3.2.	NA	Carry our sanitation of tools and machinery during all works undertaken in this community on site in accordance with Wahroonga Estate BMP.	On-site: undertaking site inspection of STIF Management Zone for presence of Phytophthora. Off-site: A review of documentation to confirm that procedures are implanted during any works undertaken in this community on the subject site.	N

Vegetation Management Plan - Condition 9	**4.4 Vegetation Management Requirements:** **4.4.3 Sydney Turpentine Ironbark Forest Management Zone** **iii. <u>Weeding</u>** **A strict weed control program followed by maintenance will ensure the integrity of the STIF within the E2 zone is improved and maintained in perpetuity. Regular monitoring and control of weed outbreaks will ensure this threatened ecological community is protected from threats such as weed invasion.** **STIF Management Zone occurs in two areas of the subject land and varies in condition. There are areas within this management zone which require assisted regeneration. These areas are shown in hash in Figure 4.1 of the BMP.** **During maintenance weeding periodic weed sweeps removing potential seed sources will be sufficient to ensure a high quality of bushland is maintained in the long term. Weed efforts during maintenance should targets areas associated with weed polygons 17, 13 and parts of 15 (see Table 3.3 for weed species). Areas 3 and 4 which require revegetation should be prepared accordingly, and are explained in more detail in the BMP.**				
9.0 Sydney Turpentine Ironbark Forest Management Zone Weeding should be undertaken in accordance with the BMP	Refer to previous comments on weed control. The grounds team have developed a detailed 'weed schedule' which includes the weeds identified in the BMP and a number of other weeds that have been found on-site since. Weeding is undertaken by the 10-person grounds team generally on a daily basis using the most effective methods that have been found to control each species of weed. Primary weeding activities were observed in the majority of audits sites within STIF Weed class 1 and 2 categories reducing weed cover <30%. Partial Primary weeding had commenced in a number of class 3 areas (audit sites 14, 19 and 20) resulting in weed cover to be reduced in some cases <30% . However audit sites (26 and 27) within class 4 weed areas have a >70% exotic understorey cover and do not match current weed class classification provided. Weeding has been targeted and commenced across large areas of weed polygons 17, 13 and 15 in accordance with the BMP however these have not been completed at the time of the audit	Staff interviews, review of available documents, site inspection	Sydney Turpentine Ironbark Forest Management Zone Weeding should be undertaken in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of STIF Management Zone and completing 20 X 20 m BioBanking quadrats to determine weed species richness and % cover. Off-site: A review of documentation to confirm that Sydney Turpentine Ironbark Forest Management Zone Weeding is being undertaken in accordance with the approved BMP.	Y
9.1 A strict weed control program followed by maintenance will ensure the integrity of the STIF within the E2 zone is improved and maintained in perpetuity.	Refer to Requirement 9.0 The weed control Program is currently improving the integrity of STIF across the E2 zone, however additional ongoing maintenance of the weeds throughout will be required	NA	Carry out Sydney Turpentine Ironbark Forest Management Zone weeding in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of STIF Management Zone and completing 20 X 20 m BioBanking quadrats to determine weed species richness and % cover. Off-site: A review of documentation to confirm that a strict weed control program followed by maintenance is being undertaken to ensure the integrity of the STIF within the E2 zone is improved and maintained in perpetuity.	Y
9.2 Regular monitoring and control of weed outbreaks will ensure this threatened ecological community is protected from threats such as weed invasion.	A weekly site inspection is undertaken by the Grounds and Projects Supervisor and Technical Research Officer. Each week a different section of the site (from a total of 4 sections) is focused on. Weeding activities are based on these site inspections and a weed schedule that has been discussed in detail above.	Staff interviews, review of available documents, site inspection	Regular monitoring and control of weed outbreaks should be undertaken in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of STIF Management Zone. Off-site: reviewing of documents in the nature of records of weed monitoring.	Y
9.3 STIF Management Zone occurs in two areas of the subject land and varies in condition. There are areas within this management zone which require assisted regeneration. These areas are shown in hash in Figure 4.1.	The annual BMP reports show that revegetation activities have occurred in the STIF areas, although it is not clear if these activities were undertaken in the areas specifically marked for revegetation in the BMP. No revegetation was observed within the specific Area 3 however plantings have been undertaken in areas immediately adjoining this area. Planting in area 4 were observed as per the BMP requirements. Recommendation - a review of planting requirements and plantings undertaken for STIF areas should be undertaken against the requirements of the BMP. Areas of STIF requiring assisted regeneration have been undertaken within the site and were observed during site inspections and stated in BMP 2012 "Revegetation commenced in Area 4 with the planting of Juncus, Dianella and Casuarina along the water ways and slopes"	Staff interviews, review of available documents, site inspection	Carry out assisted regeneration of STIF Management Zones in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of STIF Management Zone. Off-site: A review of documentation to confirm that assisted regeneration is occurring in the areas shown in hash in Figure 4.1.	Y

9.4 During maintenance weeding periodic weed sweeps removing potential seed sources will be sufficient to ensure a high quality of bushland is maintained in the long term.	Refer to Requirement 9.0.	Staff interviews, review of available documents, site inspection	Carry out Sydney Turpentine Ironbark Forest Management Zone weeding should be undertaken in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of STIF Management Zone and completing 20 X 20 m BioBanking quadrats to determine weed species richness and % cover. Off-site: A review of documentation to confirm that during maintenance weeding periodic weed sweeps remove potential seed sources sufficient to ensure a high quality of bushland is maintained in the long term.	Y
9.5 Weed efforts during maintenance should targets areas associated with weed polygons 17, 13 and parts of 15 (see Table 3.3 for weed species). Refer to Table 3.3 for descriptions of weed species present.	Refer to Requirement 9.0 Weeding has been targeted within areas 17 13 and 15, as observed during site inspections and stated in STIF section of BMP 2012 "The primary weeds were Ehrharta (See photo 2.21, 2.22 beforehand after) which were controlled with Fusillade. Farmers Friends and Blackberry patches which were controlled with Roundup. Tradescantia patches were controlled with Starane, as were Lantana on the interface with good bush. (BMP 2012)	Staff interviews, review of available documents, site inspection	Carry out Sydney Turpentine Ironbark Forest Management Zone weeding should be undertaken in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of STIF Management Zone and completing 20 X 20 m BioBanking quadrats to determine weed species richness and % cover. Off-site: A review of documentation to confirm that weeding efforts during maintenance target areas associated with weed polygons 17, 13 and parts of 15 (see Table 3.3 for weed species).	Y
9.6 Areas 3 and 4 which require revegetation should be prepared accordingly, and are explained in more detail below.	The annual BMP reports state that revegetation has occurred in Areas 3 and 4. This includes detailed descriptions of preparation works BMP 2012 and photos BMP 2012 and 2014, contacting experts, John Moen from Antechinus Environmental Services as stated in BMP 2012. Revegetation planting were also observed during the site inspection in these areas to be generally consistent with BMP	Staff interviews, reviews of available documents	Carry out preparation of revegetation of Areas 3 and 4 in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of STIF Management Zone. Off-site: A review of documentation to confirm that preparation for revegetation of Areas 3 and 4 is undertaken in accordance with the approved BMP.	Y

Vegetation Management Plan - Condition 10	**4.4 Vegetation Management Requirements:** **4.4.3 Sydney Turpentine Ironbark Forest Management Zone** **iv. <u>Revegetation</u>** **a. Area 3** **Area 3 occurs in STIF vegetation north of the subject site (see Figure 4.1 of BMP). This area will require revegetation as the native vegetation in this area is sparse with little natural recruitment occurring.** **Plantings of native tubestock will commence once weeds are controlled within this area.** **Mulch will be limited to a ring around each planted tubestock to encourage natural regeneration in the spaces between tubestock.** **Imported mulch will be weed free certified.** **Supplementary plantings within this area will aim to recreate the structure and floristics of the natural community (STIF) and will be carried out as follows:** **· Replanting of additional canopy species will be carried out in areas where the remnant canopy is relatively open;** **· Replanting of shrubs and small trees will be carried out to spacing produced in Appendix C.1;** **· Replanting of herbs and grasses will be performed where the understorey is sparse, or in areas where significant weed removal has created a lack of native groundcover vegetation;** **· Planted tubestock will receive generous watering prior to being planted;** **· Each tubestock will be ring mulched and watered; and** **· Tubestock will require regular watering during their establishment period as part of maintenance.**				
10.0 Sydney Turpentine Ironbark Forest Management Zone Revegetation in Area 3 will commence once weeds are controlled within the area. Mulch will be limited to a ring around each planted tubestock, imported mulch will be weed free certified. Supplementary plantings within this area will be carried out as follows: · Replanting of additional canopy species will be carried out in areas where the remnant canopy is relatively open; · Replanting of shrubs and small trees will be carried out to spacing produced in Appendix C.1; · Replanting of herbs and grasses will be performed where the understorey is sparse, or in areas where significant weed removal has created a lack of native groundcover vegetation; · Planted tubestock will receive generous watering prior to being planted; · Each tubestock will be ring mulched and watered; and · Tubestock will require regular watering during their establishment period as part of maintenance.	The annual BMP reports show that weed control and clearing has been undertaken in Area 3 and that plantings have occurred in this area BMP 2014. Mulching of this area appears to have not been carried out prior to planting, instead hydroseeding has been used and native groundcovers have been established. A review of detailed lists of the species planted in this area (in BMP 2014) and site inspection observations of species planting with the Appendix C1 indicate that revegetation of Areas is in accordance with the BMP . Recommendation - a review of the planting requirements for the entire site should be undertaken against what has previously been planted. Any deficiencies or differences should be corrected.	Staff interviews, review of relevant documents, site inspection	Sydney Turpentine Ironbark Forest Management Zone Revegetation in Area 3 will commence once weeds are controlled within the area. Mulch will be limited to a ring around each planted tubestock, imported mulch will be weed free certified. Supplementary plantings within this area will be carried out as follows: · Replanting of additional canopy species will be carried out in areas where the remnant canopy is relatively open; · Replanting of shrubs and small trees will be carried out to spacing produced in Appendix C.1; · Replanting of herbs and grasses will be performed where the understorey is sparse, or in areas where significant weed removal has created a lack of native groundcover vegetation; · Planted tubestock will receive generous watering prior to being planted; · Each tubestock will be ring mulched and watered; and · Tubestock will require regular watering during their establishment period as part of maintenance.	On-site: undertaking site inspection of STIF Management Zone and complete a 20 X 20 m BioBanking quadrat to determine vegetation characteristics. Off-site: A review of documentation to confirm that Sydney Turpentine Ironbark Forest Management Zone Revegetation in Area 3 is being undertaken in accordance with the approved BMP.	N
10.1 Area 3 occurs in STIF vegetation north of the subject site (see Figure 4.1 of BMP). This area will require revegetation as the native vegetation in this area is sparse with little natural recruitment occurring.	Revegetation activities have occurred in Area 3, this is described in each annual BMP report. The species listed in planting lists of the BMP 2014 and observed during site inspection contains species generally consistent with the canopy shrub and understorey species listed in Appendix C1 and associated planting density. It is noted that the BMP 2014 questions the validity of the STIF vegetation mapping within the area 3 and considers it to be more closely aligned with SSGF. It is considered based on the site inspection to by a transitional zone and may require further investigation into the most appropriate vegetation type to guide future restoration works in this area	Review of available documents	Carry out revegetation of STIF vegetation in Area 3 in accordance with Wahroonga Estate BMP.	On-site: undertaking site inspection of STIF Management Zone. Off-site: A review of documentation to confirm that revegetation of STIF vegetation in Area 3 is being undertaken in accordance with the approved BMP.	Y

10.2 Plantings of native tubestock will commence once weeds are controlled within this area.	Revegetation in this area occurred following the clearing of all weeds, as outlined in the 2012 BMP report.	Review of available documents	Carry out planting of native tubestock after controlling weeds in accordance with Wahroonga Estate BMP.	On-site: undertaking site inspection of STIF Management Zone. Off-site: A review of documentation to confirm that planting of native tubestock after controlling weeds is being undertaken in accordance with the approved BMP.	Y
10.3 Mulch will be limited to a ring around each planted tubestock to encourage natural regeneration in the spaces between tubestock.	It was reported that mulching of individual tubestock plants has not been undertaken as it has been found to be unnecessary. Natural leaf litter, existing canopy cover and manual watering are considered to cover this.	Staff interviews, review of available documents	Carry out mulching (limited to ring around each planted tubestock) in accordance with Wahroonga Estate BMP.	On-site: undertaking site inspection of STIF Management Zone. Off-site: A review of documentation to confirm that mulch has been limited to a ring around each planted tubestock to encourage natural regeneration in the spaces between tubestock.	N
10.4 Imported mulch will be weed free certified.	Refer to Requirement 4.3.3.	NA	Mulch must be weed free certified.	Off-site: reviewing documentation in the nature of records confirming use of weed free certified mulch.	N
10.5 Supplementary plantings within this area will aim to recreate the structure and floristics of the natural community (STIF) and will be carried out as follows:	The audit site inspection observed plantings of canopy species Angophora costata in areas within and immediately adjoining Area 3. Planting densities appeared to be approximate and at spacing identified in BMP and in accordance with structural and floristic requirements of STIF. Recommendation: ongoing maintenance of plantings to determine if additional species or structure is required to meet floristics requirements for STIF in accordance with the BMP.	Staff interviews, review of available documents	Carry out supplementary plantings to recreate structure and floristics of STIF.	On-site: undertaking site inspection of STIF Management Zone and complete a 20 X 20 m BioBanking quadrat to confirm species present. Off-site: A review of documentation to confirm that supplementary plantings within Area 3 are aimed at recreating the structure and floristics of the natural community (STIF) and are carried out in accordance with the approved BMP.	Y
10.5.1 Replanting of additional canopy species will be carried out in areas where the remnant canopy is relatively open;	The audit site inspection observed plantings of canopy and subcanopy in areas of relatively open canopy within and immediately adjoining Area 3. Planting densities appeared to be approximate and at spacing identified in BMP. Angophora costata was observed in plantings of this area and is a dominant STIF canopy species. ACA reported that the STIF planting lists from the BMP were provided to an independent ecological consultant (Antechinus Environmental), who provided seeds for planting from that list. These seeds were hydroseeded in the STIF area. It appears that not all species listed in the BMP were not all available for propagation from either on-site sources or Antechinus Environmental. It is important to note that the source (or provenance) of seed used for revegetation of STIF areas should be from within the site or as close as possible. This approach is used to ensure the genetics of local biodiversity is maintained.	Staff interviews, review of available documents	Carry out replanting of additional canopy species in areas where remnant canopy is relatively open.	On-site: undertaking site inspection of STIF Management Zone and complete a 20 X 20 m BioBanking quadrat to confirm species present. Off-site: A review of documentation to confirm that replanting of additional canopy species has been carried out in areas where the remnant canopy is relatively open.	Y
10.5.2 Replanting of shrubs and small trees will be carried out to spacing produced in Appendix C.1;	The annual BMP reports provide an overview of the plantings undertaken in Area 3, but only the 2014 report provides a list of the species and numbers planted in this area. Planting densities are not recorded. The 2014 BMP report states that *'Although Area 3 is listed in the original BMP as located in STIF, a tributary runs through it and hence its inclusion under the Riparian Management Area'*. ACA staff stated during the audit that the vegetation mapping included in the BMP is incorrect and does not match the actual vegetation types in some areas. It appears that revegetation activities in Area 3 have therefore not followed the BMP. The audit site inspection observed plantings of shrubs and small trees in areas immediately adjoining Area 3. Planting densities appeared to be approximate and at spacing identified in BMP. Additional species may be required to meet floristics requirements for STIF in accordance with the BMP. Recommendation - revise the BMP using up to date vegetation mapping prepared by a suitably qualified and experienced botanist.	Staff interviews, review of available documents	Carry out replanting of shrubs and small trees in accordance with spacing intervals outlined in Appendix C.2.	On-site: undertaking site inspection of STIF Management Zone and complete a 20 X 20 m BioBanking quadrat to confirm species present. Off-site: A review of documentation to confirm that replanting of shrubs and small trees has been carried out to spacing as specified in Appendix C.1.	N
10.5.3 Replanting of herbs and grasses will be performed where the understorey is sparse, or in areas where significant weed removal has created a lack of native groundcover vegetation;	Annual BMP report indicate natural regeneration of understorey species is occurring throughout area 3. In addition ACA reported that replanting of herbs and grasses were undertaken via hydro seeding following significant weed removal or in areas with a sparse understorey. STIF planting lists from the BMP were provided to an independent ecological consultant (Antechinus Environmental), who provided seeds for planting from that list. These seeds were hydro seeded in the STIF area. It appears that not all species listed in the BMP were not all available for propagation from either on-site sources or Antechinus Environmental. It is important to note that the source (or provenance) of seed used for revegetation of STIF areas should be from within the site or as close as possible. This approach is used to ensure the genetics of local biodiversity is maintained.	NA	Carry out replanting of herbs and grasses in areas where understorey is sparse or in areas where significant weed removal has created a lack of native groundcover vegetation.	On-site: undertaking site inspection of STIF Management Zone and complete a 20 X 20 m BioBanking quadrat to confirm species present. Off-site: A review of documentation to confirm that replanting of herbs and grasses has been performed where the understorey is sparse, or in areas where significant weed removal has created a lack of native groundcover vegetation.	Y

10.5.4 Planted tubestock will receive generous watering prior to being planted;	Following planting, watering is undertaken 'as required' using manual observations and a rain gauge to judge when it may be required. Watering is undertaken using a 200 L water cart and a 90 L 'ATU'.	Staff interviews	Water planted tubestock prior to and after being planted.	Off-site: reviewing documentation in the nature of records of watering regimes.	Y
10.5.5 Each tubestock will be ring mulched and watered; and	Refer to Requirement 10.3	NA	Carry out ring mulching and watering in accordance with Wahroonga Estate BMP.	On-site: undertaking site inspection of STIF Management Zone. Off-site: A review of documentation to confirm that each tubestock has been ring mulched and watered in accordance with the approved BMP.	N
10.5.6 Tubestock will require regular watering during their establishment period as part of maintenance.	Refer to Requirement 10.5.4	NA	Water tubestock during their establishment period as part of their maintenance.	Off-site: reviewing documentation in the nature of records of watering regimes.	Y
10.6 A planting list for STIF has been provided in Appendix C.1 which identifies planting densities for individual species.	Refer to Requirement 10.5.2	NA	Carry out planting using STIF using planting list provided in Appendix C.1.	On-site: undertaking site inspection of STIF Management Zone and complete a 20 X 20 m BioBanking quadrat to confirm species present. Off-site: A review of documentation to confirm that planting for individual STIF species has occurred in accordance with planting densities specified in Appendix C.1.	N
Vegetation Management Plan - Condition 11	**4.4 Vegetation Management Requirements:** **4.4.3 Sydney Turpentine Ironbark Forest Management Zone** **iv. Revegetation** **b. Area 4** **The main priority is to remove the weeds in the ground stratum and replant missing structural and floristic elements. In order to do this the area will require herbicide application targeting exotic groundcovers and cut and paste of woody weeds. Herbicide application is to occur two weeks prior to mulching. A subsequent follow up spray after the initial spray may be required to fully control exotic grasses. Two weeks should be allowed between herbicide applications, and before mulching to provide sufficient time for herbicide translocation throughout the plant especially rhizomes.** **Area 4 will receive native tubestock plantings. Planting will take place once weeds are controlled within this area and a layer of imported mulch 100mm thick has been applied. Imported mulch will be weed free certified.** **This management zone will receive no burns for a period of at least 6 years. This technique is expected to ensure an average tubestock survival rate of 70%, as has been reported for other situations (Greening Australia, 2009).** **Supplementary plantings will aim to recreate the structure and floristics of the natural community and will be carried out as follows:** **· Replanting of additional canopy species will be carried out in areas where the remnant canopy is relatively open;** **• Replanting of shrubs and small trees will be carried out to spacing produced in Appendix C.1;** **• Replanting of herbs and grasses will be performed where the understorey is sparse, or in areas where significant weed removal has created a lack of native groundcover vegetation;** **• Planted tubestock should receive generous watering prior to being planted and once planted to bed in the plant and remove air pockets around the roots; and** **• Tubestock will require regular watering during their establishment period as part of maintenance.** **A planting list for STIF has been provided in Appendix C.1**				

11.0 Revegetation within the Sydney Turpentine Ironbark Forest Management Zone Area 4 will aim to remove weeds in the ground stratum and replant missing structural and floristic elements. Herbicide application is to occur two weeks prior to mulching. two weeks should be allowed between herbicide applications and before mulching. Planting will take place once weeds are controlled within this area and a layer of imported mulch 100mm thick has been applied. Imported mulch will be weed free certified. This management zone will receive no burns for a period of at least 6 years. Supplementary plantings will be carried out as follows: · Replanting of additional canopy species will be carried out in areas where the remnant canopy is relatively open; · Replanting of herbs and grasses will be performed where the understorey is sparse, or in areas where significant weed removal has created a lack of native groundcover vegetation; · Planted tubestock should receive generous watering prior to being planted ; and · Tubestock will require regular watering during their establishment period as part of maintenance.	The annual BMP reports show that weed control and clearing has been undertaken in Area 4 including both Herbicide application on groundcover and cut and paste of woody weeds. Plantings have occurred in this area with species generally consistent with the species identified in Appendix C1. However a list of species and numbers planted is not provided. Planting densities are not recorded. Mulching of this area appears to have not been carried out prior to planting, instead hydro seeding has been used and native groundcovers have been established. Detailed lists of the species planted in this area and density are not provided in the BMP reports, so the audit could not determine if revegetation activities have fully followed the BMP. The audit site inspection observed plantings within Area 4. Planting densities appeared to be approximate and at spacing identified in BMP.	Staff interviews, review of relevant documents, site inspection	Revegetation within the Sydney Turpentine Ironbark Forest Management Zone Area 4 will aim to remove weeds in the ground stratum and replant missing structural and floristic elements. Herbicide application is to occur two weeks prior to mulching. two weeks should be allowed between herbicide applications and before mulching. Planting will take place once weeds are controlled within this area and a layer of imported mulch 100mm thick has been applied. Imported mulch will be weed free certified. This management zone will receive no burns for a period of at least 6 years. Supplementary plantings will be carried out as follows: · Replanting of additional canopy species will be carried out in areas where the remnant canopy is relatively open; · Replanting of herbs and grasses will be performed where the understorey is sparse, or in areas where significant weed removal has created a lack of native groundcover vegetation; · Planted tubestock should receive generous watering prior to being planted ; and · Tubestock will require regular watering during their establishment period as part of maintenance.	On-site: undertaking site inspection of STIF Management Zone and complete a 20 X 20 m BioBanking quadrat to determine vegetation characteristics. Off-site: A review of documentation to confirm that Sydney Turpentine Ironbark Forest Management Zone Revegetation in Area 4 is being undertaken in accordance with the approved BMP.	N
11.1 The main priority is to remove the weeds in the ground stratum and replant missing structural and floristic elements.	While primary weeding and some planting was observed throughout the majority of Area 4, significant understorey weed infestation remain within the southern portion of Area 4 with both audit sites 26 and 27 recording weed cover in the understorey >70% cover. Therefore the presence of high weed infestation within the ground stratum of the southern portions of Area 4 and lack of successful establishment of ground stratum from plantings indicates that the application of this criteria as the main priority has not been successfully undertaken.		Undertake weeding in STIF Management Zone Area 4 in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of STIF Management Zone and complete a 20 X 20 m BioBanking quadrat to determine exotic species richness and % cover. Off-site: A review of documentation to confirm that weeding in STIF Management Zone Area 4 has prioritised the removal of weeds in the ground stratum & replanting of missing structural and floristic elements in accordance with the approved BMP.	N
11.2 In order to do this the area will require herbicide application targeting exotic groundcovers and cut and paste of woody weeds.	The 2012 and 2013 annual reports confirm that herbicide was used to control weeds in this area. This included both application of herbicide for groundcovers and cut and paste for woody weeds (BMP 2012-2014)		Carry out herbicide application targeting exotic groundcovers and cut and paste of woody weeds in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of STIF Management Zone and complete a 20 X 20 m BioBanking quadrat to determine exotic species richness and % cover. Off-site: reviewing of documents in the nature of herbicide application records.	Y
11.3 Herbicide application is to occur two weeks prior to mulching.	Area 4 does not appear to have been mulched following herbicide application or prior to plantings. The 2012 annual report states that mulch was not applied as a 'self mulching' effect had occurred following herbicide application. The 2013 and 2014 reports state that hydroseeding was used in place of mulch that year in area 4. Recommendation - revise and finalise the BMP to reflect best-practices for bushland revegetation and practices best suited to the site.	Staff interviews, review of available documents	Carry out herbicide application two weekly prior to mulching in accordance with the Wahroonga Estate BMP.	Off-site: reviewing of documents in the nature of herbicide application records.	N
11.4 A subsequent follow up spray after the initial spray may be required to fully control exotic grasses.	Use of herbicide occurred in Area 4 in 2012 and again in 2013, as documented by the annual reports.	Review of available documents	Carry out subsequent herbicide application after initial spray where required for exotic grasses in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of STIF Management Zone and complete a 20 X 20 m BioBanking quadrat to determine exotic species richness and % cover. Off-site: A review of documentation in the nature of herbicide application records, in the event that a subsequent follow up spray was required after the initial spray to fully control exotic grasses.	Y
11.5 Two weeks should be allowed between herbicide applications, and before mulching to provide sufficient time for herbicide translocation throughout the plant especially rhizomes.	Herbicide application did not occur at a greater frequency than 2 weeks.	Staff interviews	Carry out herbicide application every two weeks and before mulching in accordance with the Wahroonga Estate BMP.	Off-site: reviewing of documents in the nature of herbicide application records.	Y
11.6 Area 4 will receive native tubestock plantings.	Plantings of native vegetation occurred in Area 4, as documented by the annual reports	Review of available documents	Carry out planting of native tubestock within Area 4.	On-site: undertaking site inspection of STIF Management Zone. Off-site: A review of documentation to confirm that Area 4 has received native tubestock plantings.	Y

11.7 Planting will take place once weeds are controlled within this area and a layer of imported mulch 100mm thick has been applied.	Refer to Requirement 11.3	NA	Carry out mulching of ripped areas in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of STIF Management Zone. Off-site: A review of documentation to confirm that planting took place once weeds were controlled within Area 4 and a layer of imported mulch 100mm thick was applied.	N
11.8 Imported mulch will be weed free certified.	Refer to Requirement 4.3.3 above. B144		Mulch must be weed free certified.	Off-site: reviewing documentation in the nature of records confirming use of weed free certified mulch.	NA
11.9 This management zone will receive no burns for a period of at least 6 years.	No hazard reduction burns have occurred at the site since the BMP was developed.	Review of available documents, staff interviews	Undertake no burns for at least a 6 month period in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of STIF Management Zone. Off-site: reviewing of documentation in the nature of records pertaining to burning regimes. Off-site: A review of documentation to confirm that this management zone will receive no burns for a period of at least 6 years.	Y
11.10 This technique is expected to ensure an average tubestock survival rate of 70%, as has been reported for other situations (Greening Australia, 2009).	The grounds manager reported that the expected survival rate of 70% had been achieved, although records of inspections of plantings had not been kept. It was stated that tubestock survival is monitored informally and losses are very low. It is noted that the wording of the BMP regarding this matter outlines the expected survival rate rather than providing a requirement.	NA	Confirm average tubestock survival rate of 70%, as has been reported for other situations (Greening Australia, 2009).	On-site: undertaking site inspection of STIF Management Zone. Off-site: reviewing documentation in the nature of monitoring reports.	NA
11.11 Supplementary plantings will aim to recreate the structure and floristics of the natural community and will be carried out as follows:	Plantings have occurred in Area 4 on an ongoing basis, as evidenced by the 2012, 2013 and 2014 annual reports. Significant hydro seeding of understorey combined with tube stock planting of species has occurred with species included in the Appendix C1. plant list. The planting are representative of the STIF community and aim is to recreate the structure and floristics over time.	Review of available documents	Carry out supplementary plantings to recreate structure and floristics of STIF.	On-site: undertaking site inspection of STIF Management Zone and complete a 20 X 20 m BioBanking quadrat to confirm species present. Off-site: A review of documentation to confirm that supplementary plantings within Area 4 are aimed at recreating the structure and floristics of the natural community (STIF) and are carried out in accordance with the approved BMP.	Y
11.11.1 Replanting of additional canopy species will be carried out in areas where the remnant canopy is relatively open;	The audit site inspection observed plantings within Area 4. Planting densities appeared to be approximate and at spacing identified in BMP. However no canopy planting was required as remnant canopy appeared adequate. Recommendation - review plantings that have been undertaken against plantings requirements.	Site inspection	Carry out replanting of additional canopy species in areas where remnant canopy is relatively open.	On-site: undertaking site inspection of STIF Management Zone and complete a 20 X 20 m BioBanking quadrat to confirm species present. Off-site: A review of documentation to confirm that replanting of additional canopy species has been carried out in areas where the remnant canopy is relatively open.	NA
11.11.2 Replanting of shrubs and small trees will be carried out to spacing produced in Appendix C.1;	The annual BMP reports show that weed control and clearing has been undertaken in Area 4 and that plantings have occurred in this area. Mulching of this area appears to have not been carried out prior to planting, instead hydroseeding has been used and native groundcovers have been established. The audit site inspection observed plantings within Area 4. Planting densities appeared to be approximate and at spacing identified in BMP. Recommendation - review plantings that have been undertaken against plantings requirements.	Review of available documents, staff interviews	Carry out replanting of shrubs and small trees in accordance with spacing intervals outlined in Appendix C.2.	On-site: undertaking site inspection of STIF Management Zone and complete a 20 X 20 m BioBanking quadrat to confirm species present. Off-site: A review of documentation to confirm that replanting of shrubs and small trees has been carried out in accordance with spacing produced in Appendix C.1	Y
11.11.3 Replanting of herbs and grasses will be performed where the understorey is sparse, or in areas where significant weed removal has created a lack of native groundcover vegetation;	The audit site inspection observed plantings within Area 4. hydroseeding has been used and native groundcovers have been established. Planting densities appeared to be approximate and at spacing identified in BMP.	Review of available documents, staff interviews	Carry out replanting of herbs and grasses in areas where understorey is sparse or in areas where significant weed removal has created a lack of native groundcover vegetation.	On-site: undertaking site inspection of STIF Management Zone and complete a 20 X 20 m BioBanking quadrat to confirm species present. Off-site: A review of documentation to confirm that replanting of herbs and grasses has been performed where the understorey is sparse, or in areas where significant weed removal has created a lack of native groundcover vegetation.	Y

11.11.4 Planted tubestock should receive generous watering prior to being planted and once planted to bed in the plant and remove air pockets around the roots; and	A manually operated sprinkler system has been established in area 4 to aid in watering of revegetation areas. Otherwise, watering is undertaken by hand using a water cart as described earlier in this report.	Review of available documents, staff interviews	Water planted tubestock prior to and after being planted.	Off-site: reviewing documentation in the nature of records of watering regimes.	Y
11.11.5 Tubestock will require regular watering during their establishment period as part of maintenance.	Refer to Requirement 11.11.4	NA	Water tubestock during their establishment period as part of their maintenance.	Off-site: reviewing documentation in the nature of records of watering regimes.	NA
11.12 A planting list for STIF has been provided in Appendix C.1	Refer to Requirement 11.11.2	NA	Carry out planting using STIF using planting list provided in Appendix C.1.	On-site: undertaking site inspection of STIF Management Zone and complete a 20 X 20 m BioBanking quadrat to confirm species present. Off-site: A review of documentation to confirm that planting has occurred in accordance with the list for STIF provided in Appendix C.1	NA
Vegetation Management Plan - Condition 12	**4.4 Vegetation Management Requirements:** **4.4.4 Northern SSGF Management Zone** **I. <u>Weeding</u>** **SSGF occurs on sandstone soils typically with low nutrient levels and subsequently low levels of weeds. The low abundance of weeds in this management zone enables a less intensive management approach. Periodic weed sweeps removing potential seed sources will ensure the high quality bushland is maintained in the long term. It is anticipated that weed invasion will occur at bushland/development interfaces and areas adjoining polygon 13 (Figure 3.1 of the BMP).**				
12.0 Weeding in the Northern SSGF Management Zone will be undertaken in accordance with the BMP and in periodic weed sweeps removing potential seed sources to ensure the high quality bushland is maintained in the long term.	Weed spread at the site is under constant evaluation by the BMP team and weed control practices are undertaken according to the schedule and observations of occurrence. Priority is given to an overall program of removing priority (or keystone) weeds and this is confirmed in the annual BMP reports (e.g.. page 11, 2014 BMP report). Primary weeding activities were observed in the majority of audits sites where required across all Weed class 1 and 2 categories in accordance with sequence of the BMP S 3.1. Evidence of primary weeding included a range off species across groundcovers, canopy and shrub layers..	Site surveys, staff interview, review of available documents.	Undertake weeding within Northern SSGF Management Zone in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of Northern SSGF Management Zone and complete a 20 X 20 m BioBanking quadrat to determine exotic species richness and % cover. Off-site: A review of documentation to confirm that weeding in the Northern SSGF Management Zone has been undertaken in accordance with the approved BMP.	Y
12.1 Periodic weed sweeps removing potential seed sources will ensure the high quality bushland is maintained in the long term.	Weeding is undertaken across the site on an ongoing basis as described in more detail earlier in this report.	Site surveys, staff interview, review of available documents.	Undertake periodic weed sweeps within Northern SSGF Management Zone in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of Northern SSGF Management Zone and complete a 20 X 20 m BioBanking quadrat to determine exotic species richness and % cover. Off-site: A review of documentation to confirm that periodic weed sweeps are undertaken to remove potential seed sources & thereby ensure the high quality bushland is maintained in the long term.	Y
12.2 It is anticipated that weed invasion will occur at bushland/development interfaces and areas adjoining polygon 13 (Figure 3.1).	This is not a requirement and should be removed from future audit protocols.	NA	Undertake targeted weeding at bushland/development interfaces in the Northern SSGF Management Zone in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of Northern SSGF Management Zone and complete a 20 X 20 m BioBanking quadrat to determine exotic species richness and % cover. Off-site: A review of documentation to confirm that targeted weeding has been undertaken in accordance with the approved BMP at bushland/development interfaces in the Northern SSGF Management Zone and areas adjoining polygon 13 (Figure 3.1).	NA

Vegetation Management Plan - Condition 13	**4.4 Vegetation Management Requirements:** **4.4.4 Northern SSGF Management Zone** **ii. Revegetation** **No revegetation is proposed in this management zone.**				
13.1 No revegetation is proposed in the Northern SSGF Management Zone	No revegetation was found to have been undertaken in the Northern SSGF Management Zone.		No revegetation is proposed in the Northern SSGF Management Zone	On-site: undertaking site inspection of Northern SSGF Management Zone.	Y
Vegetation Management Plan - Condition 14	**4.4 Vegetation Management Requirements:** **4.4.5 Western SSGF Management Zone** **i. Weeding** **Weeding will be undertaken in areas of vegetation that are in low condition within this zone. Refer to Figure 3.1 of BMP which illustrates areas of vegetation in low condition within this zone, in particular parts of polygons 4, 5, 6, and 22 (Figure 3.1). These areas will require more frequent weed maintenance with visits to this area given priority. Areas historically weedy will exhibit continual weed recruitment from established persistent weed seed banks.**				
14.0 Weeding in the Western SSGF Management Zone will be undertaken in accordance with the BMP.	Weeding is undertaken using a weed map and weeding schedule as described above in section .1. Areas of higher weed infestation are prioritised, along with flowering species and higher classes of weeds. The audit found that the weed map and flowering provides a high level of detail for weed planning and these tools are used on a daily basis to guide weed control. Primary weeding activities were observed in the majority of audits sites where required and corresponding with weed polygons 6, 5 ,22 and 10 in accordance with sequence of the BMP. However additional weeding activities will be required to continue manage weed recruitment	NA	Undertake weeding within Western SSGF Management Zone in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of Western SSGF Management Zone and complete a 20 X 20 m BioBanking quadrat to determine exotic species richness and % cover. Off-site: A review of documentation to confirm that weeding in the Western SSGF Management Zone has been undertaken in accordance with the approved BMP.	Y
14.1 Weeding will be undertaken in areas of vegetation that are in low condition within this zone. Refer to Figure 3.1 which illustrates areas of vegetation in low condition within this zone, in particular parts of polygons 4, 5, 6, and 22 (Figure 3.1).	Weed control is under constant evaluation by the grounds team and weed coverage is mapped for different weed classes on a map that is included in each annual report.	Site surveys, staff interview, review of available documents.	Undertake weeding within Western SSGF Management Zone in accordance with the Wahroonga Estate BMP (polygons 4,5,6 and 22).	On-site: undertaking site inspection of Western SSGF Management Zone and complete a 20 X 20 m BioBanking quadrat to determine exotic species richness and % cover. Off-site: A review of documentation to confirm that weeding has occurred in areas of vegetation that are in low condition within the Western SSGF Management Zone in accordance with the approved BMP (in particular polygons 4,5,6 and 22 - Figure 3.1).	Y
14.2 These areas will require more frequent weed maintenance. Visits to this area must be given priority.	Refer to Requirement 14.0	NA	Undertake weeding within Western SSGF Management Zone in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of Western SSGF Management Zone and complete a 20 X 20 m BioBanking quadrat to determine exotic species richness and % cover. Off-site: A review of documentation to confirm that weed maintenance visits to the Western SSGF Management Zone (in particular polygons 4,5,6 and 22 - Figure 3.1) are given priority in accordance with the approved BMP.	Y
14.3 Visits to this area must be given priority as these historically weedy areas will exhibit continual weed recruitment from established persistent weed seed banks.	Refer to Requirement 14.0 and 14.1.	NA	Undertake weeding within Western SSGF Management Zone in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of Western SSGF Management Zone and complete a 20 X 20 m BioBanking quadrat to determine exotic species richness and % cover. Off-site: A review of documentation to confirm that visits to the Western SSGF Management Zone are given priority .	NA

Vegetation Management Plan - Condition 15	**4.4 Vegetation Management Requirements:** **4.4.5 Western SSGF Management Zone** **ii. <u>Revegetation</u>** **No revegetation is proposed in this management zone.**				
15.1 No revegetation is proposed within the Western SSGF Management Zone	No revegetation was undertaken in the Western SSGF Management Zone.	Site surveys, staff interview, review of available documents.	No revegetation is proposed within the Western SSGF Management Zone.	On-site: undertaking site inspection of Western SSGF Management Zone.	Y
Vegetation Management Plan - Condition 16	**4.4 Vegetation Management Requirements:** **4.4.6 Eastern SSGF Management Zone** **i. <u>Weeding</u>** **The vegetation within this zone varies in condition (refer to Figure 3.1). Areas that are historically weedy will require more frequent weed maintenance visits. Particular attention must be given to potential weed seed sources from polygon 20, 17 and 18. Areas that are historically weedy will exhibit continual weed recruitment, and weed seed banks are anticipated to be very persistent in these areas.**				
16.0 Weeding in the Eastern SSGF Management Zone will be undertaken in accordance with the BMP	Weed spread at the site is under constant evaluation by the BMP team and weed control practices are undertaken according to the schedule and observations of occurrence. Priority is given to an overall program of removing priority (or keystone) weeds and this is confirmed in the annual BMP reports (e.g.. page 11, 2014 BMP report). Progressive weeding works were identified by the audit site inspection within weed areas mapped in figure 3.1 of the BMP, 16,18, 19. No obvious application of mulch was observed.	Site surveys, staff interview, review of available documents.	Undertake weeding within Eastern SSGF Management Zone in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of Eastern SSGF Management Zone and complete a 20 X 20 m BioBanking quadrat to determine exotic species richness and % cover. Off-site: A review of documentation to confirm that weeding in the Eastern SSGF Management Zone has been undertaken in accordance with the approved BMP.	Y
16.1 Areas that are historically weedy will require more frequent weed maintenance visits.	Weed control is under constant evaluation by the grounds team and weed coverage is mapped for different weed classes on a map that is included in each annual report. Area 18 has had significant primary weeding within woody weed layer however has not progressed all the way upslope	Site surveys, staff interview, review of available documents.	Undertake weeding within Eastern SSGF Management Zone in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of Eastern SSGF Management Zone and complete a 20 X 20 m BioBanking quadrat to determine exotic species richness and % cover. Off-site: A review of documentation to confirm that areas that are historically weedy are the subject of more frequent weed maintenance visits.	Y
16.2 Particular attention must be given to potential weed seed sources from polygon 20, 17 and 18.	Refer to Requirement 16.1. Polygon 17 and 20 have also had particular attention for weed control (BMP 2012 and 2014), however are currently still classed as weed class 3 and will require ongoing attention for management of weed sources from adjoining areas to the east, outside of the BMP.	NA	Undertake weeding within Eastern SSGF Management Zone in accordance with the Wahroonga Estate BMP (polygons 20, 17 and 18).	On-site: undertaking site inspection of Eastern SSGF Management Zone and complete a 20 X 20 m BioBanking quadrat to determine exotic species richness and % cover. Off-site: A review of documentation to confirm that particular attention has been given to potential weed seed sources from polygon 20, 17 and 18.	Y
16.3 Areas that are historically weedy will exhibit continual weed recruitment, and weed seed banks are anticipated to be very persistent in these areas.	Refer to Requirement 16.1 and 16.0.	NA	Undertake weeding within Eastern SSGF Management Zone in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of Eastern SSGF Management Zone and complete a 20 X 20 m BioBanking quadrat to determine exotic species richness and % cover. Off-site: A review of documentation to confirm that areas within the Eastern SSGF Management Zone that are historically weedy are managed in accordance with the approved BMP.	NA

Vegetation Management Plan - Condition 17	**4.4 Vegetation Management Requirements:** **4.4.6 Eastern SSGF Management Zone** **<u>Revegetation</u>** **No revegetation is proposed in this management zone.**				
17.1 No revegetation is proposed within the Eastern SSGF Management Zone.	No revegetation was undertaken in the Eastern SSGF Zone.	Site surveys, staff interview, review of available documents.	No revegetation is proposed within the Eastern SSGF Management Zone.	On-site: undertaking site inspection of Eastern SSGF Management Zone.	Y
Vegetation Management Plan - Condition 18	**4.5 Public Access and Impact Avoidance:** **The APZ boundary indicated in pink of Figure 4.1 of the BMP will be fenced to reduce public access into the bushland.** **This will reduce the impact of walking tracks which lead to degradation and fragmentation of remnants, particularly STIF (DECC (NSW), 2008b). For this reason it is preferable to minimise access to these remnants and reduce the potential for additional new track formation. The fence will provide several points of access into the bushland where existing tracks occur or where bushfire service tracks are recommended to be maintained. Fencing materials should be resistant to fire and should not restrict the movement of fauna (DECC (NSW), 2008b).** **A style of fence should accommodate the following:** **• Reduce multiple public access points into the E2 zone;** **• Allow access to areas of bushland during the implementation of vegetation management including fuel reduction and during bushfire crisis;** **• Fence materials will be resistant to fire and will not restrict the movement of fauna (DECC (NSW), 2008b); and** **• Reduce mower creep into the bushland during APZ maintenance;**				
18.0 The APZ boundary will be fenced to reduce public access. Bushfire service tracks will be maintained. Fencing materials should be resistant to fire and should not restrict the movement of fauna.	The APZ Zone has been partially fenced where the public can access it (near the ACA main office) as the grounds staff believe it would be impractical to fence the entire length. The APZ zone is generally located away from public access points and therefore unwanted public access through these areas is uncommon. The fire trail appeared to be in appropriate condition to allow access. Recommendation - review fencing requirements in the BMP and address any deficiencies.	Site surveys, staff interview, review of available documents.	The APZ boundary will be fenced to reduce public access. Bushfire service tracks will be maintained. Fencing materials should be resistant to fire and should not restrict the movement of fauna.	On-site: undertaking site inspection of APZ boundary. Off-site: A review of documentation to confirm that the APZ boundary (indicated in pink of Figure 4.1) has been fenced and maintained in accordance with the approved BMP.	N
18.1 The APZ boundary indicated in pink of Figure 4.1 of the BMP will be fenced to reduce public access into the bushland.	Refer to Requirement 18.0.	NA	The APZ boundary will be fenced to reduce public access.	On-site: undertaking site inspection of APZ boundary to confirm that the APZ boundary (indicated in pink of Figure 4.1) has been fenced to reduce public access into the bushland.	N
18.2 To reduce the impact of walking tracks which lead to degradation and fragmentation of remnants, particularly STIF (DECC (NSW), 2008b) it is preferable to minimise access to these remnants and reduce the potential for additional new track formation.	Refer to Requirement 18.0.	NA	The APZ boundary will be fenced to minimise access and creation of additional new tracks.	On-site: undertaking site inspection of APZ boundary (indicated in pink of Figure 4.1) to confirm that access has been minimised to reduce the potential for additional new track formation, degradation and fragmentation of remnants.	NA
18.3 The fence will provide several points of access into the bushland where existing tracks occur or where bushfire service tracks are recommended to be maintained.	Existing access points have been maintained.	Site surveys, staff interview, review of available documents.	The APZ boundary will provide several points of access into the bushland where existing tracks occur or where bushfire service tracks are recommended to be maintained.	On-site: undertaking site inspection of APZ boundary to confirm that the fence provides several access points into the bushland where existing tracks occur or where bushfire service tracks are to be maintained.	Y
18.4 A style of fence should accommodate the following:			A style of fence should accommodate the following:		
18.4.1 Reduce multiple public access points into the E2 zone;	Refer to Requirement 18.0	Site surveys, staff interview, review of available documents.	The APZ boundary will be fenced to reduce public access into the EX Environment Conservation Zone.	On-site: undertaking site inspection of APZ boundary to confirm that public access points into the E2 zone have been reduced.	N
18.4.2 Allow access to areas of bushland during the implementation of vegetation management including fuel reduction and during bushfire crisis;	Refer to Requirement 18.0 and 18.3	Site surveys, staff interview, review of available documents.	The APZ boundary will be fenced but allow access to areas of bushland during the implementation of vegetation management.	On-site: undertaking site inspection of APZ boundary to confirm that fencing allows access to areas of bushland during the implementation of vegetation management including fuel reduction and during bushfire crisis.	Y
18.4.3 Fence materials will be resistant to fire and will not restrict the movement of fauna; and	Two strand fencing has been used, which allows for fauna movement (refer to page 65 of the 2012 BMP report)	Staff interviews, site surveys	The APZ boundary will be fenced using materials that are resistant to fire and not restrict movement of fauna.	On-site: undertaking site inspection of APZ boundary to confirm that fence materials are resistant to fire and do not restrict the movement of fauna.	Y

18.4.4 Reduce mower creep into the bushland during APZ maintenance.	Refer to Requirement 18.0. Fencing in areas will prevent mower creep however unfenced areas rely on existing demarcation of APZ boundaries from past maintenance and may be subjected to mower creep. Although none was observed during the audit. Recommendation - review fencing requirements in the BMP and address any deficiencies.	NA	The APZ boundary will be fenced to reduce mower creep.	On-site: undertaking site inspection of APZ boundary to confirm that mower creep into the bushland during APZ maintenance is not occurring.	N
Vegetation Management Plan - Condition 19					
19.0 The ACA will have full ownership of the E2 Environmental Conservation Zone and be responsible for the bush regeneration, maintenance, monitoring and reporting within the E2 zone.	ACA confirmed it owns the site and has contracted Seventh-day Adventist Aged Care (Greater Sydney) Limited (SDA Aged Care Ltd) to undertake maintenance of bushland areas. The tender provided by SDA Aged Care to ACA was reviewed which forms the contract between the two parties. This was dated November 2010 and is valid for a 5 year period. The tender document nominates Graham Wegner as the 'Grounds Department Supervisor' and Ryan May as 'Head Groundsman'. Three additional bush care workers are also nominated in the tender as 'team leaders'. The tender states that it has been prepared 'in accordance with the BMP' taking into account the key aim of revegetating and maintaining the level of keystone weed cover to <30% throughout the declared Environmental Conservation Zone. Other key aspects of the BMP (and project approval) are described in the document and methods for how these will be met are stated. This includes requirements for bush regeneration, maintenance, monitoring and reporting for the E2 Zone.	Review of available documents	The ACA will have full ownership of the E2 Environmental Conservation Zone and be responsible for the bush regeneration, maintenance, monitoring and reporting within the E2 zone.	On-site: undertaking site inspection of the E2 Environmental Conservation Zone. Off-site: reviewing of documents pertaining to bush regeneration, maintenance, monitoring and reporting.	Y
19.1 The Australasian Conference Association (ACA) (or its successor) will have full ownership of the E2 Environmental Conservation zone.	ACA's Property Manager confirmed that it has full ownership of the site.	Staff interviews	The Australasian Conference Association (ACA) (or its successor) will have full ownership of the E2 Environmental Conservation zone.	Off-site: reviewing documents pertaining to the ACA having full ownership of the E2 Environmental Conservation Zone.	Y
19.2 Bush regeneration and all maintenance, monitoring and reporting associated with the E2 zone will be the responsibility and burden of the ACA (or its successor).	Refer to Requirement 19.0	NA	Bush regeneration and all maintenance, monitoring and reporting associated with the E2 zone will be the responsibility and burden of the ACA (or its successor).	On-site: undertaking site inspection of E2 Environmental Conservation Zone. Off-site: reviewing documents pertaining to the management of the E2 Environmental Conservation Zone management by ACA.	Y
Vegetation Management Plan - Condition 20	**4.7 Maintenance:** **4.7.1 Maintenance - 5 years** **Initial maintenance will commence once secondary weeding has been completed (weed cover of <5%) and when planted tubestock are established. Maintenance will include weeding and maintenance of planted native species and will aim to maintain weed cover to <5% throughout the E2 zone.** **i. <u>Maintenance weeding</u>** **Works will include 6 visits a year with monthly visits in the summer months between November and February when weed growth is more prolific. Maintenance weeding will occur throughout the entire E2 zone targeting known weed sources; stormwater outlets, watercourse entry points, revegetation sites, bushland edges and weedy areas which have recently been fuel managed (burnt).** **Bush Regenerators will follow the information provided for weeding within each management zone in Section 4.4 of the BMP.**				
20.0 Maintenance weeding will commence once secondary weeding is completed (<5% weed cover) and when planted tubestock are established. Maintenance aims to maintain weed cover <5% throughout E2 zone. Maintenance weeding will include 6 visits per year, with monthly visits in the summer months between November and February. Maintenance weeding will occur throughout the entire E2 zone in accordance with the BMP.	Maintenance weeding is undertaken on a continual basis across the site in areas where primary weeding and secondary has been completed and or planted tubestock have occurred. The grounds team manager undertakes a weekly site inspection of the site to assess weed cover and identify maintenance weeding priorities.	Staff interviews, review of available documents	Undertake maintenance weeding within E2 Environmental Conservation Zone in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of E2 Environmental Conservation Zone and complete a 20 X 20 m BioBanking quadrat to determine exotic species richness and % cover. Off-site: A review of documentation to confirm that maintenance weeding has been undertaken in accordance with the approved BMP.	Y
20.1 Initial maintenance will commence once secondary weeding has been completed (weed cover of <5%) and when planted tubestock are established.	Maintenance weeding is undertaken on a continual basis across the site in areas where primary weeding and secondary has been completed and or planted tubestock have occurred. The grounds team manager undertakes a weekly site inspection of the site to assess weed cover and identify maintenance weeding priorities.	NA	Undertake initial maintenance after completion of secondary weeding and tubestock have established in the E2 Environmental Conservation Zone in accordance with the Wahroonga Estate BMP (reduce exotic cover to <5%).	On-site: undertaking site inspection of E2 Environmental Conservation Zone and complete a 20 X 20 m BioBanking quadrat to determine exotic species richness and % cover. Off-site: A review of documentation to confirm that initial maintenance commenced once secondary weeding had been completed (weed cover of <5%) and when planted tubestock were established.	Y

20.2 Maintenance will include weeding and maintenance of planted native species.	Maintenance weeding is undertaken on a continual basis across the site in areas where primary weeding and secondary has been completed and or planted tubestock have occurred. The grounds team manager undertakes a weekly site inspection of the site to assess weed cover and identify maintenance weeding priorities.	Staff interviews, review of available documents, site inspection	Undertake weeding and native species planting maintenance in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of E2 Environmental Conservation Zone and complete a 20 X 20 m BioBanking quadrat to determine vegetation characteristics. Off-site: A review of documentation to confirm that maintenance includes weeding and maintenance of planted native species.	Y
20.3 Maintenance will aim to maintain weed cover to <5% throughout the E2 zone.	Maintenance weeding is undertaken on a continual basis across the site in areas where primary weeding and secondary has been completed and or planted tubestock have occurred. The grounds team manager undertakes a weekly site inspection of the site to assess weed cover and identify maintenance weeding priorities.	NA	Undertake maintenance weeding within E2 Environmental Conservation Zone in accordance with the Wahroonga Estate BMP (reduce exotic cover to <5%).	On-site: undertaking site inspection of E2 Environmental Conservation Zone and complete a 20 X 20 m BioBanking quadrat to determine exotic species richness and % cover. Off-site: A review of documentation to confirm that maintenance has reduced weed cover to <5% throughout the E2 zone.	Y
20.4 **Maintenance Weeding**			Maintenance Weeding		
20.4.1 Works will include 6 visits a year with monthly visits in the summer months between November and February when weed growth is more prolific.	A weekly site inspection is undertaken by the Grounds and Projects Supervisor and Technical Research Officer. Each week a different section of the site (from a total of 4 sections) is focused on. Weeding activities are based on these site inspections and a weed schedule that has been discussed in detail above.	Staff interviews, review of available documents	Undertake maintenance weeding within E2 Environmental Conservation Zone during 6 visits a year within monthly visits in November and February in accordance with the Wahroonga Estate BMP.	Off-site: reviewing of documents pertaining to maintenance records.	Y
20.4.2 Maintenance weeding will occur throughout the entire E2 zone targeting known weed sources; stormwater outlets; watercourse entry points; revegetation sites; bushland edges; and weedy areas which have recently been fuel managed (burnt).	Maintenance weeding is undertaken on a continual basis across the site in areas where primary weeding and secondary has been completed and or planting of tubestock has been done. This includes the E2 area. The grounds team manager undertakes a weekly site inspection of the site to assess weed cover and identify maintenance weeding priorities.	NA	Undertake maintenance weeding within E2 Environmental Conservation Zone targeting known weed sources; stormwater outlets, watercourse entry points, revegetation sites, bushland edges and weedy areas which have recently been fuel managed (burnt) in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of E2 Environmental Conservation Zone and complete a 20 X 20 m BioBanking quadrat to determine exotic species richness and % cover. Off-site: A review of documentation to confirm that maintenance weeding has occurred throughout the entire E2 zone targeting known weed sources; stormwater outlets; watercourse entry points; revegetation sites; bushland edges; and weedy areas which have recently been fuel managed (burnt).	Y
20.4.3 Bush Regenerators will follow the information provided for weeding within each management zone in Section 4.4 of the BMP	Maintenance weeding is undertaken on a continual basis across the site in areas where primary weeding and secondary has been completed and or planted tubestock have occurred. The grounds team manager undertakes a weekly site inspection of the site to assess weed cover and identify maintenance weeding priorities.	NA	Bush Regenerators to undertake maintenance weeding within E2 Environmental Conservation Zone in accordance with Section 4.4 of the Wahroonga Estate BMP.	On-site: undertaking site inspection of E2 Environmental Conservation Zone and complete a 20 X 20 m BioBanking quadrat to determine exotic species richness and % cover. Off-site: A review of documentation to confirm that Bush Regenerators follow the information provided for weeding within each management zone in accordance with Section 4.4 of the approved BMP.	Y

Vegetation Management Plan - Condition 21	**4.7 Maintenance:** **4.7.1 Maintenance - 5 years** **ii. <u>Revegetation Maintenance</u>** **Revegetation sites will require the following maintenance activities:** **· Replacement of plant stock will ensure that a minimum of 80% of the original plant stock is maintained for the contract period;** **· Supplementary mulching to maintain sufficient depth and quality of the mulch layer to suppress weed growth and assist native plant growth;** **· Replaced tubestocks will be regularly watering during their establishment phase and during drier months; and** **· Spot spraying and hand weed revegetation sites.**				
21.0 Revegetation Maintenance sites will require the following maintenance activities: · Replacement of plant stock ; · Supplementary mulching ; · Replaced tubestocks will be regularly watering during their establishment phase and during drier months; and · Spot spraying and hand weed revegetation sites.	The grounds team manager reported that loss of tubestock is low and plantings are monitored regularly by grounds staff. Dead plants are replaced as required. The grounds team uses manually operated sprinklers (in STIF areas) and a 200L water cart and 90L ATU to water plantings. All areas of plantings had appropriate tree guards, stakes and relatively low death rates (<10%) at observed audit sites 7, 10 14. Records have not been kept detailing the replacement of plant stock, and supplementary mulching has not occurred in accordance with the BMP	Staff interviews, review of available documents, site inspection	Revegetation Maintenance sites will require the following maintenance activities: · Replacement of plant stock ; · Supplementary mulching ; · Replaced tubestocks will be regularly watering during their establishment phase and during drier months; and · Spot spraying and hand weed revegetation sites.	On-site: undertaking site inspection of revegetated areas. Off-site: reviewing documentation pertaining to revegetation records. Off-site: A review of documentation to confirm that Revegetation Maintenance is undertaken in accordance with the approved BMP.	N
21.1 **Revegetation sites will require the <u>following maintenance activities:</u>**			Revegetation sites will require the following maintenance activities:		
21.1.1 Replacement of plant stock will ensure that a minimum of 80% of the original plant stock is maintained for the contract period;	The grounds manager reported that all lost plantings are replaced. However; a comparison between the numbers and densities of plants requiring planting under the BMP has not been made (for this audit or by ACA), as these records have not been kept. Therefore compliance with this requirement could not be determined. Recommendation - ACA should undertake a review of the specific planting requirements of the BMP (as outlined in Appendix C) against plantings that have been undertaken. This should compare the numbers and densities of plantings required for specific areas of the site against the plantings already undertaken. Supplementary plantings should be undertaken if required. This comparison should occur at a regular frequency (annually, or as otherwise required by the BMP).	Staff interviews, review of available documents	Carry out replacement of plant stock to ensure that a minimum of 80% of the original plant stock is maintained for the contract period in accordance with Wahroonga Estate BMP.	On-site: undertaking site inspection of revegetated areas. Off-site: reviewing documentation pertaining to revegetation records. Off-site: A review of documentation to confirm that replacement of plant stock has occurred to ensure a minimum of 80% of the original plant stock is maintained for the contract period.	U
21.1.2 Supplementary mulching to maintain sufficient depth and quality of the mulch layer to suppress weed growth and assist native plant growth;	Supplementary mulching is only undertaken at the site to prevent erosion, as outlined in the annual reports. The grounds team manager reported that natural leaf litter provides sufficient mulch and the annual reports state that better results have been achieved for areas planted with seed and those allowed to naturally regenerate, where mulch has not been applied (e.g. page 17 2013 annual report states 'The choice not to mulch has been the right one however, with many varieties of natural revegetation taking place'). Their evidence that in some areas of significant understorey weed infestations mulch may have been a successful method. for example audit sites 27, 18 and 19		Carry out supplementary mulching to maintain sufficient depth and quality of mulch layer in accordance with Wahroonga Estate BMP.	On-site: undertaking site inspection of revegetated areas. Off-site: A review of documentation to confirm that supplementary mulching has occurred in order to maintain sufficient depth and quality of the mulch layer to suppress weed growth and assist native plant growth .	N
21.1.3 Replaced tubestocks will be regularly watered during their establishment phase and during drier months; and	It was reported that replaced tubestock are watered as required.	Staff interviews	Water tubestock during their establishment period as phase and during drier months.	Off-site: reviewing documentation in the nature of records of watering regimes.	Y
21.1.4 Spot spraying and hand weed revegetation sites.	Refer to requirements 20.0. BMP 2014 refers to follow up hand weeding within revegetation site Area 4. Spot spraying and hand weeding have been undertaken in areas of re-planting following primary and secondary weeding.	NA	Carry out spot spraying and hand weed revegetation in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of revegetated areas. Off-site: A review of documentation to confirm that spot spraying and hand weeding of revegetation sites has been undertaken in accordance with the approved BMP.	Y

Vegetation Management Plan - Condition 22	**4.7 Maintenance:** **4.7.2 Maintenance in Perpetuity** **Generally, as regenerating natives become established, the need for maintenance lessens. However, the E2 Environmental Conservation zone is surrounded by established dwellings and it is expected that invasion of weeds from neighbouring areas may be an ongoing issue. Accordingly, maintenance will continue in perpetuity and as follows.** **Maintenance will continue on from the completion of the initial 5 year maintenance period and will include 3 visits per year. Maintenance will include weeding of the entire E2 zone targeting known weed sources; stormwater outlets, watercourse entry points and bushland edges. Maintenance weeding will aim to maintain weed cover to < 5% throughout the E2 zone. Bush Regenerators will follow the information provided for each management zone (Section 4.4 of the BMP).**				
22.0 Maintenance in the E2 zone will occur in perpetuity. Maintenance will continue on from the completion of the initial 5 year maintenance period and will include 3 visits per year. Maintenance will include weeding of the entire E2 zone and be maintained in accordance with the BMP.	Maintenance occurred throughout the period prior to the audit under a contract that runs till November 2015 (refer to Condition 19.0).	Staff interviews, review of available documents	Maintenance in the E2 zone will occur in perpetuity. Maintenance will continue on from the completion of the initial 5 year maintenance period and will include 3 visits per year. Maintenance will include weeding of the entire E2 zone and be maintained in accordance with the BMP.	On-site - undertaking a site inspection of E2 Environmental Conservation Zone. Off-site: A review of documentation to confirm that maintenance in the E2 zone has been undertaken in accordance with the approved BMP.	Y
22.1 **maintenance will continue in perpetuity and as follows:**			Maintenance will continue in perpetuity and as follows:		
22.1.1 Maintenance will continue on from the completion of the initial 5 year maintenance period and will include 3 visits per year.	The 5 year initial maintenance period has not been competed yet, hence this requirement does not apply.	NA	Maintenance will continue on from the completion of the initial 5 year maintenance period and will include 3 visits per year.	On-site - undertaking a site inspection of E2 Environmental Conservation Zone. Off-site: reviewing of documents pertaining to maintenance records.	NA
22.1.2 Maintenance will include weeding of the entire E2 zone targeting known weed sources; stormwater outlets, watercourse entry points and bushland edges.	Refer to requirements 20	NA	Maintenance will include weeding of the entire E2 zone targeting known weed sources; stormwater outlets, watercourse entry points and bushland edges.	On-site - undertaking a site inspection of E2 Environmental Conservation Zone. Off-site: reviewing of documents pertaining to maintenance records.	NA
22.1.3 Maintenance weeding will aim to maintain weed cover to < 5% throughout the E2 zone.	Refer to requirements 20	NA	Undertake maintenance in accordance with the Wahroonga Estate BMP (reduce exotic cover to <5%).	On-site - undertaking a site inspection of E2 Environmental Conservation Zone and completing a 20 X 20 m BioBanking quadrat to determine exotic weed cover. Off-site: reviewing of documents pertaining to maintenance records.	NA
22.2 Bush Regenerators will follow the information provided for each management zone (Section 4.4).	Refer to Requirement 19.0	NA	Bush regenerators to undertake maintenance activities in accordance with Section 4.4 of the Wahroonga Estate BMP.	On-site - undertaking a site inspection of E2 Environmental Conservation Zone. Off-site: reviewing of documents pertaining to maintenance records.	NA

Vegetation Management Plan - Condition 23	**4.8 Monitoring:** **Monitoring involves observing and recording the changes that take place before, during and after restoration work (Underwood, 1991). Keeping comprehensive records will provide information on the effectiveness of management practices, in order to determine whether the natural vegetation is improving or declining (DECC (NSW), 2008a).** **Qualified bushland management consultants will carry out a program of regular monitoring of the implementation of the VMP, following the methods outlined below.** **4.8.1 Monitoring by quadrats** **Permanent 20m x 20m quadrats will be used for baseline and post-treatment monitoring. Information on site details, habitat features, disturbance and floristic composition in each area will be recorded onto data sheets.** **There will be a minimum of 1 quadrat per management zone, or 1 quadrat per 10 hectares, whichever is greater.** **These quadrats will be monitored every 6 months during weed control efforts and then on an annual basis in perpetuity**				
23.0 Qualified bushland management consultants will be utilised to undertake Monitoring by quadrats. Permanent 20m x 20m quadrats will be used for baseline and post-treatment monitoring. Information on site details, habitat features, disturbance and floristic composition in each area will be recorded onto data sheets. There will be a minimum of 1 quadrat per management zone, or 1 quadrat per 10 hectares, whichever is greater. These quadrats will be monitored every 6 months during weed control efforts and then on an annual basis in perpetuity	The annual VMP reports show that a regular program of monitoring has been undertaken across the site. Monitoring sites were inspected at audits sites 4, 10, 12 and 14. At each location sites are appropriately marked and fenced. Monitoring currently appears to be restricted to photo monitoring. No evidence of floristic sampling, structural composition or % percentage abundance of native vs weed species is provided. Recommendation - ensure all monitoring requirements specified in the BMP are undertaken.	Review of available documents, site inspection	Qualified bushland management consultants will be utilised to undertake Monitoring by quadrats. Permanent 20m x 20m quadrats will be used for baseline and post-treatment monitoring. Information on site details, habitat features, disturbance and floristic composition in each area will be recorded onto data sheets. There will be a minimum of 1 quadrat per management zone, or 1 quadrat per 10 hectares, whichever is greater. These quadrats will be monitored every 6 months during weed control efforts and then on an annual basis in perpetuity.	Off-site: reviewing documents pertaining to monitoring reports to confirm that a program of regular monitoring has been undertaken in accordance with the requirements of the VMP.	N
23.1 Monitoring involves observing and recording the changes that take place before, during and after restoration work.	Refer to Requirement 23.0 above.	NA	Undertake monitoring observe and record the changes that take place before, during and after restoration work in accordance with the Wahroonga Estate BMP.	Off-site: reviewing documents pertaining to monitoring reports to confirm that monitoring has included observations and records in relation to the changes that have taken place, before, during and after restoration work.	NA
23.2 Keeping comprehensive records will provide information on the effectiveness of management practices, in order to determine whether the natural vegetation is improving or declining.	The monitoring currently presented in the VMP progress report (2014) is restricted to photographic record. No evidence of floristic sampling, structural composition or % percentage abundance of native vs weed species is provided. Long term monitoring by photographic evidence is only limited in providing an understanding of effectiveness of management actions or if natural vegetation is improving or declining. Recommendation - ensure all monitoring requirements specified in the BMP are undertaken.	Review of available documents, site inspection	Keeping comprehensive records will provide information on the effectiveness of management practices.	Off-site: reviewing documents to confirm that comprehensive records are kept and that these records provide information on the effectiveness of management practices, sufficient to determine whether the natural vegetation is improving or declining.	N
23.3 Qualified bushland management consultants will carry out a program of regular monitoring of the implementation of the VMP, following the methods outlined below:	The qualifications of the grounds staff are outlined in the tender provided to ACA (refer to Requirement 19.0). These are: - Grounds team manager/supervisors (Graham Wegener) - Diploma of Applied Science in Agriculture (Hort Major) - Head Groundsman (Ryan May) - Cert III in Horticulture Details of some other staff who contributed to the report are provided in the approval page of the 2014 BMP report as follows: - Ryan May (Cert III Hort) - Frances O'Brien (BEnv LLB) The qualifications of team manager and Heads groundsman are appropriately qualified however the qualifications of others undertaking work was not provided. Recommendation - ensure all grounds staff are appropriately qualified and records of their qualifications are kept on-site.	Review of available documents, site inspection	Qualified bushland management consultants to carry out program of regular monitoring of implementation of the VMP in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of permanent quadrats. Off-site: reviewing documents to confirm that qualified bushland management consultants have undertaken a program of regular monitoring and implemented the methods outlined in the VMP.	Y
23.3.1 Permanent 20m x 20m quadrats will be used for baseline and post-treatment monitoring.	Refer to requirement 23.0 above. Permanent 20m x 20m quadrats baseline and post-treatment monitoring have been established and are maintained.	NA	Carry out program of regular monitoring of permanent 20 X 20m quadrats for baseline and post-treatment monitoring in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of permanent quadrats. Off-site: reviewing documents to confirm that permanent 20m x 20m quadrats are used for baseline and post-treatment monitoring.	Y

23.3.2 Information on site details, habitat features, disturbance and floristic composition in each area will be recorded onto data sheets.	Monitoring as presented in BMP annual reports provide no information on habitat features or floristic composition. No data sheets were sighted. Recommendation - ensure all monitoring requirements specified in the BMP are undertaken.	Review of available documents, site inspection	Carry out program of regular monitoring to collect information on site details, habitat features, disturbance and floristic composition in each area will be recorded onto data sheets in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of permanent quadrats. Off-site: reviewing documents to confirm that information for each area has been recorded onto data sheets and includes: on site details; habitat features; disturbance; and floristic composition.	N
23.3.3 There will be a minimum of 1 quadrat per management zone, or 1 quadrat per 10 hectares, whichever is greater.	The minimum number of quadrats have been established and were inspected during the site component of the audit.	Site inspection	Carry out program of regular monitoring of implementation of the VMP in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of permanent quadrats to confirm that there is a minimum of 1 quadrat per management zone, or 1 quadrat per 10 hectares, whichever is greater. Off-site: reviewing documents pertaining to monitoring reports.	Y
23.3.4 These quadrats will be monitored every 6 months during weed control efforts and then on an annual basis in perpetuity.	Refer to requirement 23.0. Monitoring is occurring every 12 months, not every 6 months after weeding	NA	Carry out program of regular monitoring with a minimum of 1 quadrat per management zone, or 1 quadrat per 10 hectares, whichever is greater in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of permanent quadrats. Off-site: reviewing documents pertaining to monitoring reports. Off-site: reviewing documents to confirm that quadrats are monitored every 6 months during weed control efforts and that processes are in place to ensure that monitoring will then continue on an annual basis in perpetuity.	N
Vegetation Management Plan - Condition 24	**4.8 Monitoring:** **4.8.2 Revegetation Area** **General observations of the nature and condition of revegetation Areas 1, 2, 3 and 4 will be taken during monitoring surveys, including:** **· Estimates of the success rate of plantings and assessment of plant replacement requirements;** **· Evidence of erosion and sedimentation and the correct function of erosion control devices;** **· Depth and condition of mulch; and** **· Recommendations for corrective measures and/or vegetation management.** **The performance indicators for revegetation works will be monitored (see Table 4.1).**				
24.0 Monitoring revegetation area will be undertaken by Qualified bushland management consultants. General observations of the nature and condition of revegetation Areas 1, 2, 3 and 4 will be taken during monitoring surveys, including: · Estimates of the success rate of plantings and assessment of plant replacement requirements; · Evidence of erosion and sedimentation and the correct function of erosion control devices; · Depth and condition of mulch; and · Recommendations for corrective measures and/or vegetation management. The performance indicators (Table 4.1) for revegetation works will be monitored.	No evidence of monitoring progress against the performance measures was found in the annual BMP reports or elsewhere. Also refer to Requirement 23.0 Recommendation - ensure all monitoring requirements specified in the BMP are undertaken.	Review of available documentation	Monitoring revegetation area will be undertaken by Qualified bushland management consultants. General observations of the nature and condition of revegetation Areas 1, 2, 3 and 4 will be taken during monitoring surveys, including: · Estimates of the success rate of plantings and assessment of plant replacement requirements; · Evidence of erosion and sedimentation and the correct function of erosion control devices; · Depth and condition of mulch; and · Recommendations for corrective measures and/or vegetation management. The performance indicators (Table 4.1) for revegetation works will be monitored.	On-site: undertaking site inspection of monitoring locations and revegetation areas 1, 2. 3 and 4. Off-site: A review of documentation (for example, reviewing documents in the nature of photos, monitoring reports etc.), to confirm that monitoring of revegetation areas 1, 2. 3 and 4 has been undertaken in accordance with the VMP, including, but not limited to: the requirement for qualified bushland management consultants to undertake revegetation monitoring etc.	N
24.1 General observations of the nature and condition of revegetation Areas 1, 2, 3 and 4 will be taken during monitoring surveys, including:	Refer to Requirement 24.0	NA	General observations of the nature and condition of revegetation Areas 1, 2, 3 and 4 will be taken during monitoring surveys, including:		NA

Table 4.1 STRUCTURAL PERFORMANCE OF REVEGETATION

	On Maintenance	Year 1	Year 2	Year 3	Year 4	Year 5 Off Maintenance
Canopy Cover	< 30 %	< 30%	30% – 50 %	> 60%	Increase in cover	Increase in cover
Canopy Height	< 0.3 m	0.3m – 0.7m	0.7m – 1.5m	> 2m	Increase in height	Increase in height
Percentage Weed cover	< 5%	<5%	<5%	<5%	<5%	<5%
Natural Seedling Recruitment	nil	nil	Limited but present	present	present	present

24.1.1 Estimates of the success rate of plantings and assessment of plant replacement requirements;	Estimates of the success rate of plantings and assessment of plant replacement requirements are not being recorded or undertaken in accordance with the VMP. Refer to Requirement 24.0	NA	Record estimates of the success rate of plantings and assessment of plant replacement requirements.	On-site: undertaking site inspection of monitoring locations and revegetation areas 1, 2. 3 and 4. Off-site: reviewing documents in the nature of photos, monitoring reports etc. to confirm that estimates of the success rate of plantings and assessment of plant replacement requirements are included in monitoring surveys & associated reporting of observations.	N
24.1.2 Evidence of erosion and sedimentation and the correct function of erosion control devices;	Refer to Requirement 24.0	NA	Record evidence of erosion and sedimentation and the correct function of erosion control devices.	On-site: undertaking site inspection of monitoring locations and revegetation areas 1, 2. 3 and 4. Off-site: reviewing documents in the nature of photos, monitoring reports etc. to confirm that monitoring surveys have included evidence in relation to erosion and sedimentation and the correct function of erosion control devices.	N
24.1.3 Depth and condition of mulch; and	Refer to Requirement 24.0	NA	Record depth and condition of mulch.	On-site: undertaking site inspection of monitoring locations and revegetation areas 1, 2. 3 and 4. Off-site: reviewing documents in the nature of photos, monitoring reports etc. to confirm that monitoring surveys have included evidence in relation to the depth and condition of mulch.	N
24.1.4 Recommendations for corrective measures and/or vegetation management.	Refer to Requirement 24.0	NA	Provide recommendations for corrective measures and/or vegetation management.	On-site: undertaking site inspection of monitoring locations and revegetation areas 1, 2. 3 and 4. Off-site: reviewing documents in the nature of photos, monitoring reports etc. to confirm that monitoring surveys have included recommendations for corrective measures and/or vegetation management.	N

24.1.5 The following performance indicators for revegetation works will be monitored (as per Table 4.1 of the BMP entitled "*Structural Performance of Revegetation*").	Refer to Requirement 24.0	NA	Compare results of monitoring to performance indicators for regeneration works as outlined in Table 4.1 of the Wahroonga Estate BMP.	On-site: undertaking site inspection of monitoring locations and revegetation areas 1, 2. 3 and 4. Off-site: reviewing documents in the nature of photos, monitoring reports etc. to confirm that performance indicators for revegetation works are monitored (as per Table 4.1 of the approved BMP entitled "Structural Performance of Revegetation").	N
Vegetation Management Plan - Condition 25	**4.8 Monitoring:** **4.8.3 Photo Monitoring** **Photo points will be selected in each management zone within areas that are representative of the vegetation in each zone.** **Photo monitoring will be undertaken every 6 months during weed control efforts.** **During the maintenance period, photo monitoring will be undertaken on an annual basis.** **A minimum of 1 photo point per management zone or 1 photo point per 5 hectares will be established, whichever is greater.** **Each photo point will be logged with GPS and once rehabilitation has commenced marked with a numbered peg.**				
25.0 Photo Monitoring will be undertaken by Qualified bushland management consultants. Photo points will be selected in each management zone within areas that are representative of the vegetation in each zone. Photo monitoring will be undertaken every 6 months during weed control efforts. During the maintenance period, photo monitoring will be undertaken on an annual basis. A minimum of 1 photo point per management zone or 1 photo point per 5 hectares will be established, whichever is greater. Each photo point will be logged with GPS and once rehabilitation has commenced marked with a numbered peg.	Refer to requirement 23.0. Photo monitoring has occurred but not every 6 months. at densities approximately in accordance with BMP. It will be undertaken every 6 months during weed control efforts. A minimum of 1 photo point per management zone or 1 photo point per 5 hectares has been established. Each photo point has been logged with GPS and once rehabilitation has commenced marked with a numbered peg.	NA	Photo Monitoring will be undertaken by Qualified bushland management consultants. Photo points will be selected in each management zone within areas that are representative of the vegetation in each zone. Photo monitoring will be undertaken every 6 months during weed control efforts. During the maintenance period, photo monitoring will be undertaken on an annual basis. A minimum of 1 photo point per management zone or 1 photo point per 5 hectares will be established, whichever is greater. Each photo point will be logged with GPS and once rehabilitation has commenced marked with a numbered peg.	On-site: undertaking site inspection of photo monitoring points. Off-site: reviewing documents in the nature of photo monitoring reports etc., to confirm that photo monitoring has been undertaken in accordance with the VMP.	N
25.1 Photo points will be selected in each management zone within areas that are representative of the vegetation in each zone.	Refer to requirement 23.0. Photo points have been established in each management zone within areas that are representative of the vegetation in each zone	NA	Establish photo monitoring points in each management zone within areas that are representative of the vegetation in each zone.	On-site: undertaking site inspection of photo monitoring points to confirm that photo points are selected in each management zone within areas that are representative of the vegetation in each zone. Off-site: reviewing documents in the nature of photo monitoring reports etc. to confirm that photo points are selected in each management zone within areas that are representative of the vegetation in each zone.	Y
25.2 Photo monitoring will be undertaken every 6 months during weed control efforts.	Refer to requirement 23.0 Photo monitoring has occurred but not every 6 months at densities approximately in accordance with the BMP.	NA	Monitor photo monitoring points every 6 months during weed control efforts.	On-site: undertaking site inspection of photo monitoring points. Off-site: reviewing documents in the nature of photo monitoring reports etc. to confirm that photo monitoring has been undertaken every 6 months during weed control efforts.	N
25.3 During the maintenance period, photo monitoring will be undertaken on an annual basis.	Refer to requirement 23.0 Photo monitoring has occurred annually throughout the site. Areas of the site under maintenance period are monitored annually	NA	Undertake photo monitoring will be undertaken on an annual basis during maintenance periods.	On-site: undertaking site inspection of photo monitoring points. Off-site: reviewing documents in the nature of photo monitoring reports etc. to confirm that photo monitoring has been undertaken on an annual basis during the maintenance period.	Y
25.4 A minimum of 1 photo point per management zone or 1 photo point per 5 hectares will be established, whichever is greater.	Refer to requirement 23.0 A minimum of 1 photo point per management zone or 1 photo point per 5 hectares has been established	NA	Establish a minimum of 1 photo monitoring point per management zone or 1 photo point per 5 hectares will be established, whichever is greater.	On-site: undertaking site inspection of photo monitoring points. Off-site: reviewing documents in the nature of photo monitoring reports etc. to confirm that a minimum of 1 photo point per management zone or 1 photo point per 5 hectares has been established, whichever is greater.	Y

25.5 Each photo point will be logged with GPS and once rehabilitation has commenced marked with a numbered peg.	Refer to requirement 23.0 Each photo point is being logged with GPS and marked with a numbered peg once rehabilitation has commenced	NA	Record GPS coordinate and once rehabilitation has commenced mark each photo monitoring point with a numbered peg.	On-site: undertaking site inspection of photo monitoring points. Off-site: reviewing documents in the nature of photo monitoring reports etc. to confirm that each photo point has been logged with GPS and once rehabilitation has commenced marked with a numbered peg.	Y
Vegetation Management Plan - Condition 26	**4.8 Monitoring:** **4.8.4 Vegetation Condition Map** **A vegetation condition map similar to Figure 3.1 will be created to illustrate the progress of weed control efforts.** **A map will be produced on the completion of Primary and Secondary Weeding which will progressively assess the performance of weed control efforts.**				
2**6.0** Vegetation condition mapping will be undertaken by a qualified bushland management consultant. A vegetation condition map similar to Figure 3.1 in the BMP will be created to illustrate the progress of weed control efforts. The Map will be produced on the completion of Primary and Secondary Weeding which will progressively assess the performance of weed control efforts.	ACA has developed a revised vegetation condition mapping each year in accordance with the BMP and following primary and secondary weeding. The revised mapping illustrates the progress of weed control efforts. Onsite inspections of the weed mapping at the time of the audit across 27 sites confirmed that mapping was relatively accurate. However some minor inconsistencies particularly in areas 1, 15, 21, 22 as mapped by BMP 2014 were observed at the time of the audit. Recommendation; The current years vegetation condition and weed mapping undertake a review/refinement of mapping weed polygons identified in the audit for changes in weed densities	Review of available documents, site inspection	Vegetation condition mapping will be undertaken by a qualified bushland management consultant. A vegetation condition map similar to Figure 3.1 in the BMP. The Map will be produced on the completion of Primary and Secondary Weeding which will progressively assess the performance of weed control efforts.	On-site: undertaking a site inspection to verify vegetation condition mapping. Off-site: reviewing vegetation condition map to confirm that mapping has been undertaken in accordance with the VMP.	**Y**
26.1 A vegetation condition map similar to Figure 3.1 will be created to illustrate the progress of weed control efforts.	A vegetation map has been prepared and shows the progress of weed control efforts however some inconsistencies were identified as described in more detail under Requirement 26.0 Recommendation review and update minor inconsistencies and review potential changes in weed rating identified during site audit	NA	Create a vegetation condition map to illustrate the progress of weed control efforts.	On-site: undertaking a site inspection to verify vegetation condition mapping. Off-site: reviewing weed performance mapping to confirm that a vegetation condition map similar to Figure 3.1 has been created to illustrate the progress of weed control efforts.	Y

26.2 A map will be produced on the completion of Primary and Secondary Weeding which will progressively assess the performance of weed control efforts.	A vegetation map has been prepared which will progressively assess the performance of weed control efforts. Some minor inconsistencies were identified by audit as described in more detail under Requirement 26.0	NA	Produce map on the completion of Primary and Secondary Weeding to show the progressive performance of weed control efforts.	On-site: undertaking a site inspection to verify vegetation condition mapping. Off-site: reviewing weed performance mapping to confirm that, if applicable, a map was produced on the completion of Primary and Secondary Weeding which will progressively assess the performance of weed control efforts.	Y
Vegetation Management Plan - Condition 27	**4.9 Documenting and Reporting:** **The VMP will be an adaptive plan of management that is updated as required to take account of the rate of progress of the aforementioned measures within the plan and also the success of vegetation management measures. Changes may be made to the plan in consultation with DEWHA in the event that problems are detected in the management of the bushland on site.** **The consultant will be responsible for ensuring the measures outlined in this VMP are implemented and that performance criteria are satisfied.** **DEWHA require a report to be submitted every 12 months until the Minister is satisfied that the proponent has complied with all the conditions of approval.** **This will be prepared by the vegetation management consultant and forwarded to DEWHA within three months of every 12 month anniversary of the commencement of the action taking place. The progress reports will:** **• State the findings of the monitoring activities;** **• Discuss any problems encountered in implementing the BMP; and** **• Comment on the stability of and condition of any associated stream works.**				
27.0 The VMP will be an adaptive plan of management that is continually updated. The consultant will be responsible for ensuring the measures outlined in this VMP are implemented and that performance criteria are satisfied. DEWHA require a report to be submitted every 12 months by the revegetation management consultant until the Minister is satisfied that the proponent has complied with all the conditions of approval. The progress reports will: · State the findings of the monitoring activities; · Discuss any problems encountered in implementing the BMP; and · Comment on the stability of and condition of any associated stream works.	The 2014 annual BMP report provides a range of findings and discussion on the successfulness or otherwise of management actions and stability of stream works. The findings of the monitoring activities are also presented however, only limited information of floristic abundance or quantitative weed cover is currently identified by the monitoring. This issue is covered by other approval requirements however.	Review of available documents	The VMP will be an adaptive plan of management that is continually updated. The consultant will be responsible for ensuring the measures outlined in this VMP are implemented and that performance criteria are satisfied. DEWHA require a report to be submitted every 12 months by the revegetation management consultant until the Minister is satisfied that the proponent has complied with all the conditions of approval. The progress reports will:· State the findings of the monitoring activities; · Discuss any problems encountered in implementing the BMP; and · Comment on the stability of and condition of any associated stream works.	Off-site: reviewing documents in the nature of the VMP, updates to the VMP and annual progress reports submitted to the DEWHA to confirm that reporting has been undertaken in accordance with the approved BMP.	N
27.1 The VMP will be an adaptive plan of management that is updated as required to take account of the rate of progress of the aforementioned measures within the plan and also the success of vegetation management measures.	The VMP is adaptive and outlines actions resulting from success and progress of the management activities as well as trials for alterative methods.	Review of available documents	VMP to contain an adaptive plan of management to be updated as required to take account of the rate of progress of the afore mentioned measures within the plan and also the success of vegetation management measures.	Off-site: reviewing documents in the nature of the VMP and modifications made to the VMP to confirm that the VMP is an adaptive plan of management that is updated to take account of the rate of progress and success of vegetation management measures.	Y
27.2 Changes must be made to the plan in consultation with DEWHA (now the Department of the Environment) in the event that problems are detected in the management of the bushland on site.	No changes have been made to the BMP.	Review of available documents	Adapt plan of management in consultation with DEWHA (now the Department of the Environment) in the event that problems are detected in the management of the bushland on site.	Off-site: reviewing documents in the nature of the VMP, modifications made to the VMP and evidence of consultation with DEWHA in the event of any problems that have arisen.	N/A
27.3 The consultant will be responsible for ensuring the measures outlined in the VMP are implemented.	Refer to comment 23.0 and 24.0. An annual BMP report is prepared by the Graham Wegener (Dip App Sci Ag) and Frances O'Brien (BEnv LLB). A covering letter is provided with each report providing a review against approval condition. Several non-compliances were raised with regard to the implementation of the VMP and the consultant can therefore not be said to be discharging his responsibility effectively.	Review of available documents	Consultant to ensure that measures outlined in the VMP are implemented.	On-site: undertake site inspection of areas covered under the VMP. Off-site: reviewing documents in the nature of the VMP, modifications made to the VMP and evidence to confirm that the consultant has ensured the measures outlined in the VMP have been and are being implemented.	N
27.4 The consultant will be responsible for ensuring that performance criteria are satisfied.	The Independent Auditor Comments at 23.0 state that "Monitoring currently appears to be restricted to photo monitoring. No evidence of floristic sampling, structural composition or % percentage abundance of native vs weed species is provided." Further 24.0 notes that "No evidence of monitoring progress against the performance measures was found in the annual BMP reports or elsewhere".	Review of available documents	Consultant to ensure that performance criteria are being satisfied.	Off-site: reviewing documents pertaining to performance criteria such as monitoring reports to confirm that the consultant is ensuring performance criteria are satisfied.	N

27.5 A report is to be submitted to the Department of the Environment every 12 months until the Minister is satisfied that the proponent has complied with all the conditions of approval.	No direction has been received from the Department of Environment to cease sending annual reports or in relation to any conditions of approval.	Review of available documents	Submit report to Department of the Environment every 12 months until the Minister is satisfied that the proponent has complied with all the conditions of approval in accordance within the Wahroonga Estate BMP.	Off-site: reviewing documents in the nature of annual progress reports submitted to the DEWHA.	Y
27.6 The annual report is to be prepared by the vegetation management consultant.	An annual progress BMP is prepared by the Graham Wegener (Dip App Sci Ag) and Frances O'Brien (BEnv LLB) who lead the Grounds & Bush Care Department Seventh-day Adventist Aged Care Ltd	Review of available documents	Vegetation management consultant to prepare annual report in accordance with Wahroonga Estate BMP.	Off-site: reviewing documents in the nature of annual progress reports submitted to the DEWHA to confirm that the annual report is prepared by the vegetation management consultant.	Y
27.7 The annual report is to be forwarded to the Department of the Environment within three months of every 12 month anniversary of the commencement of the action taking place.	A letter sent from the former Department of Sustainability, Environment, Water, Population and Communities (SEWPAC) on 25 October 2011 (Ref: 2010/21069) states that annual reporting requirements under Condition 4 of the approval were to commence on 19 December 2011 and recur annually thereafter. The audit protocol should be revised to reflect that letter. The following reports were provided to the auditors: - 1 December 2012 ('Year 1 Report') - submitted in December 2012, however; a separate compliance report required under this clause was not submitted until 25 February 2013 - 2 November 2013 ('Year 2 Report') - submitted on 17 Dec 2013 - September 2014 ('Year 3 Report') - submitted on 10 Dec 2014 The reports detail compliance against the requirements of the BMP and are structured to correspond to the BMP's structure. Specific requirements of the approval are addressed in a covering letter provided with each report. These letters do not identify any compliance issues. Compliance with this condition has not been met as the first compliance report was submitted late. Any future audits should assess compliance against compliance of the submission dates of future reports.	Staff interviews, review of available documents	Forward annual report to the Department of the Environment within three months of every 12 month anniversary of the commencement of the action taking place	Off-site: reviewing documents in the nature of progress reports submitted to the DEWHA to confirm that annual reports are being forwarded to the Department within three months of every 12 month anniversary of the commencement of the action.	N
27.8 The progress reports will:					
27.8.1 State the findings of the monitoring activities;	Monitoring results are outlined in each annual report.	Review of available documents	Progress reports to state the findings of the monitoring activities.	Off-site: reviewing documents in the nature of progress reports submitted to the DEWHA to confirm that the findings of monitoring activities are being reported.	Y
27.8.2 Discuss any problems encountered in implementing the BMP;	Issues with implementing the BMP are outlined in Section 7 of the 2012 annual report. The status of these changes are not described in the 2013 or 2014 report and it was stated during audit interviews that a response from the Department of Environment had not been received regarding this issue. The 2013 and 2014 reports discuss site issues and refer to 'requested changes' and therefore are considered to meet the intention of this requirement. ACA should liaise with the Department regarding revision of the BMP however and this is outlined in more detail in other sections.	Review of available documents, staff interviews	Progress reports to discuss any problems encountered in implementing the BMP.	Off-site: reviewing documents in the nature of progress reports submitted to the DEWHA to confirm that any problems encountered in implementing the approved BMP have been discussed with the Department & reported in the associated annual progress report.	Y

27.8.3 Comment on the stability of any associated stream works; and	Hydrology issues and the condition of streams on the site are described in each report (e.g. Chapter 7 and Appendix 3 of the 2013 report).	Review of available documents	Progress reports to comment on the stability of any associated stream works.	Off-site: reviewing documents in the nature of progress reports submitted to the DEWHA to confirm that the annual progress reports have provided comment on the stability of any associated stream works.	Y
27.8.4 Comment on the condition of any associated stream works.	Hydrology issues and the condition of streams on the site are described in each report (e.g. Chapter 7 and Appendix 3 of the 2013 report).	Review of available documents	Progress reports to comment on the condition of any associated stream works.	Off-site: reviewing documents in the nature of progress reports submitted to the DEWHA to confirm that the annual progress reports have provided comment on the condition of any associated stream works.	Y
Fire Management Plan - Condition 1	**5.3 Fire Behaviour:** **5.3.11 Conditions Suitable for Prescribed Burns** **i. <u>Season</u>** **Fuel Management generally should occur outside the designated Bushfire Danger Period [1st October and the 31st March].**				
1.0 Fuel Management should occur outside of the designated bushfire danger period (1 October - 31 March). Prescribed burns may only occur within this period with written permission from the NSW Rural Fire Service and only if there is a secure boundary and fuel moisture content and weather conditions meet the burn prescriptions.	No controlled burns or accidental fires have occurred at the site since the BMP was developed. Refer to Requirements 7.1 and 7.2 of the VMP. NSW Rural Fire Service has provided in November 2014 a Hazard Reduction Certificate Environmental Approval for Works7at 9 Mt Pleasant Ave Wahroonga For the purpose of: Managing Strategic Fire Advantage Zone using the following method of hazard reduction works: · Burning - low intensity, of 3.32(ha). Reference to NSW Fire and rescue includes representatives of NSW Rural Fire Service and where made prior to the Bushfire danger period. Ultimately NSW RFS determine when is appropriate to burn. The Approved hazard reduction certificate allows burning to occur anytime	NA	Fuel Management should occur outside of the designated bushfire danger period (1 October - 31 March). Prescribed burns may only occur within this period with written permission from the NSW Rural Fire Service and only if there is a secure boundary and fuel moisture content and weather conditions meet the burn prescriptions.	On-site: undertaking site inspection of areas considered appropriate for prescription burning, or areas that have been burnt where available. Off-site: reviewing of documents pertaining to bush fire management, records of decisions made and interviewing persons responsible for bush fire management to confirm that actions undertaken are in accordance with the Fire Management Plan (FMP).	NA
1.1 During the non-bushfire danger period, a number of factors allow specific prescription burning to be undertaken; these include:	Refer to Requirements 1.0	NA	During the non-bushfire danger period, a number of factors allow specific prescription burning to be undertaken; these include:		NA
1.1.1 Dry surface fuels;	Refer to Requirements 1.0	NA	Consider dry surface fuels before prescribed burns in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of areas considered appropriate for prescription burning, or areas that have been burnt where available. Off-site: reviewing of documents pertaining to bush fire management, records of decisions made and interviewing persons responsible for bush fire management to confirm that dry surface fuels are considered prior to undertaking specific prescription burning during the non-bushfire danger period.	NA
1.1.2 A high level of moisture recovery in the fine fuels at night to help control burning operations; and	Refer to Requirements 1.0	NA	Consider high level of moisture recovery in the fine fuels at night to help control burning operations before prescribed burns in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of areas considered appropriate for prescription burning, or areas that have been burnt where available. Off-site: reviewing of documents pertaining to bush fire management and records of decisions made to confirm that, prior to undertaking specific prescription burning during the non-bushfire danger period, consideration is given to the level of moisture recovery in the fine fuels at night to help control burning operations.	NA
1.1.3 A low probability of dry north-westerly/westerly winds, high temperatures and low humidity.	Refer to Requirements 1.0	NA	Consider low probability of dry north-westerly/westerly winds, high temperatures and low humidity before prescribed burns in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of areas considered appropriate for prescription burning, or areas that have been burnt where available. Off-site: reviewing of documents pertaining to bush fire management and records of decisions made to confirm that, prior to undertaking specific prescription burning during the non-bushfire danger period, a low probability of dry north-westerly/westerly winds, high temperatures and low humidity are present.	NA

1.2 Prescribed burns may be undertaken during the designated Bushfire Danger Period only with permission from the NSW Rural Fire Service and only if there is a secure boundary and fuel moisture content and weather conditions meet the burn prescriptions (as detailed in points under 1.1, above).	Refer to Requirements 1.0	NA	Undertake prescribed burns during designated Bushfire Danger Period only with permission from the NSW Rural Fire Service and only if there is a secure boundary and fuel moisture content and weather conditions meet the burn prescriptions (as detailed in points under 1.2, above).	On-site: undertaking site inspection of areas considered appropriate for prescription burning, or areas that have been burnt where available. Off-site: reviewing of documents pertaining to bush fire management and records of decisions made, interviewing persons responsible for bush fire management to confirm that, prior to undertaking specific prescription burning during the designated Bushfire Danger Period, the conditions under 1.1 (above) are met and permission granted by the NSW Rural Fire Service.	Y
Fire Management Plan - Condition 2	**5.4 Fire Mitigation Consideration:** **5.4.1 Hazard Reduction Burning** **For the purpose of reducing the fire hazard, prescription burning should be focused on low scorch and the temporary removal of some of the shrub layer in a given area.** **Fire of a higher intensity may be prescribed from time to time for ecological purposes.**				
2.0 Fire hazard reduction burning should be focused on low scorch and the temporary removal of some of the scrub layer in a given area.	Refer to Requirements 1.0	NA	Fire hazard reduction burning should be focused on low scorch and the temporary removal of some of the scrub layer in a given area.	On-site: undertaking site inspection of areas considered appropriate for prescription burning, or areas that have been burnt where available. Off-site: reviewing of documents pertaining to bush fire management and records of decisions made to confirm that fire hazard reduction burning has been focused on low scorch and the temporary removal of some of the scrub layer in a given area.	NA
2.1 Fire of a higher intensity may be prescribed from time to time for ecological purposes.	Refer to Requirements 1.0	NA	Undertake higher intensity fires from time to time for ecological processes.	On-site: undertaking site inspection of areas considered appropriate for high intensity prescription burning, or areas that have been burnt where available. Off-site: reviewing of documents pertaining to bush fire management, records of decisions made and interviewing persons responsible for bush fire management.	NA
Fire Management Plan - Condition 3	**5.4 Fire Mitigation Consideration:** **5.4.2 Fuel Reduction** **To limit the speed and spread of unscheduled fire within the site, undergrowth will need to be thinned or removed, and some species managed.** **All exotic species of plants should be targeted when clearing to halt their proliferation and colonisation of areas particularly following prescription burn.**				
3.1 To limit the speed and spread of unscheduled fire within the site, undergrowth will need to be thinned or removed, and some species managed.	Refer to Requirements 7.1 and 7.2. . Targeted weeding is occurring across the site as a means of thinning and reducing undergrowth, thus reducing the fuel load in the event of an unscheduled fire.	NA	Carry out thinning or removal of undergrowth and some species management to limit speed and spread of unscheduled fire within the site.	On-site: undertaking site inspection of areas where understorey management has been undertaken, where available. Off-site: Review documents to confirm that undergrowth has been thinned or removed, and some species managed to limit the speed and spread of unscheduled fire within the site.	Y
3.2 All exotic species of plants should be targeted when clearing to halt their proliferation and colonisation of areas particularly following prescription burn.	Refer to Requirements 7.1 and 7.2. No prescribed burn has been undertaken to date, but targeted weeding has occurred for exotic species within the site.	NA	Carry out targeted clearing of all exotic species to halt their and colonisation of areas particularly following prescription burn.	On-site: undertaking site inspection of areas targeting the clearing of exotic species and completing 20 X 20m Bio banking quadrats to identify vegetation composition. Off-site: reviewing of documents pertaining to weed management and monitoring to confirm that all exotic species of plants are targeted when clearing to halt their proliferation and colonisation of areas particularly following prescription burns.	Y
Fire Management Plan - Condition 4	**5.4 Fire Mitigation Consideration:** **5.4.3 Sensitive Areas** **Burning in proximity to sensitive areas should be avoided to ensure that damage doesn't occur. Alternative options are available. Selective clearing of shrub layers around a sensitive area is one option which would reduce the potential for damage - Particularly in areas known to support the growth of threatened species.**				

4.0 Burning in proximity to sensitive areas should be avoided to ensure that damage doesn't occur. Selective clearing of shrub layers around a sensitive area is one option which would reduce the potential for damage - Particularly in areas known to support the growth of threatened species.	Refer to Requirements 1.0 and 3.1 above. Selective clearing of weeds from shrub layers around a sensitive area has been undertaken. Alternative such as Indigenous fire stick practices and additional fire trails as alternative to burns in sensitive areas are considered in the BMP2014.	NA	Avoid burning in proximity to sensitive areas to ensure that damage doesn't occur. Selective clearing of shrub layers around a sensitive area is one option which would reduce the potential for damage - Particularly in areas known to support the growth of threatened species.	On-site: undertaking site inspection of areas where understorey management & burning in proximity to sensitive areas has occurred, where available. Off-site: reviewing of documents pertaining to bush fire management and records of decisions made to confirm that burning in proximity to sensitive areas has been undertaken in accordance with the FMP.	NA
4.1 Burning in proximity to sensitive areas should be avoided to ensure that damage doesn't occur.	Refer to Requirements 1.0	NA	Avoid burning in proximity to sensitive areas to ensure that damage doesn't occur.	On-site: undertaking site inspection of sensitive areas. Off-site: reviewing of documents pertaining to bush fire management and records of decisions made to confirm that burning in proximity to sensitive areas has been avoided to ensure that damage doesn't occur.	NA
4.2 Alternative options are available. Selective clearing of shrub layers around a sensitive area is one option which would reduce the potential for damage - Particularly in areas known to support the growth of threatened species.	Refer to Requirements 7.1 and 7.2. Alternative such as Indigenous fire stick practices and additional fire trails as alternative to burns in sensitive areas are considered in the BMP2014.	NA	Undertake alternative options where necessary such as selective clearing of shrub layers around a sensitive area is one option which would reduce the potential for damage - Particularly in areas known to support the growth of threatened species.	On-site: undertaking site inspection of areas where understorey management has been undertaken in close proximity to sensitive areas, where available. Off-site: reviewing of documents pertaining to bush fire management and records of decisions made to confirm that alternative options are explored to reduce the potential for damage.	Y
Fire Management Plan - Condition 5	**5.4 Fire Mitigation Consideration:** **5.4.4 Fire Regime Strategies for Biodiversity Conservation** **The future fire management of the vegetation within the Wahroonga Estate must provide a high priority for maintaining ecological diversity, such as the protection of the known threatened species on the site and the riparian corridors and ephemeral streams and watercourses.** **Fire frequency must take into account the duration of time required between each fire in any one community ensuring that:** **• Sufficient seed banks have developed within each treatment zone; and** **• Plants have sufficiently recovered from past fires and are capable of surviving another burn.** **The intensity of fires must take into consideration:** **• The amount of fuel that will burn and the subsequent fire intensity anticipated;** **• The depth into the soil and the heat required to trigger germination of the seed bank; and** **• The age of canopy trees and whether they are capable of regeneration.** **The methodology of hazard reduction burns must include measures which minimise potential impact on species which are not fire tolerant.** **iv. Management strategies involve the manipulation of fire regimes.** **• Assessment of fire regimes through mapping of the locality and characteristics of all fires will be ongoing so that strategies (manipulation of fire regimes) can be regularly reviewed, refined and adjusted.** **v. Methodology of hazard reduction burning.** **• Preplanning of hazard reduction burning and the preparation of 'Burn Plans' shall consider, where tracks and other control lines are not available, the need to minimise impact on the habitat of non-fire tolerant threatened species. This shall include moisture content in the fuel bed, ignition points, time of day/increased humidity, potential for rainfall etc.** **• ensure that a mosaic of age-class flora is maintained, as well as generating refuges for fauna species.** **• Continual evaluation of burning and its impact on flora should be undertaken to ensure appropriate fire regimes are being utilized.** **• Maintenance of habitat within the vegetated areas is essential for conserving viable flora and fauna populations.**				

5.1 Future fire management of the vegetation within the Wahroonga Estate must provide a high priority for maintaining ecological diversity, such as the protection of the known threatened species on the site and the riparian corridors and ephemeral streams and watercourses.	The intention of this requirement appears to be to encourage the restriction of controlled burns to areas containing fire sensitive vegetation (e.g.. Riparian corridors, threatened species). This requirement does not apply as no burns have been undertaken. It should be noted that fire/public safety requirements override the BMP. Approved Hazard reduction certificate has been granted that looks at maintaining a low intensity burn over a portion of the site 3.2 ha and with consideration of the site specific requirements and details. ACA have contacted the relevant fire authority and have identified the fire management plan within the BMP considerations relating to maintaining ecological diversity and threatened species and riparian areas of the site. The fire authority will consider these matters in issuing approval to undertake the burn however have indicated timing of burns for areas of the site must meet the appropriate safety requirements for surrounding receivers.	NA	Future fire management of the vegetation within the Wahroonga Estate must provide a high priority for maintaining ecological diversity, such as the protection of the known threatened species on the site and the riparian corridors and ephemeral streams and watercourses.	On-site: undertaking site inspection of Wahroonga Estate to assess ecological diversity, riparian corridors and ephemeral streams, watercourses and undertake 20 x 20m BioBanking quadrat to identify species present. Off-site: reviewing of documents relating to monitoring reports, bush fire management, records of decisions made and interviewing persons responsible for bush fire management.	Y
5.2 Fire frequency must take into account the duration of time required between each fire in any one community ensuring that:	Refer to Requirements 5.1 of FMP above	NA	Fire frequency must take into account the duration of time required between each fire in any one community ensuring that:		NA
5.2.1 Sufficient seed banks have developed within each treatment zone; and	Refer to Requirements 5.1 of FMP above and Sections 7.1 and 7.2 of the VMP above. While a hazard reduction burn has been proposed with consideration to BMP, fire frequency requirements and development of sufficient seed banks for communities within the site, no burn has occurred.	NA	Sufficient seed banks have developed within each treatment zone	On-site: undertaking site inspection of treatment zones and undertake 20 x 20m BioBanking quadrat to identify germination from the soil seed bank. Off-site: reviewing of documents relating to monitoring reports and bush fire management records.	NA
5.2.2 Plants have sufficiently recovered from past fires and are capable of surviving another burn.	Refer to Requirements 5.1 of FMP above and Sections 7.1 and 7.2 of the VMP above. While a hazard reduction burn has been proposed with consideration to BMP and fire frequency requirements, including plants ability to recover from past fires, no burn has occurred.	NA	Plants have sufficiently recovered from past fires and are capable of surviving another burn.	On-site: undertaking site inspection of treatment zones and undertake 20 x 20m BioBanking quadrat to identify germination from the soil seed bank and assess plant recovery from past burns if applicable. Off-site: reviewing of documents relating to monitoring reports and bush fire management records.	NA
5.3 The intensity of fires must take into consideration:	Refer to Requirements 5.1 of FMP above and Sections 7.1 and 7.2 of the VMP above.		The intensity of fires must take into consideration:		NA
5.3.1 The amount of fuel that will burn and the subsequent fire intensity anticipated;	Refer to Requirements 5.1 of FMP above and Sections 7.1 and 7.2 of the VMP above. A hazard reduction burn has been proposed with consideration to BMP and the amount of fuel within the site and the subsequent fire intensity anticipated, however no burn has occurred.	NA	Anticipate the amount of fuel that will burn and the subsequent fire intensity.	On-site: undertaking site inspection of treatment zones and undertake 20 x 20m BioBanking quadrat to identify fuel loads. Off-site: reviewing of documents relating to bush fire management and records of decisions made, interviewing persons responsible for bush fire management.	NA
5.3.2 The depth into the soil and the heat required to trigger germination of the seed bank; and	Refer to Requirements 5.1 of FMP above and Sections 7.1 and 7.2 of the VMP above. While a hazard reduction burn has been proposed with consideration to BMP and heat required to trigger germination of the seed bank, however no burn has occurred.	NA	Consider the depth into the soil and the heat required to trigger germination of the seed bank.	On-site: undertaking site inspection of treatment zones and undertake 20 x 20m BioBanking quadrat to identify germination from the soil seed bank. Off-site: reviewing of documents relating to monitoring reports, bush fire management records and interviewing persons responsible for bush fire management.	NA
5.3.3 The age of canopy trees and whether they are capable of regeneration.	Refer to Requirements 5.1 of FMP above and Sections 7.1 and 7.2 of the VMP above. While a hazard reduction burn has been proposed with consideration to BMP and whether the age of the canopy trees are capable of regeneration, no burn has occurred.	NA	Consider the age of canopy trees and whether they are capable of regeneration.	On-site: undertaking site inspection of treatment zones and undertake 20 x 20m BioBanking quadrat to identify age of canopy trees. Off-site: reviewing of documents relating to monitoring reports and bush fire management records.	NA
5.4 The methodology of hazard reduction burns must include measures which minimise potential impact on species which are not fire tolerant.	Refer to Requirements 5.1 of FMP above and Sections 7.1 and 7.2 of the VMP above. While a hazard reduction burn has been proposed with consideration to BMP and including measures which minimise potential impact on species which are not fire tolerant, no burn has occurred.	NA	Methodology of hazard reduction burns must include measures which minimise potential impact on species which are not fire tolerant.	Off-site: reviewing of documents relating to bush fire management, records of decisions made and interviewing persons responsible for bush fire management to confirm that methodology of hazard reduction burns includes measures to minimise potential impact on species which are not fire tolerant.	NA
5.5 Assessment of fire regimes through mapping of the locality and characteristics of all fires will be ongoing so that strategies (manipulation of fire regimes) can be regularly reviewed, refined and adjusted.	Refer to Requirements 7.1 and 7.2 of the VMP above. The assessment of fire regimes through mapping of the locality is undertaken and managed by the local fire authorities. ACA have proactively and regularly been in consultation with these authorities to assess the timing for and the proposed fire strategy for the site is regularly reviewed, refined and adjusted.	NA	Assess fire regimes through mapping of the locality and characteristics of all fires will be ongoing so that strategies (manipulation of fire regimes) can be regularly reviewed, refined and adjusted.	Off-site: reviewing of documents relating to bush fire management, maps of fire regimes and interviewing persons responsible for bush fire management to confirm that assessment of fire regimes through mapping of the locality and characteristics of all fires is occurring and strategies (manipulation of fire regimes) are being regularly reviewed, refined and adjusted.	Y

5.6 Preplanning of hazard reduction burning and the preparation of 'Burn Plans' shall consider, where tracks and other control lines are not available, the need to minimise impact on the habitat of non-fire tolerant threatened species. This shall include moisture content in the fuel bed, ignition points, time of day/increased humidity, potential for rainfall etc.	Refer to Requirements 7.1 and 7.2 of the VMP above. Application for hazard reduction certificates were in accordance with the SFMZ requirements of the BMP and existing fuel loads environmental considerations following weeding and remediation through the area (BMP2013).	NA	Preplan hazard reduction burning and the preparation of 'Burn Plans' shall consider, where tracks and other control lines are not available, the need to minimise impact on the habitat of non-fire tolerant threatened species. This shall include moisture content in the fuel bed, ignition points, time of day/increased humidity, potential for rainfall etc.	Off-site: reviewing of documents relating to bush fire management, preplanning records and interviewing persons responsible for bush fire management to confirm that preplanning of hazard reduction burning and the preparation of 'Burn Plans' considers the need to minimise impact on the habitat of non-fire tolerant threatened species and includes moisture content in the fuel bed, ignition points, time of day/increased humidity, potential for rainfall etc.	Y
5.7 ensure that a mosaic of age-class flora is maintained, as well as generating refuges for fauna species.	Refer to Requirements 5.1 of FMP above and Sections 7.1 and 7.2 of the VMP above. The proposed hazard reduction burn has considered a mosaic of age class flora and fauna refuges are maintained, however no burn has occurred.	NA	Maintain mosaic of age-class flora, as well as generating refuges for fauna species.	On-site: site inspection of Wahroonga Estate to inspect maintenance of age-classes of flora and generation of fauna refuges.	NA
5.8 Continual evaluation of burning and its impact on flora should be undertaken to ensure appropriate fire regimes are being utilized.	Refer to Requirements 5.1 of FMP above and Sections 7.1 and 7.2 of the VMP above. While a hazard reduction burn has been proposed, no burn has occurred.	NA	Evaluate burning and its impact on flora should be undertaken to ensure appropriate fire regimes are being utilized.	Off-site: reviewing of documents relating to bush fire management, preplanning records and interviewing persons responsible for bush fire management to confirm that continual evaluation of burning and its impact on flora is being undertaken to ensure appropriate fire regimes are being utilized.	NA
5.9 Maintenance of habitat within the vegetated areas is essential for conserving viable flora and fauna populations.	Refer to Requirements 5.1 of FMP above and Sections 7.1 and 7.2 of the VMP above. While a hazard reduction burn has been proposed with consideration to BMP and will maintain habitat within the vegetated areas for conserving viable flora and fauna populations, no burn has occurred.	NA	Maintain habitat within the vegetated areas is essential for conserving viable flora and fauna populations.	On-site: site inspection of Wahroonga Estate to inspect vegetated areas that create fauna habitat.	NA
Fire Management Plan - Condition 6	**5.4 Fire Mitigation Consideration:** **5.4.5 Threatened Plants** **Regardless of the type of method of hazard reduction proposed the management prescriptions for plant species are to be applied within an area bounded by at least 100 metres from the centre of the identified location.** **i. Mechanical clearing** **Slashing, trittering, tree removal and bulldozing are generally not allowable for known locations of threatened plants.** **ii. Prescribed Fire (Hazard Reduction Burning)** **Minimum fire intervals are prescribed for threatened plants, based on known fire response or based on factors such as the age at which there is sufficient seed production for the plant/s to persist.**				
6.0 Fire mitigation consideration for threatened plants include: -Slashing, trittering, tree removal and bulldozing are generally not allowable for known locations of EECs. -Minimum fire intervals are prescribed for threatened plants	The following fire management activities were undertaken in the audit period that required native vegetation: - all APZ's were cleared - fire trails were maintained through constant use, hand weeding and mulching. These activities were undertaken to ensure compliance with APZ requirements and fire management were achieved and hence, impacts to native vegetation were unavoidable.	Staff interviews, review of available documents	Fire mitigation consideration for threatened plants include: -Slashing, trittering, tree removal and bulldozing are generally not allowable for known locations of EECs. -Minimum fire intervals are prescribed for threatened plants	On-site: undertaking site inspection of Wahroonga Estate of mitigation measures implemented. Off-site: reviewing of documents relating to bush fire management and interviewing persons responsible for bush fire management.	Y
6.1 Regardless of the type of method of hazard reduction proposed the management prescriptions for plant species are to be applied within an area bounded by at least 100 metres from the centre of the identified location.	Refer to Requirement 6.0. No threatened flora are currently known from the site	NA	Apply management prescriptions for plant species within an area bounded by at least 100 metres from the centre of the identified location regardless of the type of method of hazard reduction proposed	On-site: undertaking site inspection of plant species boundaries. Off-site: reviewing of documents relating to bush fire management and interviewing persons responsible for bush fire management.	NA
6.2 Mechanical Clearing Slashing, trittering, tree removal and bulldozing are generally not allowable for known locations of threatened plants.	Refer to Requirement 6.0 and 6.1 above		Mechanical clearing generally not allowable for known locations of threatened plants.	On-site: undertaking visual inspection of threatened species locations.	NA
6.3 Prescribed Fire (Hazard Reduction Burning) Minimum fire intervals are prescribed for threatened plants, based on known fire response or based on factors such as the age at which there is sufficient seed production for the plant/s to persist.	Refer to Requirements 5.1 of FMP above and Sections 7.1 and 7.2 of the VMP above. While a hazard reduction burn has been proposed with consideration to BMP and minimum fire intervals for threatened plants, based on known fire response or based on factors such as the age at which there is sufficient seed production for the plant/s to persist, however no threatened flora are currently known from the site and no burn has occurred.	NA	Minimum fire intervals for prescribed burns for threatened plants, based on known fire response or based on factors such as the age at which there is sufficient seed production for the plant/s to persist.	On-site: undertaking visual inspection of threatened species locations. Off-site: reviewing of documents relating to bush fire management and interviewing persons responsible for bush fire management.	NA

Fire Management Plan - Condition 7

5.4 Fire Mitigation Consideration:

5.4.7 Endangered Ecological Conditions

I. Mechanical Clearing
Slashing, trittering, tree removal and bulldozing are generally not allowable for known locations of EECs.

ii. Prescribed Fire (Hazard Reduction Burning)
• No part of an EEC is to be subjected to successive fires more frequently than the minimum fire interval: and
• At least 50% of the EEC within each Local Government Area [LGA] must exist in a state that has been burnt less frequently than the minimum fire interval.
• Old growth patches of each EEC should be maintained in those areas not critical for protection of life and property.

Table 5.1 of the BMP provides information on the minimum fire frequency and mechanical forms of hazard reduction for the known Endangered Ecological Communities located within the Estate.

Table 5.2 of the BMP provides information on the minimum fire frequency and mechanical forms of hazard reduction for the known threatened fauna species located within the Estate.

Table 5.1 MINIMUM FIRE FREQUENCY FOR KNOWN ENDANGERED ECOLOGICAL COMMUNITIES WITHIN THE SITE

Species	Listed in TSC Act	Listed in EPBC Act	Species specific conditions relating to the use of fire	Conditions relating to mechanical forms of hazard reduction
Blue Gum High Forest	EEC	CEEC	No fire more than once every 15 years and of low intensity	No slashing and no trittering or tree removal
Turpentine Ironbark Forest	EEC	CEEC	No fire more than once every 10 years	No slashing, trittering or tree removal

Table 5.2 FIRE MANAGEMENT STRATEGIES FOR THREATENED FAUNA SPECIES

Species	Listed in TSC Act	Listed in EPBC Act	Species specific conditions relating to the use of fire	Conditions relating to mechanical forms of hazard reduction
Grey Headed Flying Fox	Vulnerable	Vulnerable	No burning adjacent to streams and no burning in and around ephemeral drainage lines at the headwaters of creeks	No slashing, trittering or tree removal
Eastern False-Pipistrelle	Vulnerable		Protect Hollows	No removal of trees
Powerful Owl	Vulnerable		No burning around known nesting sites at any time	No slashing, trittering or tree removal of or around known nesting sites
Gang Gang Cockatoo	Vulnerable		Avoid know roost sites	Avoid know roost sites
Swift Parrot	Endangered	Endangered	Avoid Crown Fires	No removal of trees
Glossy Black Cockatoo	Vulnerable		No burning of Allocasuarina thickets	Yes but avoid Allocasuarina thickets

Table 5.3 VEGETATION COMMUNITY AND FIRE INTERVAL THRESHOLDS TO MAINTAIN BIODIVERSITY IN SFMZS & LMZS

Vegetation Formation	Description	Minimum Fire Interval [Years] for SFMZ	Minimum Fire Interval [Years] for LMZ
Wet Sclerophyll Forest [grassy sub-formations]	Tall forests with dense understorey of shrubs with broad soft leaves – found in sheltered wet valleys & floodplains	25 years	30 years – Low intensity fire only
Dry Sclerophyll Forest [shrubby sub-formations]	Low Forests and Woodland dominated by eucalypts, with understories of hard-leaved shrubs and sparse groundcover	7 years	10 years

	Appendix E – "Fire Interval Table for Strategic Fire Advantage Zones & Land Management Zones" of the NSW Rural Fire Service "Bushfire Environmental Code for New South Wales – February 2006 provides the following information on fire frequency for vegetation communities found within the site (refer to Table 5.3 of the BMP). **In order to maintain biodiversity, appropriate fire regimes for vulnerable species need to be implemented within their biodiversity thresholds. Prescription burns should only cover a section of each vegetation community at a time so as to retain a diversity of fire frequency and associated age classes within these communities.** **Where thresholds are unknown, a precautionary approach should be applied. Frequent fires of less than 5 years will dramatically simplify understorey vegetation and this must be avoided. Such activity has not been included within this Fire Management Plan.**				
7.0 Fire mitigation considerations for Endangered Ecological conditions include: -Slashing, trittering, tree removal and bulldozing are generally not allowable for known locations of threatened plants. -No part of an EEC is to be subjected to successive fires more frequently than the minimum fire interval: and -At least 50% of the EEC within each Local Government Area [LGA] must exist in a state that has been burnt less frequently than the minimum fire interval. - Old growth patches of each EEC should be maintained in those areas not critical for protection of life and property. -Prescribed fires will be undertaken in accordance with the BMP. -prescription burns should only cover a section of each vegetation community at time. Where thresholds are unknown, a precautionary approach should be applied. frequent fires of less than 5 years will dramatically simplify understorey vegetation and must be avoided.	Refer to Requirements 6.0, 7.1 and 7.2 of the VMP above. No evidence of mechanical clearing of native vegetation for fire mitigation has occurred in the known locations of EECs. This is due to weed maintenance activities and the existing vegetation condition of EECs currently maintain fuel loads and not requiring mechanical clearing	NA	Fire mitigation considerations for Endangered Ecological conditions include:-Slashing, trittering, tree removal and bulldozing are generally not allowable for known locations of threatened plants. -No part of an EEC is to be subjected to successive fires more frequently than the minimum fire interval: and -At least 50% of the EEC within each Local Government Area [LGA] must exist in a state that has been burnt less frequently than the minimum fire interval. - Old growth patches of each EEC should be maintained in those areas not critical for protection of life and property. -Prescribed fires will be undertaken in accordance with the BMP. -prescription burns should only cover a section of each vegetation community at time. Where thresholds are unknown, a precautionary approach should be applied. frequent fires of less than 5 years will dramatically simplify understorey vegetation and must be avoided.	On-site: undertaking site inspection of Wahroonga Estate vegetation. Off-site: reviewing of documents relating to bush fire management, vegetation mapping of the LGA and interviewing persons responsible for bush fire management to confirm that fire mitigation measures for Endangered Ecological conditions are being undertaken in accordance with the requirements of the FMP.	NA
7.1 Mechanical Clearing Slashing, trittering, tree removal and bulldozing are generally not allowable for known locations of EECs.	Refer to Requirements 7.0 of the FMP above and 7.1 and 7.2 of the VMP above. No evidence of mechanical clearing of native vegetation for fire mitigation has occurred in known locations of EECs	NA	Mechanical clearing generally not allowable for known locations of EECs.	On-site: undertaking visual inspection of EECs to confirm that no slashing, trittering, tree removal or bulldozing has occurred in these locations .	NA
7.2 Prescribed Fire (Hazard Reduction Burning) No part of an EEC is to be subjected to successive fires more frequently than the minimum fire interval: and	Refer to Requirements 7.0 of the FMP above and 7.1 and 7.2 of the VMP above. No evidence fire has occurred in known locations of EECs or is proposed at a frequency greater than the minimum fire interval	NA	No part of an EEC is to be subjected to successive fires more frequently than the minimum fire interval.	On-site: undertaking visual inspection of EECs. Off-site: reviewing of documents relating to bush fire management of EECs and interviewing persons responsible for bush fire management to confirm that no part of an EEC has been subjected to successive fires more frequently than the minimum fire interval.	NA
7.2.1 At least 50% of the EEC within each Local Government Area [LGA] must exist in a state that has been burnt less frequently than the minimum fire interval.	Refer to Requirements 7.0 of the FMP above and 7.1 and 7.2 of the VMP above. No evidence fire has occurred in known locations of EECs or is proposed at a frequency greater than the minimum fire interval on site. It is outside of the control of the site to manage this requirement across the LGA	NA	Maintain at least 50% of the EEC within each Local Government Area [LGA] must exist in a state that has been burnt less frequently than the minimum fire interval.	On-site: undertaking visual inspection of EECs to confirm that at least 50% of the EEC within each Local Government Area [LGA] exists in a state that has been burnt less frequently than the minimum fire interval. Off-site: reviewing of documents relating to bush fire and vegetation mapping of EECs within the LGA.	NA
7.2.2 Old growth patches of each EEC should be maintained in those areas not critical for protection of life and property.	Refer to Requirements 7.0 of the FMP above and 7.1 and 7.2 of the VMP above. Mature patches of EEC are being maintained on site.	NA	Maintain old growth patches of each EEC in those areas not critical for protection of life and property.	On-site: undertaking visual inspection of EECs. Off-site: reviewing of documents relating to bush fire and vegetation mapping of EECs to confirm that old growth patches of each EEC are being maintained in those areas not critical for protection of life and property.	NA

7.3 Compliance should be measured against Table 5.1 of the BMP which provides information on the minimum fire frequency and mechanical forms of hazard reduction for the known Endangered Ecological Communities located within the Estate.	Refer to Requirements 7.0 of the FMP above and 7.1 and 7.2 of the VMP above.	NA	Measure compliance against Table 5.1 of the BMP which provides information on the minimum fire frequency and mechanical forms of hazard reduction for the known Endangered Ecological Communities located within the Estate.	Off-site: reviewing of documents pertaining to bush fire management, records of decisions made and interviewing persons responsible for bush fire management to confirm that compliance is being measured against Table 5.1 of the approved BMP in relation to the minimum fire frequency and mechanical forms of hazard reduction for the known EECs located within the Estate.	NA
7.4 Compliance should be measured against Table 5.2 of the BMP which provides information on the minimum fire frequency and mechanical forms of hazard reduction for the known threatened fauna species located within the Estate.	Refer to Requirements 7.0 of the FMP above and 7.1 and 7.2 of the VMP above.	NA	Measure compliance against Table 5.2 of the BMP which provides information on the minimum fire frequency and mechanical forms of hazard reduction for the known threatened fauna species located within the Estate.	Off-site: reviewing of documents pertaining to bush fire management, records of decisions made and interviewing persons responsible for bush fire management to confirm that compliance is being measured against Table 5.2 of the approved BMP in relation to the minimum fire frequency and mechanical forms of hazard reduction for the known threatened fauna species located within the Estate.	NA
7.5 Compliance should be measured against Table 5.3 of the BMP which provides information on the minimum fire interval thresholds to maintain biodiversity in SFMZS & LMZS	Refer to Requirements 7.0 of the FMP above and 7.1 and 7.2 of the VMP above.	NA	Measure compliance against Table 5.3 of the BMP which provides information on the minimum fire interval thresholds to maintain biodiversity in SFMZS & LMZS	Off-site: reviewing of documents pertaining to bush fire management, records of decisions made and interviewing persons responsible for bush fire management to confirm that compliance is being measured against Table 5.3 of the approved BMP in relation to fire interval thresholds to maintain biodiversity in SFMZS & LMZS.	NA
7.6 In order to maintain biodiversity, appropriate fire regimes for vulnerable species need to be implemented within their biodiversity thresholds.	Refer to Requirements 7.0 of the FMP above and 7.1 and 7.2 of the VMP above.	NA	Implement appropriate fire regimes for vulnerable species within their biodiversity thresholds.	Off-site: reviewing of documents pertaining to bush fire management, records of decisions made and interviewing persons responsible for bush fire management to confirm that appropriate fire regimes for vulnerable species are being implemented within their biodiversity thresholds in order to maintain biodiversity.	NA
7.7 Prescription burns should only cover a section of each vegetation community at a time so as to retain a diversity of fire frequency and associated age classes within these communities.	Refer to Requirements 7.0 of the FMP above and 7.1 and 7.2 of the VMP above.	NA	Prescription burns should only cover a section of each vegetation community at a time so as to retain a diversity of fire frequency and associated age classes within these communities.	On-site: undertaking visual inspection of EECs. Off-site: reviewing of documents pertaining to bush fire management, records of decisions made and interviewing persons responsible for bush fire management to confirm that prescription burns only cover a section of each vegetation community at a time and retain a diversity of fire frequency and associated age classes within these communities.	NA
7.8 Where thresholds are unknown, a precautionary approach should be applied.	Refer to Requirements 7.0 of the FMP above and 7.1 and 7.2 of the VMP above.	NA	Apply precautionary approach where thresholds are unknown	On-site: undertaking visual inspection of EECs. Off-site: reviewing of documents pertaining to bush fire management, records of decisions made and interviewing persons responsible for bush fire management to confirm that, where thresholds are unknown, a precautionary approach has been applied.	NA
7.9 Frequent fires of less than 5 years will dramatically simplify understorey vegetation and this must be avoided.	Refer to Requirements 7.0 of the FMP above and 7.1 and 7.2 of the VMP above.	NA	Avoid frequent fires of less than 5 years will dramatically simplify understorey vegetation	On-site: undertaking visual inspection of EECs. Off-site: reviewing of documents pertaining to bush fire management, records of decisions made and interviewing persons responsible for bush fire management to confirm that fires of less than 5 years have not been undertaken in order to avoid dramatically simplifying the understorey vegetation.	NA

Fire Management Plan - Condition 8	**5.4 Fire Mitigation Consideration:** **5.4.8 Areas Infested by Exotic Plants and Weeds** **Weed management should occur primarily through the introduction of cutting and poisoning of Lantana, Privet and other weed species within the riparian corridor to Coups Creek and Lane Cove River [refer to Cumberland Ecology Report].** **Some manual clearing [whipper snipping] may also be required in areas not accessible to machinery.** **Fire should be excluded from watercourses and hence, prescription burns will be of little benefit in reducing weed infestation within the riparian corridors. This should be undertaken by hand clearance and poisoning.** **Following a prescription burn, or wildfire, a weeding program should be considered as a mandatory follow-up to limit the re-infestation of weed species.**				
8.0 Fire mitigation in areas infested by exotic plants and weeds - Fire should be excluded from watercourses and hence, prescription burns will be of little benefit in reducing weed infestation within the riparian corridors. This should be undertaken by hand clearance and poisoning. Fire should be excluded from watercourses and hence, prescription burns will be of little benefit in reducing weed infestation within the riparian corridors. This should be undertaken by hand clearance and poisoning.	Refer to Requirements 3.0 , 3.1 of VMP above. Weed management has involved significant cutting and poisoning of Lantana, Privet and other weed species within the riparian corridor to Coups Creek and Lane Cove River	NA	Fire mitigation in areas infested by exotic plants and weeds - Fire should be excluded from watercourses and hence, prescription burns will be of little benefit in reducing weed infestation within the riparian corridors. This should be undertaken by hand clearance and poisoning. Fire should be excluded from watercourses and hence, prescription burns will be of little benefit in reducing weed infestation within the riparian corridors. This should be undertaken by hand clearance and poisoning.	On-site: undertaking visual inspection of fire mitigation areas and completing a 20 x 20m BioBanking quadrat to determine vegetation compositions. Off-site: reviewing of documents pertaining to weed and fire management and monitoring to confirm that management of areas infested by exotic plants & weeds is undertaken in accordance with the FMP.	Y
8.1 Weed management should occur primarily through the introduction of cutting and poisoning of Lantana, Privet and other weed species within the riparian corridor to Coups Creek and Lane Cove River [refer to Cumberland Ecology Report].	Refer to Requirements 3.0 , 3.1 and 8.0 of VMP above. Weed management, specifically of lantana and Privet through cut and poisoning has been undertaken as a priority within the riparian corridors of Coups creek and Lane cove river	NA	Carry out weed management primarily through the introduction of cutting and poisoning of Lantana, Privet and other weed species within the riparian corridor to Coups Creek and Lane Cove River [refer to Cumberland Ecology Report].	On-site: undertaking visual inspection of fire mitigation areas and completing a 20 x 20m BioBanking quadrat to determine vegetation compositions. Off-site: review of documents relating to weed management programs to confirm that weed management has occurred primarily through the introduction of cutting and poisoning of Lantana, Privet and other weed species within the riparian corridor to Coups Creek and Lane Cove River.	Y
8.2 Some manual clearing [whipper snipping] may also be required in areas not accessible to machinery.	Refer to Requirements 3.0 , 3.1 of VMP above and 8.0 above	NA	Carry out some manual clearing [whipper snipping] where required in areas not accessible to machinery.	On-site: undertaking visual inspection of fire mitigation areas and completing a 20 x 20m BioBanking quadrat to determine vegetation compositions. Off-site: review of documents relating to weed management programs to confirm that, if applicable, manual clearing [whipper snipping] was undertaken in areas not accessible to machinery.	Y
8.3 Fire should be excluded from watercourses and hence, prescription burns will be of little benefit in reducing weed infestation within the riparian corridors. This should be undertaken by hand clearance and poisoning.	Refer to Requirements 3.0 , 3.1 and 8.0. No burns have been undertaken and so fire has been excluded from watercourses. Weed management within these watercourses, specifically of lantana and Privet through hand clearance and poisoning has been undertaken.	NA	Exclude fire from watercourses and hence, prescription burns will be of little benefit in reducing weed infestation within the riparian corridors. This should be undertaken by hand clearance and poisoning.	On-site: undertaking visual inspection of watercourses and completing a 20 x 20m BioBanking quadrat to determine vegetation compositions. Off-site: review of documents relating to weeding programs to confirm that fire has been excluded from watercourses and, weed infestations within the riparian corridors, are undertaken by hand clearance and poisoning.	Y
8.4 Following a prescription burn, or wildfire, a weeding program should be considered as a mandatory follow-up to limit the re-infestation of weed species.	Refer to Requirements 3.0 , 3.1 of VMP above. At the time of the audit no burn has occurred on site	NA	Consider producing a weeding program following a prescription burn as a mandatory follow-up to limit the re-infestation of weed species.	Off-site: reviewing of documents relating to weeding programs to confirm that, following a prescription burn, or wildfire, a weeding program has been undertaken as a mandatory follow-up to limit the re-infestation of weed species, as applicable.	NA

Fire Management Plan - Condition 9

4.4 Fire Mitigation Consideration:

5.4.9 Standards for the Protection of Riparian Buffers

Mechanical work, Asset Protection Zones and hazard reduction burning must be excluded from all vegetation adjacent to a water body [i.e. the riparian buffer zone] within the distances as prescribed in Table5.5 and 5.6 in the BMP. The distance [metres] is measured from the highest bank or shore on either side of the water body [i.e. creek].

Table 5.5 STANDARDS FOR THE PROTECTION OF RIPARIAN BUFFERS FOR ASSET PROTECTION ZONES

	Water Body			
Management Method	1st Order and unmapped steams	2nd Order streams; wetlands, lakes & Lagoons – greater than or equal to 0.1Ha but less than 0.5Ha	3rd Order Streams; Wetlands, Lakes & Lagoons greater than or equal to 0.5Ha but less than 2Ha	4th Order Streams & greater Estuaries; Wetlands, Lakes & Lagoons greater than or equal to 2Ha
Use of hand tools & hand held machinery	5 Metres	5 metres	10 Metres	5 metres
Use of slashing machinery	5 Metres	10 metres	15 metres	10 Metres
Use of Graders, ploughs & dozers	10 Metres	15 metres	20 metres	15 Metres
Removal of Trees	5 Metres	20 metres	20 metres	20 Metres

Table 5.6 STANDARDS FOR THE PROTECTION OF RIPARIAN BUFFERS FOR STRATEGIC FIRE ADVANTAGE ZONES [SFAZ].

	Water Body			
Management Method	1st Order and unmapped steams	2nd Order streams; wetlands, lakes & Lagoons – greater than or equal to 0.1Ha but less than 0.5Ha	3rd Order Streams; Wetlands, Lakes & Lagoons greater than or equal to 0.5Ha but less than 2Ha	4th Order Streams & greater Estuaries; Wetlands, Lakes & Lagoons greater than or equal to 2Ha
Use of hand tools & hand held machinery	5 Metres	5 metres	10 metres	15 metres
Use of slashing machinery	5 Metres	10 metres	15 metres	20 Metres
Use of Graders, ploughs & dozers	10 Metres	20 metres	30 metres	40 Metres

Table 5.7 STANDARDS FOR THE PROTECTION OF RIPARIAN BUFFERS FOR HAZARD REDUCTION BURNING

	Riparian buffer zone width			
Type of Water Body	1st Order and unmapped steams	2nd Order streams; wetlands, lakes & Lagoons – greater than or equal to 0.1Ha but less than 0.5Ha	3rd Order Streams; Wetlands, Lakes & Lagoons greater than or equal to 0.5Ha but less than 2Ha	4th Order Streams & greater Estuaries; Wetlands, Lakes & Lagoons greater than or equal to 2Ha
Width	5 metres	5 metres	10 Metres	20 metres

No lighting of a prescribed hazard reduction burn is permitted within the riparian buffer zone distance specified in Table 8 with the distance measured from the highest bank or shore on either side of the water body.
For prescribed burns being conducted near water bodies, all reasonable steps [excluding clearing vegetation and the use of foams & retardants] should be taken to ensure that the fire does not burn within the riparian buffer zone. Fire shall be lit under conditions so that if they do burn within the riparian zone they are patchy and low intensity.

9.0 Mechanical work, Asset Protection Zones and hazard reduction burning must be excluded from all vegetation adjacent to a water body [i.e. the riparian buffer zone] within the distances as prescribed in Table 6 in the BMP. The distance [metres] is measured from the highest bank or shore on either side of the water body [i.e. creek]. For prescribed burns being conducted near water bodies, all reasonable steps should be taken to ensure that the fire does not burn within the riparian buffer zone. Fire shall be lit under conditions so that if they do burn within the riparian zone they are patchy and low intensity.	Refer to Requirements 3.0 , 3.1 of VMP above and 1.0 and 8.0 of FMP above. No evidence of mechanical work, APZ's and hazard reduction burns within Riparian buffer zones were found in accordance with Table 6 of the BMP.	NA	Mechanical work, Asset Protection Zones and hazard reduction burning must be excluded from all vegetation adjacent to a water body [i.e. the riparian buffer zone] within the distances as prescribed in Table 6 in the BMP. The distance [metres] is measured from the highest bank or shore on either side of the water body [i.e. creek]. For prescribed burns being conducted near water bodies, all reasonable steps should be taken to ensure that the fire does not burn within the riparian buffer zone. Fire shall be lit under conditions so that if they do burn within the riparian zone they are patchy and low intensity.	On-site: undertaking site inspection of mechanical work, asset protection zones and hazard reduction burning areas near water bodies. Off-site: reviewing of documents pertaining to bush fire management, records of decisions made and interviewing persons responsible for bush fire management to confirm that actions in relation to Standards for the Protection of Riparian Buffers, as specified in the FMP, are being undertaken as applicable.	Y
9.1 Mechanical work, Asset Protection Zones and hazard reduction burning must be excluded from all vegetation adjacent to a water body [i.e. the riparian buffer zone] within the distances as prescribed in Table 6 in the BMP. The distance [metres] is measured from the highest bank or shore on either side of the water body [i.e. creek].	Refer to Requirements 3.0 , 3.1 of VMP above and 1.0 and 8.0 of FMP above. No evidence of mechanical work, APZ's and hazard reduction burns within Riparian buffer zones were found in accordance with Table 6 of the BMP.	NA	Exclude mechanical work, Asset Protection Zones and hazard reduction burning from all vegetation adjacent to a water body [i.e. the riparian buffer zone] within the distances as prescribed in Table 6 in the BMP. The distance [metres] is measured from the highest bank or shore on either side of the water body [i.e. creek].	On-site: undertaking site inspection of mechanical work, asset protection zones and hazard reduction burning areas near water bodies.	Y
9.2 Compliance should be measured against Table 5.5 of the BMP which provides standards for the protection of riparian buffers for Asset Protection Zones.	Refer to Requirements 3.0 , 3.1 of VMP above and 1.0 and 8.0 of FMP above. No evidence of mechanical work, APZ's and hazard reduction burns within Riparian buffer zones were found in accordance with Table 6 of the BMP.	NA	Measure compliance against Table 5.5 of the BMP which provides standards for the protection of riparian buffers for Asset Protection Zones.	On-site: undertaking site inspection of mechanical work, asset protection zones and hazard reduction burning areas near water bodies. Off-site: reviewing of documents pertaining to bush fire management, records of decisions made and interviewing persons responsible for bush fire management to confirm that compliance is being measured against Table 5.5 of the approved BMP to protect riparian buffers for Asset Protection Zones.	Y
9.3 Compliance should be measured against Table 5.6 of the BMP which provides standards for the protection of riparian buffers for Strategic Fire Advantage Zones (SFAZ).	Refer to Requirements 3.0 , 3.1 of VMP above and 1.0 and 8.0 of FMP above. No evidence of mechanical work, APZ's and hazard reduction burns within Riparian buffer zones were found in accordance with Table 6 of the BMP.	NA	Measure compliance against Table 5.6 of the BMP which provides standards for the protection of riparian buffers for Strategic Fire Advantage Zones (SFAZ).	On-site: undertaking site inspection of mechanical work, asset protection zones and hazard reduction burning areas near water bodies. Off-site: reviewing of documents pertaining to bush fire management, records of decisions made and interviewing persons responsible for bush fire management to confirm that compliance is being measured against Table 5.6 of the approved BMP to protect riparian buffers for Strategic Fire Advantage Zones (SFAZ).	Y
9.4 Compliance should be measured against Table 5.7 of the BMP which provides standards for the protection of riparian buffers for hazard reduction burning.	Refer to Requirements 3.0 , 3.1 of VMP above and 1.0 and 8.0 of FMP above Mechanical work, APZ's and hazard reduction burns have been excluded from Riparian buffer zones in accordance with Table 6 of the BMP	NA	Measure compliance against Table 5.7 of the BMP which provides standards for the protection of riparian buffers for hazard reduction burning.	On-site: undertaking site inspection of mechanical work, asset protection zones and hazard reduction burning areas near water bodies. Off-site: reviewing of documents pertaining to bush fire management, records of decisions made and interviewing persons responsible for bush fire management to confirm that compliance is being measured against Table 5.7 of the approved BMP to protect riparian buffers for hazard reduction burning.	Y

9.5 No lighting of a prescribed hazard reduction burn is permitted within the riparian buffer zone distance specified in Table 8 of the BMP with the distance measured from the highest bank or shore on either side of the water body.	Refer to 1.0 and 8.0 of FMP No Burns have occurred or are proposed within riparian buffer. No prescribed hazard reduction burns have been undertaken to date.	NA	Lighting of a prescribed hazard reduction burn is not permitted within the riparian buffer zone distance specified in Table 8 of the BMP with the distance measured from the highest bank or shore on either side of the water body.	On-site: undertaking site inspection of mechanical work, asset protection zones and hazard reduction burning areas near water bodies. Off-site: reviewing of documents pertaining to bush fire management, records of decisions made and interviewing persons responsible for bush fire management to confirm that no lighting of prescribed hazard reduction burns have been permitted within the riparian buffer zone distance as specified in Table 8 of the approved BMP (with the distance measured from the highest bank or shore on either side of the water body).	NA
9.6 For prescribed burns being conducted near water bodies, all reasonable steps [excluding clearing vegetation and the use of foams & retardants] should be taken to ensure that the fire does not burn within the riparian buffer zone.	Refer to 1.0 and 8.0 of FMP above. No Burns have occurred or are proposed within riparian buffer. No prescribed hazard reduction burns have been undertaken to date.	NA	Undertake all reasonable steps [excluding clearing vegetation and the use of foams & retardants] for prescribed burns being conducted near water bodies to ensure that the fire does not burn within the riparian buffer zone.	On-site: undertaking site inspection of mechanical work, asset protection zones and hazard reduction burning areas near water bodies. Off-site: reviewing of documents pertaining to bush fire management, records of decisions made and interviewing persons responsible for bush fire management to confirm that, for prescribed burns being conducted near water bodies, all reasonable steps [excluding clearing vegetation and the use of foams & retardants] are taken to ensure that the fire does not burn within the riparian buffer zone.	NA
9.7 Fire shall be lit under conditions so that if they do burn within the riparian zone they are patchy and low intensity.	Refer to 1.0 and 8.0 of FMP above. No Burns have occurred or are proposed within riparian buffer. No prescribed hazard reduction burns have been undertaken to date.	NA	Lit fires under conditions so that if they do burn within the riparian zone they are patchy and low intensity.	On-site: undertaking site inspection of mechanical work, asset protection zones and hazard reduction burning areas near water bodies. Off-site: reviewing of documents pertaining to bush fire management, records of decisions made and interviewing persons responsible for bush fire management to confirm that any fires lit are under conditions so that, if they do burn within the riparian zone, they are patchy and low intensity.	NA

Fire Management Plan - Condition 10	**5.4 Fire Mitigation Consideration:** **5.4.10 Smoke Management** **Smoke has the potential to affect local residents, occupants of the Sydney Adventist Hospital and Retirement Village and the public's air quality as well as visibility for road traffic. Hazard reduction burning should be carried out during times of low fuel moisture content to minimize smoke emissions.** **Notification should be given seven [7] days in advance of prescription burns, in accordance with the notification prescriptions of the Bushfire Environmental Assessment Code.** **Where smoke has the potential to detrimentally affect traffic at least 2 weeks prior notice shall be given to police and relevant road authority [RTA/Local Council] to determine when traffic conditions are likely to be most suitable to carry out the burn and any road safety and traffic management requirements including public communications, signage, constraints on ingress and egress from the road carriageway.** **Compliance with the requirements so prescribed are mandatory and notification shall be given to the relevant authority at least 24 hours before the proposed burn if the conditions are such that the smoke will affect a nearby road.**				
10.0 Hazard reduction burning should be carried out during times of low fuel moisture content to minimize smoke emissions. Notification should be given seven [7] days in advance of prescription burns, in accordance with the notification prescriptions of the Bushfire Environmental Assessment Code. Where smoke has the potential to detrimentally affect traffic at least 2 weeks prior notice shall be given to police and relevant road authority [RTA/Local Council]. Compliance with the requirements so prescribed are mandatory and notification shall be given to the relevant authority at least 24 hours before the proposed burn if the conditions are such that the smoke will affect a nearby road.	Hazard reduction burning has not yet occurred on site as the local fire authority are yet to identify a appropriately safe period to burn. Refer to section 7.1 and 7.2 of VMP above.	NA	Hazard reduction burning should be carried out during times of low fuel moisture content to minimize smoke emissions. Notification should be given seven [7] days in advance of prescription burns, in accordance with the notification prescriptions of the Bushfire Environmental Assessment Code. Where smoke has the potential to detrimentally affect traffic at least 2 weeks prior notice shall be given to police and relevant road authority [RTA/Local Council]. Compliance with the requirements so prescribed are mandatory and notification shall be given to the relevant authority at least 24 hours before the proposed burn if the conditions are such that the smoke will affect a nearby road.	On-site: undertaking site inspection of hazard reduction burning areas. Off-site: reviewing of documents pertaining to bush fire management, records of decisions made and interviewing persons responsible for bush fire management to confirm that smoke management during hazard reduction and prescribed burns is undertaken in accordance with the FMP.	NA
10.1 Hazard reduction burning should be carried out during times of low fuel moisture content to minimize smoke emissions.	Hazard reduction burning has not yet occurred on site as the local fire authority are yet to identify a appropriately safe period to burn. Refer to section 7.1 and 7.2 of VMP above.	NA	Carry out hazard reduction burning during times of low fuel moisture content to minimize smoke emissions.	Off-site: reviewing of documents pertaining to bush fire management, records of decisions made and interviewing persons responsible for bush fire management to confirm that hazard reduction burning has been carried out during times of low fuel moisture content to minimize smoke emissions.	NA
10.2 Notification should be given seven [7] days in advance of prescription burns, in accordance with the notification prescriptions of the Bushfire Environmental Assessment Code.	Hazard reduction burning has not yet occurred on site as the local fire authority are yet to identify a appropriately safe period to burn. Refer to section 7.1 and 7.2 of VMP above.	NA	Notify in accordance with the notification prescriptions of the Bushfire Environmental Assessment Code seven [7] days in advance of prescription burns.	Off-site: reviewing of documents pertaining to notifying prescription burning in accordance with the Bushfire Environmental Assessment Code to confirm that notification has been given seven [7] days in advance of prescription burns, if applicable, in accordance with the notification prescriptions of the Bushfire Environmental Assessment Code.	NA
10.3 Where smoke has the potential to detrimentally affect traffic at least 2 weeks prior notice shall be given to police and relevant road authority [RTA/Local Council] to determine when traffic conditions are likely to be most suitable to carry out the burn and any road safety and traffic management requirements including public communications, signage, constraints on ingress and egress from the road carriageway.	Hazard reduction burning has not yet occurred on site as the local fire authority are yet to identify a appropriately safe period to burn. Refer to section 7.1 and 7.2 of VMP above.	NA	Notify police and relevant road authority [RTA/Local Council] where smoke has the potential to detrimentally affect traffic at least 2 weeks to determine when traffic conditions are likely to be most suitable to carry out the burn and any road safety and traffic management requirements including public communications, signage, constraints on ingress and egress from the road carriageway.	Off-site: reviewing of documents pertaining to notifying prescription burns to police and relevant road authorities at least 2 weeks prior to the burn etc. where smoke has the potential to detrimentally affect traffic.	NA

10.4 Compliance with the requirements so prescribed are mandatory and notification shall be given to the relevant authority at least 24 hours before the proposed burn if the conditions are such that the smoke will affect a nearby road.	Hazard reduction burning has not yet occurred on site as the local fire authority are yet to identify a appropriately safe period to burn. Refer to section 7.1 and 7.2 of VMP above.	NA	Notify relevant authority at least 24 hours before the proposed burn if the conditions are such that the smoke will affect a nearby road.	Off-site: reviewing of documents pertaining to notifying prescription burns to relevant authorities to confirm that notification has been given at least 24 hours before any proposed burn if the conditions are such that the smoke will affect a nearby road.	NA
Fire Management Plan - Condition 11	**5.4 Fire Mitigation Consideration:** **5.4.11 Fire Permits** **A person proposing to undertake a hazard reduction burn is required to determine under Section 87 or Section 88 of the Rural Fires Act 1997 and if a Fire Permit is required this must be obtained prior to conducting the burn.**				
11.0 Requirement for a fire permit must be determined under Section 87 or Section 88 of the Rural Fires Act 1997 and if a Fire Permit is required this must be obtained prior to conducting the burn.	Refer to Requirements 6.0, 7.1 and 7.2. of VMP above. ADA have consulted with the appropriate Fire authorities on what is required to arrange a hazard reduction burn. NSW Fire Services have subsequently issued a Hazard reduction certificate in accordance with 100G of the Rural Fires Act 1997.	NA	Requirement for a fire permit must be determined under Section 87 or Section 88 of the Rural Fires Act 1997 and if a Fire Permit is required this must be obtained prior to conducting the burn.	Off-site: reviewing of documents pertaining to fire permits to confirm that any hazard reduction burns are undertaken in accordance with the FMP.	Y
11.1 Requirement for a fire permit must be determined under Section 87 or Section 88 of the Rural Fires Act 1997.	Refer to Requirements 6.0, 7.1 and 7.2. of VMP above. ADA have consulted with the appropriate Fire authorities on what is required to arrange a hazard reduction burn. NSW Fire Services have subsequently issued a Hazard reduction certificate in accordance with 100G of the Rural Fires Act 1997.	NA	Determine whether a fire permit must be determined under Section 87 or Section 88 of the Rural Fires Act 1997.	Off-site: reviewing of documents pertaining to fire permits to confirm that Fire Permits are determined under Section 87 or Section 88 of the Rural Fires Act 1997 .	Y
11.2 If a Fire Permit is required this must be obtained prior to conducting the burn.	Refer to Requirements 6.0, 7.1 and 7.2. of VMP above. ADA have consulted with the appropriate Fire authorities on what is required to arrange a hazard reduction burn. NSW Fire Services have subsequently issued a Hazard reduction certificate in accordance with 100G of the Rural Fires Act 1997.	NA	Obtain a Fire Permit prior to conducting the burn.	Off-site: reviewing of documents pertaining to fire permits to confirm that if a hazard reduction burn has been required, a Fire Permit was obtained prior to conducting the burn.	Y
Fire Management Plan - Condition 12	**5.4 Fire Mitigation Consideration:** **5.4.12 Notification of Fire Fighting Authorities** **The person acting on a certificate must give at least 24 hours notice prior to lighting the hazard reduction burn as follows:** **● In a NSW Rural Fire District, to the Fire Control Officer;** **● In a NSW Fire Brigade District, to the officer in charge of the fire station nearest the land on which the burn is to be conducted.**				
12.0 The person acting on a certificate must give at least 24 hours notice prior to lighting the hazard reduction burn as follows: · In a NSW Rural Fire District, to the Fire Control Officer; · In a NSW Fire Brigade District, to the officer in charge of the fire station nearest the land on which the burn is to be conducted.	NSW Fire and Rescue will be acting on any Prescribed burn certificate and BMP 2014 identifies communication with the NSW Fire and rescue in charge of the nearest fire station indicating they are monitoring conditions in preparatory planning for any prescribed burn. Hazard reduction burning has not yet occurred on site as the local fire authority are yet to identify a appropriately safe period to burn.	NA	The person acting on a certificate must give at least 24 hours notice prior to lighting the hazard reduction burn as follows:· In a NSW Rural Fire District, to the Fire Control Officer; · In a NSW Fire Brigade District, to the officer in charge of the fire station nearest the land on which the burn is to be conducted.	Off-site: reviewing of documents pertaining to notification given to relevant NSW Fire Services.	NA
12.1 The person acting on a certificate must give at least 24 hours notice prior to lighting the hazard reduction burn as follows:	Refer to Requirements 7.1 and 7.2 of VMP. NSW Fire and Rescue will be acting on any Prescribed burn certificate and BMP 2014 identifies communication with the NSW Fire and rescue in charge of the nearest fire station indicating they are monitoring conditions in preparatory planning for any prescribed burn.	NA	The person acting on a certificate must give at least 24 hours notice prior to lighting the hazard reduction burn as follows:		NA
12.1.1 In a NSW Rural Fire District, to the Fire Control Officer;	Refer to Requirements 7.1 and 7.2 of VMP. NSW Fire and Rescue will be acting on any Prescribed burn certificate and BMP 2014 identifies communication with the NSW Fire and rescue in charge of the nearest fire station indicating they are monitoring conditions in preparatory planning for any prescribed burn.	NA	Give 24 hour notice of hazard reduction burn to NSW Rural Fire District, to the Fire Control Officer.	Off-site: reviewing of documents pertaining to notification given to relevant NSW Fire Services.	NA
12.1.2 In a NSW Fire Brigade District, to the officer in charge of the fire station nearest the land on which the burn is to be conducted.	Refer to Requirements 7.1 and 7.2 of VMP. NSW Fire and Rescue will be acting on any Prescribed burn certificate and BMP 2014 identifies communication with the NSW Fire and rescue in charge of the nearest fire station indicating they are monitoring conditions in preparatory planning for any prescribed burn.	NA	Give 24 hour notice of hazard reduction burn to NSW Fire Brigade District, to the officer in charge of the fire station nearest the land on which the burn is to be conducted.	Off-site: reviewing of documents pertaining to notification given to relevant NSW Fire Services.	Y

Fire Management Plan - Condition 13	**5.4 Fire Mitigation Consideration:** **5.4.13 No Burn Days** **Hazard reduction burning shall not be undertaken during periods when a No Burn Notice has been or is likely to be issued by the DEC unless the proposed activity qualifies for an exemption from the No Burn Notice.**				
13.1 Hazard reduction burning shall not be undertaken during periods when a No Burn Notice has been or is likely to be issued by the DEC unless the proposed activity qualifies for an exemption from the No Burn Notice.	Refer to Requirements 7.1 and 7.2 of VMP. NSW Fire and Rescue will be acting on any Prescribed burn certificate and BMP 2014 identifies communication with the NSW Fire and rescue in charge of the nearest fire station indicating they are monitoring conditions in preparatory planning for any prescribed burn.	NA	Hazard reduction burning shall not be undertaken during periods when a No Burn Notice has been or is likely to be issued by the DEC unless the proposed activity qualifies for an exemption from the No Burn Notice.	Off-site: reviewing of documents pertaining to bush fire management, records of decisions made i.e. period of a No Burn Notice.	NA
Fire Management Plan - Condition 14	**5.4 Fire Mitigation Consideration:** **5.4.14 Fire Trails, Tracks and Control Lines** **The implementation of the bushfire management programs recommended in this Fire Management Plan cannot be achieved without the establishment and maintenance of trails and control lines which contain the prescribed burns within the nominated Fuel Management Zones.** **The Estate currently contains a number of existing tracks most being well maintained. Each track has been identified by name on the Tracks, Trails and Control Line Plan in Appendix E with upgrade and future maintenance works identified in Section 5.6.5. Control Lines are also nominated in locations as shown on this plan and form temporary, hand cleared lines to the edges of SFMZs and LMZs where existing tracks and trails do not exist. These lines will be implemented prior to the programmed hazard reduction burn and known as Hand Lines [HL].**				
14.0 The proponent should establish and maintain trails and control lines which contain the prescribed burns within the nominated Fuel Management Zones. Each track has been identified by name on the Tracks, Trails and Control Line Plan in Appendix E with upgrade and future maintenance works identified in Section 5.6.5.	Refer to Requirements 7.1 and 7.2 of VMP. NSW Fire and Rescue will be acting on any Prescribed burn certificate and BMP 2014 identifies communication with the NSW Fire and rescue in charge of the nearest fire station indicating they are monitoring conditions in preparatory planning for any prescribed burn.	NA	The proponent should establish and maintain trails and control lines which contain the prescribed burns within the nominated Fuel Management Zones. Each track has been identified by name on the Tracks, Trails and Control Line Plan in Appendix E with upgrade and future maintenance works identified in Section 5.6.5.	On-site: undertaking site inspection of trails and control lines within nominated Fuel Management Zone to confirm that actions are undertaken in accordance with the FMP. Off-site: reviewing documents related to Tracks, Trails and Control Line Plan with upgrade and future maintenance works to confirm that actions are undertaken in accordance with the FMP.	NA
14.1 The proponent should establish and maintain trails and control lines which contain the prescribed burns within the nominated Fuel Management Zones.	Refer to Requirements 7.1 and 7.2 of VMP above. No prescribed burns have been established and as such no hand lines are specifically required. BMP 2012 notes Hand lines for Coupes Creek below SFMZ 14 and 15 have been defined, however "The above hand lines will not be cleared to bare ground for environmental reasons until needed for fire control. Further hand lines may not be necessary due to the close proximity of existing walking tracks that will serve the same purpose" BMP 2013 identifies Hand lines maintained in areas separating SFMZ 6 & 7 from SFMZ 3. This was not urgent due to the clear understorey across SFMZ 6 & SFMZ 7 which suffered high disturbance and clearing due to Ochna removal which deemed it deleterious to clear further for erosion considerations. The aforementioned clear understorey was observed during the audit.	NA	Establish and maintain trails and control lines which contain the prescribed burns within the nominated Fuel Management Zones.	On-site: undertaking site inspection of trails and control lines within nominated Fuel Management Zone to confirm that the proponent has established and maintained trails and control lines which contain the prescribed burns within the nominated Fuel Management Zones. Off-site: reviewing documents related to Tracks, Trails and Control Line Plan with upgrade and future maintenance works to confirm that actions have been undertaken in accordance with the FMP.	NA
14.2 Each track has been identified by name on the Tracks, Trails and Control Line Plan in Appendix E with upgrade and future maintenance works identified in Section 5.6.5 of the BMP.	Refer to Requirements 7.1 and 7.2. of VMP above. Each track has been identified by name and is monitored annually for maintenance works in accordance with the BMP.	NA	Identify the name on the Tracks, Trails and Control Line Plan in Appendix E with upgrade and future maintenance works identified in Section 5.6.5 of the BMP.	On-site: undertaking site inspection of trails and control lines within nominated Fuel Management Zone to confirm that trails and control lines are being maintained in accordance with the maintenance works identified in Section 5.6.5 of the approved BMP. Off-site: review documents related to the Tracks, Trails and Control Line Plan (Appendix E) to confirm that upgrade and maintenance works are being undertaken in accordance with works identified in Section 5.6.5 of the approved BMP.	Y
14.3 Control Lines are also nominated in locations as shown on this plan and form temporary, hand cleared lines to the edges of SFMZs and LMZs where existing tracks and trails do not exist. These lines will be implemented prior to the programmed hazard reduction burn and known as Hand Lines [HL].	Refer to 14.1	NA	Nominate Control Lines in locations as shown on this plan and form temporary, hand cleared lines to the edges of SFMZs and LMZs where existing tracks and trails do not exist. These lines will be implemented prior to the programmed hazard reduction burn and known as Hand Lines [HL].	Off-site: review documents related to Control Lines to confirm that nominated, temporary, hand cleared control lines to the edges of SFMZs and LMZs, as shown in the approved BMP, were implemented prior to any programmed hazard reduction burns.	Y

Fire Management Plan - Condition 15	**5.5 Fuel Management Zone:** **5.5.2 Fuel Management Zone** **i. Asset Protection Zones [APZ]** **The management criterion that is required to achieve an Inner Protection Area [Asset Protection Zone sub-formation closest to the asset] includes:** **• Maximum fine fuel loading of 3 tonnes/hectare;** **• Minimum fine ground fuel;** **• A shrub component occupying only 20% of the total area;** **• Discontinuous vegetation and tree canopy cover;** **• No tree or shrub vegetation is to overhang or come in contact within the building/asset.** **ii. Strategic Fire Management Zones [SFMZ]** **These are bushfire hazard reduced areas where fuels are managed to slow a bushfire and to reduce its intensity. SFMZs are normally located in strategic locations, such as adjacent to fire trails in high ignition areas or fire paths and are intended to:** **• Provide fuel reduced areas which enable the protection of assets by fire-fighters when asset protection zones are not in place;** **• Compliment asset protection zones where these do not provide adequate protection;** **• Provide strategically located fuel reduced areas to reduce the potential for large scale wildfires to develop;** **• Provide areas where fire can be more easily suppressed; or** **• Provide strategically located fuel reduced areas to reduce vulnerability of assets which are susceptible to fire [including flora & fauna assets].** **iii. Heritage Management Zone [HMZ]** **These are zones which are not fuel managed and are retained to enhance the conservation of biodiversity – e.g. riparian corridors and areas of high conservation value. The zone objective is to manage bushfire to meet the conservation needs of threatened species of flora and fauna, the maintenance of biodiversity in vegetation community composition and structure, and protect the area from the application of inappropriate fire regimes.**				
15.0 The management criterion that is required to achieve an Inner Protection Area includes: · Maximum fine fuel loading of 3 tonnes/hectare; · Minimum fine ground fuel; · A shrub component occupying only 20% of the total area; · Discontinuous vegetation and tree canopy cover; · No tree or shrub vegetation is to overhang or come in contact within the building/asset.	Inner Protection Areas inspected during the audit have been established in accordance with management criterion set out in 5.5.2 of BMP. It was established that the inner protection zone adheres to the following criteria: Maximum fine load<3t/ha; Minimum fine ground fuel; shrub component <20% of the total area, discontinuous tree canopy cover and no tree or shrub vegetation overhanging or in contact within the building/asset.	NA	The management criterion that is required to achieve an Inner Protection Area includes:· Maximum fine fuel loading of 3 tonnes/hectare; · Minimum fine ground fuel; · A shrub component occupying only 20% of the total area; · Discontinuous vegetation and tree canopy cover; · No tree or shrub vegetation is to overhang or come in contact within the building/asset.	On-site: undertaking site inspection of Inner Protection Area to determine vegetation structure and compliance with management criterion. Undertaking 20 X 20m BioBanking Quadrate to determine shrub cover %. Off-site: reviewing of documents relating to bush fire management and interviewing person responsible to confirm compliance with management criterion.	Y
15.1 Fuels are intensively managed in Asset Protection Zones to provide a buffer of very low fuel levels between the asset and a bushfire hazard.	Refer to Requirements 15.0	NA	Manage fuels in Asset Protection Zones to provide a buffer of very low fuel levels between the asset and a bushfire hazard.		Y
15.2 The Asset Protection Zone contains two sub-sections – the Inner Protection Area and Outer Protection Area. The Inner Protection Area is located adjacent to the asset. In order to achieve an Inner Protection Area [Asset Protection Zone sub-formation closest to the asset] management criterion includes:	Refer to Requirements 15.0	NA	The Asset Protection Zone contains two sub-sections – the Inner Protection Area and Outer Protection Area. The Inner Protection Area is located adjacent to the asset. In order to achieve an Inner Protection Area [Asset Protection Zone sub-formation closest to the asset] management criterion includes:		Y
15.2.1 Maximum fine fuel loading of 3 tonnes/hectare;	Refer to Requirements 15.0	NA	Ensure maximum fine fuel loading of 3 tonnes/hectare.	On-site: undertaking site inspection of Asset Protection Zones to confirm that a maximum fine fuel loading of 3 tonnes/hectare is being complied with. Off-site: reviewing of documentation relating to fuel loads to confirm that a maximum fine fuel loading of 3 tonnes/hectare is being complied with.	Y

15.2.2 Minimum fine ground fuel;	Refer to Requirements 15.0	NA	Ensure minimum fine ground fuel.	On-site: undertaking site inspection of Asset Protection Zones to confirm that the requirement for minimum fine ground fuel is being complied with. Off-site: reviewing of documentation relating to bush fire management, decisions made and interviewing persons responsible for bush fire management to confirm that actions are being undertaken to keep fine ground fuel to a minimum.	Y
15.2.3 A shrub component occupying only 20% of the total area;	Refer to Requirements 15.0	NA	Ensure a shrub component occupying only 20% of the total area.	On-site: undertaking site inspection of Asset Protection Zones and undertaking 20 X 20m BioBanking Quadrate to determine shrub cover % to confirm that the shrub component only occupies 20% of the total area. Off-site: reviewing of documentation relating to bush fire management, decisions made and interviewing persons responsible for bush fire management to confirm that actions are being undertaken to ensure that the shrub component only occupies 20% of the total area.	Y
15.2.4 Discontinuous vegetation and tree canopy cover; and	Refer to Requirements 15.0	NA	Discontinuous vegetation and tree canopy cover.	On-site: undertaking site inspection of Asset Protection Zones to confirm that vegetation and tree canopy cover is discontinuous. Off-site: reviewing of documentation relating to bush fire management, decisions made and interviewing persons responsible for bush fire management to confirm that actions are being undertaken to ensure that vegetation and tree canopy cover is discontinuous and maintained.	Y
15.2.5 No tree or shrub vegetation is to overhang or come in contact within the building/asset.	Refer to Requirements 15.0	NA	No tree or shrub vegetation is to overhang or come in contact within the building/asset.	On-site: undertaking site inspection of Asset Protection Zones to confirm that no tree or shrub vegetation overhangs or comes in contact within the building/asset. Off-site: reviewing of documentation relating to bush fire management, decisions made and interviewing persons responsible for bush fire management to confirm that actions are being undertaken to ensure that no tree or shrub vegetation overhangs or comes in contact within the building/asset and these actions are being maintained.	Y
15.3 Strategic Fire Management Zones [SFMZ] These are bushfire hazard reduced areas where fuels are managed to slow a bushfire and to reduce its intensity. SFMZs are normally located in strategic locations, such as adjacent to fire trails in high ignition areas or fire paths and are intended to:	Refer to Requirements 7.1 and 7.2 of VMP above. No prescribed burns have been established and as such no SFMZ have been implemented.	NA	Strategic Fire Management Zones [SFMZ] - These are bushfire hazard reduced areas where fuels are managed to slow a bushfire and to reduce its intensity. SFMZs are normally located in strategic locations, such as adjacent to fire trails in high ignition areas or fire paths and are intended to:		NA
15.3.1 Provide fuel reduced areas which enable the protection of assets by fire-fighters when asset protection zones are not in place;	Refer to Requirements 7.1 and 7.2 of VMP above. No prescribed burns have been established and as such no SFMZ have been implemented.	NA	Provide fuel reduced areas which enable the protection of assets by fire-fighters when asset protection zones are not in place.	On-site: undertaking site inspection of SFMZ to confirm that fuel reduced areas have been provided to enable the protection of assets by fire-fighters when asset protection zones are not in place. Off-site: reviewing of documentation relating to bush fire management, decisions made and interviewing persons responsible for bush fire management to confirm that fuel reduced areas have been provided and are being maintained to enable the protection of assets by fire-fighters when asset protection zones are not in place.	NA
15.3.2 Compliment asset protection zones where these do not provide adequate protection;	Refer to Requirements 7.1 and 7.2 of VMP above. No prescribed burns have been established and as such no SFMZ have been implemented.	NA	Compliment asset protection zones where these do not provide adequate protection.	On-site: undertaking site inspection of SFMZs to confirm that these zones compliment asset protection zones where these do not provide adequate protection. Off-site: reviewing of documentation relating to bush fire management, decisions made and interviewing persons responsible for bush fire management to confirm that SFMZs are being maintained to compliment asset protection zones where these do not provide adequate protection.	NA

15.3.3 Provide strategically located fuel reduced areas to reduce the potential for large scale wildfires to develop;	Refer to Requirements 7.1 and 7.2 of VMP above. B389	NA	Provide strategically located fuel reduced areas to reduce the potential fire large scale wildfires to develop.	On-site: undertaking site inspection of fuel reduced areas within SFMZ to confirm that these zones provide strategically located fuel reduced areas to reduce the potential for large scale wildfires to develop. Off-site: reviewing of documentation relating to bush fire management, decisions made and interviewing persons responsible for bush fire management to confirm that SFMZs are being maintained to provide strategically located fuel reduced areas to reduce the potential for large scale wildfires to develop.	NA
15.3.4 Provide areas where fire can be more easily suppressed; or	Refer to Requirements 7.1 and 7.2 of VMP above. No prescribed burns have been established and as such no SFMZ have been implemented.	NA	Provide areas where fire can be more easily suppressed.	On-site: undertaking site inspection of SFMZ to confirm that areas are being provided where fire can be more easily suppressed. Off-site: reviewing of documentation relating to bush fire management, decisions made and interviewing persons responsible for bush fire management to confirm that SFMZs are being maintained to provide areas where fire can be more easily suppressed.	NA
15.3.5 Provide strategically located fuel reduced areas to reduce vulnerability of assets which are susceptible to fire [including flora & fauna assets].	Refer to Requirements 7.1 and 7.2 of VMP above. No prescribed burns have been established and as such no SFMZ have been implemented.	NA	Provide strategically located fuel reduced areas to reduce vulnerability of assets which are susceptible to fire [including flora & fauna assets].	On-site: undertaking site inspection of fuel reduced areas within SFMZ to confirm strategically located fuel reduced areas to reduce vulnerability of assets which are susceptible to fire [including flora & fauna assets]. Off-site: reviewing of documentation relating to bush fire management, decisions made and interviewing persons responsible for bush fire management to confirm that SFMZs are being maintained to provide strategically located fuel reduced areas to reduce vulnerability of assets which are susceptible to fire [including flora & fauna assets].	NA
15.4 Heritage Management Zone [HMZ] These are zones which are not fuel managed and are retained to enhance the conservation of biodiversity – e.g. riparian corridors and areas of high conservation value. The zone objective is to:	Refer to Requirements 7.1 and 7.2 of VMP above. No prescribed burns have been established and as such no HMZs have been implemented.	NA	Heritage Management Zone [HMZ] These are zones which are not fuel managed and are retained to enhance the conservation of biodiversity – e.g. riparian corridors and areas of high conservation value. The zone objective is to:		NA
15.4.1 Manage bushfire to meet the conservation needs of threatened species of flora and fauna;	Refer to Requirements 7.1 and 7.2 of VMP above. No prescribed burns have been established and as such no HMZs have been implemented.	NA	Manage bushfire to meet the conservation needs of threatened species of flora and fauna.	On-site: undertaking site inspection of HMZ and undertaking 20 X 20m BioBanking quadrat to identify vegetation composition to confirm that bushfires are managed to meet the conservation needs of threatened species of flora and fauna. Off-site: reviewing of documentation relating to bush fire management, decisions made and interviewing persons responsible for bush fire management to confirm that bushfires are managed to meet the conservation needs of threatened species of flora and fauna.	NA
15.4.2 Maintain biodiversity in vegetation community composition and structure; and	Refer to Requirements 7.1 and 7.2 of VMP above. No prescribed burns have been established and as such no HMZs have been implemented.	NA	Maintain biodiversity in vegetation community composition and structure.	On-site: undertaking site inspection of HMZ and undertaking 20 X 20m BioBanking quadrat to identify vegetation composition and confirm that these zones maintain biodiversity in vegetation community composition and structure. Off-site: reviewing of documentation relating to bush fire management, decisions made and interviewing persons responsible for bush fire management to confirm that HMZs are monitored to ensure that they maintain biodiversity in vegetation community composition and structure.	NA
15.4.3 Protect the area from the application of inappropriate fire regimes.	Refer to Requirements 7.1 and 7.2 of VMP above. No prescribed burns have been established and as such no HMZs have been implemented.	NA	Protect the area from the application of inappropriate fire regimes.	On-site: undertaking site inspection of fuel reduced areas within HMZ to confirm that this zone has been protected from the application of inappropriate fire regimes. Off-site: reviewing of documentation relating to bush fire management, decisions made and interviewing persons responsible for bush fire management to confirm that HMZs are being protected from the application of inappropriate fire regimes.	NA

<table>
<tr><td>Fire Management Plan - Condition 16</td><td colspan="5">5.5 Fuel Management Zone:

5.5.3 Management Techniques

<u>i. Asset Protection Zones</u>

The purpose of the Asset Protection Zones is to ensure that the presence of fuels that could become involved in a fire are reduced, minimising the impact of direct flame and radiant heat on the development within the Estate.

The implementation of Asset Protection Zones to areas within the site that satisfy these requirements can be achieved through the following permissible works:

(a) Mechanical work for maintenance or establishment of the APZ in accordance with the requirements of Part 4 of the Bushfire Environmental Assessment Code;
(b) Pruning and tree removal in accordance with the requirements of Part 4 of the Bushfire Environmental Assessment Code;
(c) Prescribed burning in accordance with the requirements of Part 5 of the Bushfire Environmental Assessment Code;
(d) Construction of control lines in accordance with the requirements of Part 5 of the Bushfire Environmental Assessment Code;
(e) Pile burning for disposal of vegetation removed during APZ works only where the material collected can not be disposed of by normal garbage collection or composted on site.

The maximum extent of work permissible within an undefined Asset Protection Zone, being an Asset Protection Zone to existing development and which does not form part of the required width of Asset Protection Zone created as part of the approval of a new development within the Estate, is as listed in Table 5.8 of the BMP:

Table 5.8 MAXIMUM WIDTH OF ASSET PROTECTION ZONES TO EXISTING DEVELOPMENT – UNLESS OTHERWISE NOMINATED

<table><tr><th>Slope</th><th>Width</th></tr><tr><td>Hazard Upslope</td><td>20 metre width of managed APZ</td></tr><tr><td>Hazard downslope < 10 degrees</td><td>20 metres width of managed APZ</td></tr><tr><td>Hazard downslope 10 – 15 degrees</td><td>30 metres width of managed APZ</td></tr><tr><td>Hazard downslope > 15 degrees</td><td>40 metres width of managed APZ</td></tr></table></td></tr>
<tr><td>16.0 The implementation of Asset Protection Zones within the site can be achieved through the following permissible works:

(a) Mechanical work for maintenance or establishment of the APZ in accordance with the requirements of Part 4 of the Bushfire Environmental Assessment Code;
(b) Pruning and tree removal in accordance with the requirements of Part 4 of the Bushfire Environmental Assessment Code;
(c) Prescribed burning in accordance with the requirements of Part 5 of the Bushfire Environmental Assessment Code;
(d) Construction of control lines in accordance with the requirements of Part 5 of the Bushfire Environmental Assessment Code;
(e) Pile burning for disposal of vegetation removed during APZ works only where the material collected can not be disposed of by normal garbage collection or composted on site.</td><td>Refer to Requirements 6.0, 7.1 and 7.2.</td><td>NA</td><td>The implementation of Asset Protection Zones within the site can be achieved through the following permissible works:
(a) Mechanical work for maintenance or establishment of the APZ in accordance with the requirements of Part 4 of the Bushfire Environmental Assessment Code;
(b) Pruning and tree removal in accordance with the requirements of Part 4 of the Bushfire Environmental Assessment Code;
(c) Prescribed burning in accordance with the requirements of Part 5 of the Bushfire Environmental Assessment Code;
(d) Construction of control lines in accordance with the requirements of Part 5 of the Bushfire Environmental Assessment Code;
(e) Pile burning for disposal of vegetation removed during APZ works only where the material collected can not be disposed of by normal garbage collection or composted on site.</td><td>On-site: undertaking site inspection of Asset Protection Zone to confirm that management of the APZ is in accordance with the approved BMP.

Off-site: reviewing of documentation relating to prescription burning records and interviewing person responsible for bush fire management to confirm that management of the APZ is in accordance with the approved BMP.</td><td>NA</td></tr>
<tr><td>16.1 The purpose of the Asset Protection Zones is to ensure that the presence of fuels that could become involved in a fire are reduced, minimising the impact of direct flame and radiant heat on the development within the Estate.

The implementation of Asset Protection Zones to areas within the site that satisfy these requirements can be achieved through the following permissible works:</td><td>Refer to Requirements 6.0, 7.1 and 7.2.</td><td>NA</td><td>The purpose of the Asset Protection Zones is to ensure that the presence of fuels that could become involved in a fire are reduced, minimising the impact of direct flame and radiant heat on the development within the Estate. The implementation of Asset Protection Zones to areas within the site that satisfy these requirements can be achieved through the following permissible works:</td><td></td><td>NA</td></tr>
</table>

16.1.1 Mechanical work for maintenance or establishment of the APZ in accordance with the requirements of Part 4 of the Bushfire Environmental Assessment Code;	Refer to Requirements 6.0, 7.1 and 7.2.	NA	Carry out mechanical work for maintenance or establishment of the APZ in accordance with the requirements of Part 4 of the Bushfire Environmental Assessment Code.	On-site: undertaking site inspection of Asset Protection Zone to confirm that mechanical work for maintenance or establishment of the APZ has been undertaken in accordance with the requirements of Part 4 of the Bushfire Environmental Assessment Code. Off-site: reviewing of documentation relating to prescription burning records and interviewing person/s responsible for bush fire management to confirm that mechanical work for maintenance or establishment of the APZ has been undertaken in accordance with the requirements of Part 4 of the Bushfire Environmental Assessment Code.	Y
16.1.2 Pruning and tree removal in accordance with the requirements of Part 4 of the Bushfire Environmental Assessment Code;	Refer to Requirements 6.0, 7.1 and 7.2.	NA	Prune and remove trees in accordance with the requirements of Part 4 of the Bushfire Environmental Assessment Code.	On-site: undertaking site inspection of Asset Protection Zones to confirm that pruning and tree removal has been undertaken in accordance with the requirements of Part 4 of the Bushfire Environmental Assessment Code. Off-site: reviewing of documentation and interviewing person/s responsible for bush fire management to confirm that pruning and tree removal has been undertaken in accordance with the requirements of Part 4 of the Bushfire Environmental Assessment Code.	Y
16.1.3 Prescribed burning in accordance with the requirements of Part 5 of the Bushfire Environmental Assessment Code;	Refer to Requirements 6.0, 7.1 and 7.2.	NA	Carry out prescription burning in accordance with Part 5 of the Bushfire Environmental Assessment Code of NSW [NSW Rural Fire Service 2006].	Off-site: reviewing of documentation relating to prescription burning records and interviewing person/s responsible for bush fire management to confirm that prescribed burning has been undertaken in accordance with the requirements of Part 5 of the Bushfire Environmental Assessment Code.	NA
16.1.4 Construction of control lines in accordance with the requirements of Part 5 of the Bushfire Environmental Assessment Code;	Refer to Requirements 6.0, 7.1 and 7.2.	NA	Construct control lines in accordance with the requirements of Part 5 of the Bushfire Environmental Assessment Code.	On-site: undertaking site inspection of Asset Protection Zone to confirm that construction of control lines has been undertaken in accordance with the requirements of Part 5 of the Bushfire Environmental Assessment Code. Off-site: reviewing of documentation and interviewing person/s responsible for bush fire management to confirm that construction of control lines has been undertaken in accordance with the requirements of Part 5 of the Bushfire Environmental Assessment Code.	Y
16.1.5 Pile burning for disposal of vegetation removed during APZ works only where the material collected can not be disposed of by normal garbage collection or composted on site.	Refer to Requirements 6.0, 7.1 and 7.2. No pile burning has occurred on site	NA	Pile burning for disposal of vegetation removed during APZ works only where the material collected can not be disposed of by normal garbage collection or composted on site.	On-site: undertaking site inspection of Asset Protection Zone to confirm that pile burning for disposal of vegetation removed during APZ works has only been undertaken where the material collected can not be disposed of by normal garbage collection or composted on site. Off-site: reviewing of documentation and interviewing person/s responsible for bush fire management to confirm that pile burning for disposal of vegetation removed during APZ works has only been undertaken where the material collected can not be disposed of by normal garbage collection or composted on site.	NA

16.2 The maximum extent of work permissible within an undefined Asset Protection Zone, being an Asset Protection Zone to existing development and which does not form part of the required width of Asset Protection Zone created as part of the approval of a new development within the Estate, is as listed in Table 5.8 of the BMP	Refer to Requirements 6.0, 7.1 and 7.2.	NA	Undertake works permissible within Asset Protection Zones in accordance with Table 5.8 of the BMP.	On-site: undertaking site inspection of Asset Protection Zones to confirm that the maximum extent of work permissible within an undefined Asset Protection Zone is as listed in Table 5.8 of the approved BMP	Y
Fire Management Plan - Condition 17	**5.5 Fuel Management Zone:** **5.5.4 Strategic Fire Management Zones [SFMZ]** **The following management works are permissible within a SFMZ:** **(a) Mechanical clearing along existing linear fire breaks or up to 6.0 metres from boundary fences and must not involve the removal of native vegetation older than ten years;** **(b) Prescribed burning in accordance with Part 5 of the Bushfire Environmental Assessment Code of NSW [NSW Rural Fire Service 2006];** **(c) Construction of Control Lines in accordance with Part 5 of the Bushfire Environmental Assessment Code of NSW [NSW Rural Fire Service 2006]; and** **(d) Pile burning for disposal of vegetation material removed during APZ or SFMZ works.**				
17.1 Strategic Fire Management Zones [SFMZ] The following management works are permissible within a SFMZ:			Strategic Fire Management Zones [SFMZ] - The following management works are permissible within a SFMZ:		
17.1.1 Mechanical clearing along existing linear fire breaks or up to 6.0 metres from boundary fences and must not involve the removal of native vegetation older than ten years;	Refer to Requirements 6.0, 7.1 and 7.2. All works inspected at the time of the audit have been undertaken within existing fire breaks or up to 6 meters from boundary fences and excluded removal of vegetation that appeared to be older than 10 years.	NA	Carry out mechanical clearing along existing linear fire breaks or up to 6.0 metres from boundary fences that must not involve the removal of native vegetation older than ten years.	On-site: undertaking site inspection of SFMZ to confirm that mechanical clearing along existing linear fire breaks or up to 6.0 metres from boundary fences has not involved the removal of native vegetation older than ten years. Off-site: reviewing of documentation relating to prescription burning records and interviewing person/s responsible for bush fire management to confirm that mechanical clearing along existing linear fire breaks or up to 6.0 metres from boundary fences has not involved the removal of native vegetation older than ten years.	Y
17.1.2 Prescribed burning in accordance with Part 5 of the Bushfire Environmental Assessment Code of NSW [NSW Rural Fire Service 2006];	Refer to Requirements 7.1 and 7.2 of VMP above. No prescribed burns have been established and as such no SFMZ have been implemented.	NA	Carry out prescription burning in accordance with Part 5 of the Bushfire Environmental Assessment Code of NSW [NSW Rural Fire Service 2006].	On-site: undertaking site inspection of Asset Protection Zone to confirm that prescribed burning has been undertaken in accordance with Part 5 of the Bushfire Environmental Assessment Code of NSW [NSW Rural Fire Service 2006]. Off-site: reviewing of documentation relating to prescription burning records and interviewing person responsible for bush fire management to confirm that prescribed burning has been undertaken in accordance with Part 5 of the Bushfire Environmental Assessment Code of NSW [NSW Rural Fire Service 2006].	NA
17.1.3 Construction of Control Lines in accordance with Part 5 of the Bushfire Environmental Assessment Code of NSW [NSW Rural Fire Service 2006]; and	Refer to Requirements 7.1 and 7.2 of VMP above. No prescribed burns have been established and as such no SFMZ have been implemented.	NA	Construct Control Lines in accordance with Part 5 of the Bushfire Environmental Assessment Code of NSW [NSW Rural Fire Service 2006].	On-site: undertaking site inspection of SFMZ to confirm that construction of Control Lines has been undertaken in accordance with Part 5 of the Bushfire Environmental Assessment Code of NSW [NSW Rural Fire Service 2006]. Off-site: reviewing of documentation relating to construction of Control Lines to confirm it has been undertaken in accordance with Part 5 of the Bushfire Environmental Assessment Code of NSW [NSW Rural Fire Service 2006].	NA

17.1.4 Pile burning for disposal of vegetation material removed during APZ or SFMZ works.	Refer to Requirements 6.0, 7.1 and 7.2 of VMP. No pile burning has occurred on site	NA	Pile burning for disposal of vegetation material removed during APZ or SFMZ works.	On-site: undertaking site inspection of SFMZ to confirm that pile burning has been undertaken for disposal of vegetation material removed during APZ or SFMZ works. Off-site: reviewing of documentation and interviewing appropriate personnel to confirm that pile burning has been undertaken for disposal of vegetation material removed during APZ or SFMZ works.	N
Fire Management Plan - Condition 18	**5.5 Fuel Management Zone:** **5.5.5 Heritage Management Zones [HMZ]** **The following management works are permissible within a HMZ:** **No prescribed fire management works are proposed within this zone as it forms the 40 metre wide riparian corridor to Coups Creek and Lane Cove River and the 20 metre wide riparian corridor to the Coups Creek tributary and the watercourse in the south-eastern corner of the Estate.**				
18.1 No prescribed fire management works are proposed within the Heritage Management Zone	Refer to Requirements 6.0, 7.1 and 7.2. Prescribed fire management has not yet occurred.	NA	No prescribed fire management works are proposed within the Heritage Management Zone.	On-site: undertaking site inspection of Heritage Management Zone to confirm that no prescribed fire management works have been undertaken within the Heritage Management Zone Off-site: reviewing of documentation and interviewing appropriate personnel to confirm that no prescribed fire management works have been undertaken within the Heritage Management Zone	NA
Fire Management Plan - Condition 19	**5.6 Fire Management Strategies:** **[Refer to Appendix F – Fuel Management Plan].** **5.6.2 Asset Protection Zones** **<u>i. Inner Protection Area</u>** **a. Location** **The following locations shall be managed as an Inner Protection Area in accordance with the performance criteria provided below:** **• The existing landscaped gardens, mown lawns and managed vegetation within the Estate as, defined by either the E2 zone boundary or by the modified E2 zone boundary/Asset Protection Zone line;** **• Provision of a 20 metre wide managed Asset Protection Zone [APZ No. 1] to the perimeter of the existing dwellings on The Comenarra Parkway [east];** **• Management of the existing Asset Protection Zone to the west of the existing dwellings on The Comenarra Parkway [west] – APZ No. 11;**				
19.0 The following locations in the Asset protection zone shall be managed as an Inner Protection Area in accordance with the performance criteria provided below: · The existing landscaped gardens, mown lawns and managed vegetation within the Estate as, defined by either the E2 zone boundary or by the modified E2 zone boundary/Asset Protection Zone line; · Provision of a 20 metre wide managed Asset Protection Zone [APZ No. 1] to the perimeter of the existing dwellings on The Comenarra Parkway [east]; · Management of the existing Asset Protection Zone to the west of the existing dwellings on The Comenarra Parkway [west] – APZ No. 11;	Existing landscaped gardens, mown lawns and managed vegetation within the Estate as, defined by either the E2 zone boundary or by the modified E2 zone boundary/Asset Protection Zone are currently being managed in accordance with the inner protection zone requirements	NA	The following locations in the Asset protection zone shall be managed as an Inner Protection Area in accordance with the performance criteria provided below:· The existing landscaped gardens, mown lawns and managed vegetation within the Estate as, defined by either the E2 zone boundary or by the modified E2 zone boundary/Asset Protection Zone line; · Provision of a 20 metre wide managed Asset Protection Zone [APZ No. 1] to the perimeter of the existing dwellings on The Comenarra Parkway [east]; · Management of the existing Asset Protection Zone to the west of the existing dwellings on The Comenarra Parkway [west] – APZ No. 11;	On-site: undertaking site inspection of Inner Protection Area to confirm that specified locations are being managed as an Inner Protection Area in accordance with the performance criteria provided in the approved BMP. Off-site: reviewing of documentation and interviewing appropriate personnel to confirm that specified locations are being managed as an Inner Protection Area in accordance with the performance criteria provided in the approved BMP.	Y
19.1 <u>Inner Protection Area</u> Location **The following locations shall be managed as an Inner Protection Area in accordance with the performance criteria provided below:**			Inner Protection Area - Location The following locations shall be managed as an Inner Protection Area in accordance with the performance criteria provided below:		NA

19.1.1 The existing landscaped gardens, mown lawns and managed vegetation within the Estate as, defined by either the E2 zone boundary or by the modified E2 zone boundary/Asset Protection Zone line;	Existing landscaped gardens, mown lawns and managed vegetation within the Estate as, defined by either the E2 zone boundary or by the modified E2 zone boundary/Asset Protection Zone are currently being managed in accordance with the inner protection zone requirements	NA	The existing landscaped gardens, mown lawns and managed vegetation within the Estate as, defined by either the E2 zone boundary or by the modified E2 zone boundary/Asset Protection Zone line.	On-site: undertaking site inspection of Inner Protection Area to confirm that the existing landscaped gardens, mown lawns and managed vegetation within the Estate as defined by either the E2 zone boundary or by the modified E2 zone boundary/Asset Protection Zone line are being managed as an Inner Protection Area. Off-site: reviewing of documentation and interviewing appropriate personnel to confirm that the existing landscaped gardens, mown lawns and managed vegetation within the Estate as defined by either the E2 zone boundary or by the modified E2 zone boundary/Asset Protection Zone line are being managed as an Inner Protection Area.	Y
19.1.2 Provision of a 20 metre wide managed Asset Protection Zone [APZ No. 1] to the perimeter of the existing dwellings on The Comenarra Parkway [east];	This is covered under Requirement 19.0 above and should be removed from future audit protocols.	NA	Provide a 20 metre wide managed Asset Protection Zone [APZ No. 1] to the perimeter of the existing dwellings on The Comenarra Parkway [east].	On-site: undertaking site inspection of Inner Protection Area to confirm that provision of a 20 metre wide managed Asset Protection Zone [APZ No. 1] to the perimeter of the existing dwellings on The Comenarra Parkway [east] is being managed as an Inner Protection Area. Off-site: reviewing of documentation and interviewing appropriate personnel to confirm that to confirm that provision of a 20 metre wide managed Asset Protection Zone [APZ No. 1] to the perimeter of the existing dwellings on The Comenarra Parkway [east] is being managed as an Inner Protection Area.	NA
19.1.3 Management of the existing Asset Protection Zone to the west of the existing dwellings on The Comenarra Parkway [west] – APZ No. 11;	This is covered under Requirement 19.0 above and should be removed from future audit protocols.	NA	Management of the existing Asset Protection Zone to the west of the existing dwellings on The Comenarra Parkway [west] – APZ No. 11.	On-site: undertaking site inspection of Inner Protection Area to confirm that the existing Asset Protection Zone to the west of the existing dwellings on The Comenarra Parkway [west] – APZ No. 11 is being managed as an Inner Protection Area. Off-site: reviewing of documentation and interviewing appropriate personnel to confirm that the existing Asset Protection Zone to the west of the existing dwellings on The Comenarra Parkway [west] – APZ No. 11 is being managed as an Inner Protection Area.	NA
Fire Management Plan - Condition 20	**5.6 Fire Management Strategies:** **[Refer to Appendix F – Fuel Management Plan].** **5.6.2 Asset Protection Zones** **i. Inner Protection Area** **b. Performance Criteria – Inner Protection Area:** **Management of the Inner Protection Area shall comply with the following:** **· Maintain maximum fine fuel loading [leaves and twigs] at 3 tonnes / hectare;** **· Maintain shrubs so that they are clear of the external glazing of the building by at least five [5] metres;** **· Prune low tree branches 2 metres from the ground to prevent a ground fire from spreading into the tree canopy;** **· Avoid the use of flammable mulch in garden beds that adjoin the buildings.** **· Maintain landscape gardens by removing dead and dying material;** **· Retention of small clumps of trees is acceptable provided that they do not provide a continuous fire-path to the buildings.** **· Separate tree crowns by at least 2 metres so that the canopy is not continuous and does not encroach closer than 5 metres from the buildings;** **· Landscape species selection shall be drawn from those that are considered to be species which are "fire retardant" and do not promulgate the spread of fire.**				

20.0 Management of the Inner Protection Area in the asset protection zone shall comply with the following: · Maintain maximum fine fuel loading [leaves and twigs] at 3 tonnes / hectare; · Maintain shrubs so that they are clear of the external glazing of the building by at least five [5] metres; · Prune low tree branches 2 metres from the ground to prevent a ground fire from spreading into the tree canopy; · Avoid the use of flammable mulch in garden beds that adjoin the buildings. · Maintain landscape gardens by removing dead and dying material; · Retention of small clumps of trees is acceptable provided that they do not provide a continuous fire-path to the buildings. · Separate tree crowns by at least 2 metres so that the canopy is not continuous and does not encroach closer than 5 metres from the buildings; · Landscape species selection shall be drawn from those that are considered to be species which are “fire retardant” and do not promulgate the spread of fire.	The Inner Protection Area has not been monitored against the requirements of this condition (i.e. vegetation clearances, fuel loads etc. have not been measured). Therefore compliance with this condition has not been met. The only fire maintenance works undertaken at the site have included clearing of the APZ and maintenance of fire trails. The site audit inspected areas of the IPA and APZ within the E2 zone and it was observed to contain isolated scattered canopy trees over managed lawn and understorey and/or gardens. The IPA generally was observed to be in accordance with the BMP, however; no data on fuel loads was collected or sighted. Recommendation - review requirements for management of the inner protection zone in the BMP against site conditions and undertake maintenance works as required.	Staff interviews, review of available documents	Management of the Inner Protection Area in the asset protection zone shall comply with the following:· Maintain maximum fine fuel loading [leaves and twigs] at 3 tonnes / hectare; · Maintain shrubs so that they are clear of the external glazing of the building by at least five [5] metres; · Prune low tree branches 2 metres from the ground to prevent a ground fire from spreading into the tree canopy; · Avoid the use of flammable mulch in garden beds that adjoin the buildings. · Maintain landscape gardens by removing dead and dying material; · Retention of small clumps of trees is acceptable provided that they do not provide a continuous fire-path to the buildings. · Separate tree crowns by at least 2 metres so that the canopy is not continuous and does not encroach closer than 5 metres from the buildings; · Landscape species selection shall be drawn from those that are considered to be species which are “fire retardant” and do not promulgate the spread of fire.	On-site: undertaking site inspection of Inner Protection Area to confirm that management of the Inner Protection Area is being undertaken in compliance with the approved BMP. Off-site: reviewing of documents relating to bush fire management, records of decisions made and interviewing persons responsible for bush fire management to confirm that management of the Inner Protection Area is being undertaken in compliance with the approved BMP.	N
20.1 Management of the Inner Protection Area in the asset protection zone shall comply with the following:	Refer to Requirement 20.0	NA	Management of the Inner Protection Area in the asset protection zone shall comply with the following:		NA
20.1.1 Maintain maximum fine fuel loading [leaves and twigs] at 3 tonnes / hectare;	The IPA generally was observed to be in accordance with the BMP, however; no data on fuel loads was collected or sighted.	NA	Maintain maximum fine fuel loading [leaves and twigs] at 3 tonnes / hectare.	On-site: undertaking site inspection of Inner Protection Area to confirm that maximum fine fuel loading [leaves and twigs] is being maintained at 3 tonnes / hectare. Off-site: reviewing of documents relating to bush fire management, records of decisions made and/or interviewing persons responsible for bush fire management, as applicable, to confirm that maximum fine fuel loading [leaves and twigs] is being maintained at 3 tonnes / hectare.	N
20.1.2 Maintain shrubs so that they are clear of the external glazing of the building by at least five [5] metres;	Refer to Requirement 20.1 In areas inspected by the audit, shrubs have been maintained so that they are clear of the external glazing of the building by at least five [5] metres;	NA	Maintain shrubs so that they are clear of the external glazing of the building by at least five [5] metres.	On-site: undertaking site inspection of Inner Protection Area to confirm that shrubs are being maintained so that they are clear of the external glazing of the building by at least five [5] metres. Off-site: reviewing of documents relating to bush fire management, records of decisions made and/or interviewing persons responsible for bush fire management, as applicable, to confirm that shrubs are being maintained so that they are clear of the external glazing of the building by at least five [5] metres.	Y
20.1.3 Prune low tree branches 2 metres from the ground to prevent a ground fire from spreading into the tree canopy;	Refer to Requirement 20.1 In areas inspected during the audit, tree branches have been maintained 2 metres from the ground to prevent a ground fire from spreading into the tree canopy;	NA	Prune low tree branches 2 metres from the ground to prevent a ground fire from spreading into the tree canopy.	On-site: undertaking site inspection of Inner Protection Area to confirm that low tree branches are being pruned to 2 metres from the ground to prevent a ground fire from spreading into the tree canopy. Off-site: reviewing of documents relating to bush fire management, records of decisions made and/or interviewing persons responsible for bush fire management, as applicable, to confirm that low tree branches are being pruned to 2 metres from the ground to prevent a ground fire from spreading into the tree canopy.	Y
20.1.4 Avoid the use of flammable mulch in garden beds that adjoin the buildings.	Refer to Requirement 20.0. No flammable mulch was observed in garden beds that adjoin buildings in the areas inspected by the audit	NA	Avoid the use of flammable mulch in garden beds that adjoin the buildings.	On-site: undertaking site inspection of Inner Protection Area to confirm that the use of flammable mulch in garden beds that adjoin the buildings is being avoided. Off-site: reviewing of documents relating to bush fire management, records of decisions made and/or interviewing persons responsible for bush fire management, as applicable, to confirm that the use of flammable mulch in garden beds that adjoin the buildings is being avoided.	Y

20.1.5 Maintain landscape gardens by removing dead and dying material;	Refer to Requirement 20.0 The audit inspection observed that landscape gardens have been maintained by removing dead and dying material.	NA	Maintain landscape gardens by removing dead and dying material.	On-site: undertaking site inspection of Inner Protection Area to confirm that landscape gardens are being maintained by removing dead and dying material. Off-site: reviewing of documents relating to bush fire management, records of decisions made and/or interviewing persons responsible for bush fire management, as applicable, to confirm that landscape gardens are being maintained by removing dead and dying material.	Y
20.1.6 Retention of small clumps of trees is acceptable provided that they do not provide a continuous fire-path to the buildings.	Refer to Requirement 20.0 Small clumps of trees do not provide a continuous fire-path to the buildings in the areas inspected by the audit.	NA	Retention of small clumps of trees is acceptable provided that they do not provide a continuous fire-path to the buildings.	On-site: undertaking site inspection of Inner Protection Area to confirm that where small clumps of trees are being retained, they do not provide a continuous fire-path to the buildings. Off-site: reviewing of documents relating to bush fire management, records of decisions made and/or interviewing persons responsible for bush fire management, as applicable, to confirm that where small clumps of trees are being retained, they do not provide a continuous fire-path to the buildings.	Y
20.1.7 Separate tree crowns by at least 2 metres so that the canopy is not continuous and does not encroach closer than 5 metres from the buildings;	Refer to Requirement 20.0 Tree crowns are generally separated by 2 meters and do not provide a continuous canopy to within 5 m of buildings in the areas inspected by the audit.	NA	Separate tree crowns by at least 2 metres so that the canopy is not continuous and does not encroach closer than 5 metres from the buildings.	On-site: undertaking site inspection of Inner Protection Area to confirm that tree crowns are separated by at least 2 metres so that the canopy is not continuous and does not encroach closer than 5 metres from the buildings. Off-site: reviewing of documents relating to bush fire management, records of decisions made and/or interviewing persons responsible for bush fire management, as applicable, to confirm that tree crowns are separated by at least 2 metres so that the canopy is not continuous and does not encroach closer than 5 metres from the buildings.	Y
20.1.8 Landscape species selection shall be drawn from those that are considered to be species which are “fire retardant” and do not promulgate the spread of fire.	Refer to Requirement 20.0 Landscape species in new garden beds inspected use a range of species and includes species which are “fire retardant” and do not promulgate the spread of fire.	NA	Landscape species selection shall be drawn from those that are considered to be species which are “fire retardant” and do not promulgate the spread of fire.	On-site: undertaking site inspection of Inner Protection Area to confirm that landscape species selection are being drawn from those that are considered to be species which are “fire retardant” and do not promulgate the spread of fire. Off-site: reviewing of documents relating to bush fire management, records of decisions made and/or interviewing persons responsible for bush fire management, as applicable, to confirm that landscape species selection are being drawn from those that are considered to be species which are “fire retardant” and do not promulgate the spread of fire.	Y
Fire Management Plan - Condition 21	**5.6 Fire Management Strategies:** **[Refer to Appendix F – Fuel Management Plan].** **5.6.2 Asset Protection Zones** **ii. Management Program - Asset Protection Zones** **Table 5.9 of the BMP provides a guide to the timing of the works required to maintain the Asset Protection Zones.**				

Table 5.9 TIMING OF WORKS WITHIN INNER PROTECTION AREA

Management Area		Management Prescription	Method	Timing
Inner Protection Area	Landscaped Gardens	Minimize the accumulation of combustible fuels and accumulated ground litter	Manual removal of combustible fuels; pruning of shrubs	Intervals not to exceed monthly in Spring and Summer
	Trees	Provide canopy separation between trees & buildings; maintain limbs 2m clear of ground & shrubs	Pruning	Annual inspection with works undertaken in Spring
	Lawns	Minimize Fine Fuels	Mowing & slashing	Intervals not to exceed monthly in Spring and Summer
Buildings	External surfaces/ Gutters	Check fire protection measures to buildings. Clean roof gutters	Visual Check & repair if necessary. Manual removal of debris	Annual inspection in August; Removal of combustible materials in gutters/valleys not to exceed monthly in Spring & Summer

21.0 The asset protection zone management program timing will be undertaken in accordance with Table 5.9 of the BMP.	The Inner Protection Area has not been measured against the requirements of this condition (i.e.. vegetation clearances, fuel loads etc. have not been measured). Therefore compliance with this condition has not been met. The only fire maintenance works undertaken at the site have included clearing of the APZ and maintenance of fire trails. The site audit inspected areas of the IPA and APZ within the E2 zone and it was observed to be managed in accordance with prescribed conditions in Table 5.9 B387		The asset protection zone management program timing will be undertaken in accordance with Table 5.9 of the BMP.	On-site: undertaking site inspection of Inner Protection Area to confirm that the asset protection zone management program timing is being undertaken in accordance with Table 5.9 of the approved BMP. Off-site: reviewing of documents relating to timing of works within the Inner Protection Zone to confirm that the asset protection zone management program timing is being undertaken in accordance with Table 5.9 of the approved BMP.	N
21.1 The asset protection zone management program will be undertaken in accordance with Table 5.9 of the BMP, entitled "Timing of works within Inner Protection Zone Area".	Refer to Requirement 21.0.		Carry out asset protection zone management program in accordance with Table 5.9 of the BMP.	On-site: undertaking site inspection of Inner Protection Area to confirm that the asset protection zone management program timing is being undertaken in accordance with Table 5.9 of the approved BMP. Off-site: reviewing of documents relating to timing of works within the Inner Protection Zone to confirm that the asset protection zone management program timing is being undertaken in accordance with Table 5.9 of the approved BMP.	N

Fire Management Plan - Condition 22	**5.6 Fire Management Strategies:** **[Refer to Appendix F – Fuel Management Plan].** **5.6.2 Asset Protection Zones** **<u>iii. Outer Protection Area</u>** **a. Location** **The following locations shall be managed as an Outer Protection Area in accordance with the performance criteria provided below:** **· Provision of a 10 metre wide managed Outer Protection Area [APZ No. 2] along the eastern boundary, within the Sydney Sandstone Gully Forest;** **· Management of the existing Outer Protection Area to the west of the existing dwellings on Elizabeth Street – APZ No. 3;** **· Provision of a 10 metre wide managed Outer Protection Area [APZ No. 4, APZ No. 5, APZ No. 6 and APZ No. 7] along the rear of the existing properties to the north of Coups Creek; and** **· Provision of a managed Outer Protection Area [APZ No. 8, APZ No. 9 and APZ No. 10] along the access road to the Retirement Village.**				
22.0 The following locations in the asset protection zone shall be managed as an Outer Protection Area in accordance with the performance criteria provided below: · Provision of a 10 metre wide managed Outer Protection Area [APZ No. 2] along the eastern boundary, within the Sydney Sandstone Gully Forest; · Management of the existing Outer Protection Area to the west of the existing dwellings on Elizabeth Street – APZ No. 3; · Provision of a 10 metre wide managed Outer Protection Area [APZ No. 4, APZ No. 5, APZ No. 6 and APZ No. 7] along the rear of the existing properties to the north of Coups Creek; and · Provision of a managed Outer Protection Area [APZ No. 8, APZ No. 9 and APZ No. 10] along the access road to the Retirement Village.	The site audit inspected areas of the OPA and AZ within the E2 zone and it was observed to be managed in accordance with prescribed conditions in BMP. In particular APZs 1, 2, 3, 6,8, 9 and 11 were inspected and observed to be managed as per APZ requirements		The following locations in the asset protection zone shall be managed as an Outer Protection Area in accordance with the performance criteria provided below:· Provision of a 10 metre wide managed Outer Protection Area [APZ No. 2] along the eastern boundary, within the Sydney Sandstone Gully Forest; · Management of the existing Outer Protection Area to the west of the existing dwellings on Elizabeth Street – APZ No. 3; · Provision of a 10 metre wide managed Outer Protection Area [APZ No. 4, APZ No. 5, APZ No. 6 and APZ No. 7] along the rear of the existing properties to the north of Coups Creek; and · Provision of a managed Outer Protection Area [APZ No. 8, APZ No. 9 and APZ No. 10] along the access road to the Retirement Village.	On-site: undertaking site inspection of Outer Protection Area to confirm that specified locations are being managed in accordance with the performance criteria provided in the FMP. Off-site: reviewing of documents relating to management of the Outer Protection Area to confirm that specified locations are being managed in accordance with the performance criteria provided in the FMP.	Y
22.1 <u>iii. Outer Protection Area</u> a. Location The following locations shall be managed as an Outer Protection Area in accordance with the performance criteria provided <u>below:</u>			Outer Protection Area - Location The following locations shall be managed as an Outer Protection Area in accordance with the performance criteria provided below:		
22.1.1 Provision of a 10 metre wide managed Outer Protection Area [APZ No. 2] along the eastern boundary, within the Sydney Sandstone Gully Forest;	The site audit inspected areas of the OPA and AZ within the E2 zone and it was observed to be managed in accordance with prescribed conditions in BMP. In particular APZs 2, was inspected and observed to be managed as per APZ requirements	NA	Provide a 10 metre wide managed Outer Protection Area [APZ No. 2] along the eastern boundary, within the Sydney Sandstone Gully Forest.	On-site: undertaking site inspection of Outer Protection Area to confirm that a 10 metre wide managed Outer Protection Area has been provided [APZ No. 2] along the eastern boundary, within the Sydney Sandstone Gully Forest has been provided. Off-site: reviewing of documents relating to management of the Outer Protection Area to confirm that a 10 metre wide managed Outer Protection Area has been provided [APZ No. 2] along the eastern boundary, within the Sydney Sandstone Gully Forest has been provided.	Y
22.1.2 Management of the existing Outer Protection Area to the west of the existing dwellings on Elizabeth Street – APZ No. 3;	The site audit inspected areas of the OPA and AZ within the E2 zone and it was observed to be managed in accordance with prescribed conditions in BMP. In particular APZs 3, was inspected and observed to be managed as per APZ requirements	NA	Manage existing Outer Protection Area to the west of the existing dwellings on Elizabeth Street – APZ No. 3.	On-site: undertaking site inspection of Outer Protection Area to confirm that the existing Outer Protection Area is being managed to the west of the existing dwellings on Elizabeth Street – APZ No. 3. Off-site: reviewing of documents relating to management of the Outer Protection Area to confirm that the existing Outer Protection Area is being managed to the west of the existing <u>dwellings on Elizabeth Street – APZ No. 3.</u>	Y

<table>
<tr><td>22.1.3 Provision of a 10 metre wide managed Outer Protection Area [APZ No. 4, APZ No. 5, APZ No. 6 and APZ No. 7] along the rear of the existing properties to the north of Coups Creek; and</td><td>The site audit inspected areas of the OPA and AZ within the E2 zone and it was observed to be managed in accordance with prescribed conditions in BMP. In particular APZs 6, was inspected as representative sample and observed to be managed as per APZ requirements. APZs 4 and 5 were not inspected during site audit</td><td>NA</td><td>Provide a 10 metre wide managed Outer Protection Area [APZ No. 4, APZ No. 5, APZ No. 6 and APZ No. 7] along the rear of the existing properties to the north of Coups Creek.</td><td>On-site: undertaking site inspection of Outer Protection Area to confirm that a 10 metre wide managed Outer Protection Area [APZ No. 4, APZ No. 5, APZ No. 6 and APZ No. 7] has been provided along the rear of the existing properties to the north of Coups Creek.

Off-site: reviewing of documents relating to management of the Outer Protection Area to confirm that a 10 metre wide managed Outer Protection Area [APZ No. 4, APZ No. 5, APZ No. 6 and APZ No. 7] has been provided along the rear of the existing properties to the north of Coups Creek.</td><td>Y</td></tr>
<tr><td>22.1.4 Provision of a managed Outer Protection Area [APZ No. 8, APZ No. 9 and APZ No. 10] along the access road to the Retirement Village.</td><td>The site audit inspected areas of the OPA and AZ within the E2 zone and it was observed to be managed in accordance with prescribed conditions in BMP. In particular APZs 8 and 9 were inspected as representative samples and observed to be managed as per APZ requirements. APZ 10 was not inspected during the site audit</td><td>NA</td><td>Provide a managed Outer Protection Area [APZ No. 8, APZ No. 9 and APZ No. 10] along the access road to the Retirement Village.</td><td>On-site: undertaking site inspection of Outer Protection Area to confirm that a managed Outer Protection Area [APZ No. 8, APZ No. 9 and APZ No. 10] has been provided along the access road to the Retirement Village.

Off-site: reviewing of documents relating to management of the Outer Protection Area to confirm that a managed Outer Protection Area [APZ No. 8, APZ No. 9 and APZ No. 10] has been provided along the access road to the Retirement Village.</td><td>Y</td></tr>
<tr><td>Fire Management Plan - Condition 23</td><td colspan="5">5.6 Fire Management Strategies:
[Refer to Appendix F – Fuel Management Plan].

5.6.2 Asset Protection Zones

<u>iii. Outer Protection Area</u>

b. Performance Criteria – Outer Protection Area:

The Outer Protection Area is located adjacent to the hazard and the reduction of combustible fuels in this area substantially decreases the intensity of an approaching fire and restricts the pathways to crown fuels therefore reducing the level of direct flame, radiant heat and ember attack on the Inner Protection Area.

The criterion that is required to maintain an Outer Protection Area includes:

· Maintain maximum fine fuel loading [leaves and twigs] at 8 tonnes / hectare;
· Maintain a discontinuous mature tree canopy cover and shrub layer.

Table 5.10 TIMING OF WORKS WITHIN OUTER PROTECTION AREA
<table><tr><th>Management Area</th><th>Management Prescription</th><th>Method</th><th>Timing</th></tr><tr><td>Outer Protection Areas defined on Appendix F – Fire Management Plan</td><td>Maintain fine fuels at < 8 tonnes/hectare</td><td>Fuel removal / maintenance by mechanical slashing, thinning of vegetation and pruning of trees</td><td>Annual inspection in August with works to be completed, as needed, by the end of September</td></tr></table></td></tr>
<tr><td>23.0 The criterion that is required to maintain an Outer Protection Area within the asset protection zone includes:

· Maintain maximum fine fuel loading [leaves and twigs] at 8 tonnes / hectare;
· Maintain a discontinuous mature tree canopy cover and shrub layer.
- timing of maintenance works will be undertaken in accordance with Table 5.10 of the BMP.</td><td>The Outer Protection Area has not been measured against the requirements of this condition (i.e.. vegetation clearances, fuel loads etc. have not been measured). Therefore compliance with this condition has not been met. The only fire maintenance works undertaken at the site have included clearing of the APZ and maintenance of fire trails.
The site audit inspected areas of the OPA and APZ within the E2 zone and it was observed to be managed in accordance with prescribed conditions in Table 5.10. Appendix F does not distinguish between the Inner and outer protection zones.
Recommendation - review requirements for management of the inner protection zone in the BMP against site conditions and undertake maintenance works as required.</td><td>Staff interviews, review of available documents</td><td>The criterion that is required to maintain an Outer Protection Area within the asset protection zone includes:· Maintain maximum fine fuel loading [leaves and twigs] at 8 tonnes / hectare;
· Maintain a discontinuous mature tree canopy cover and shrub layer.
- timing of maintenance works will be undertaken in accordance with Table 5.10 of the BMP.</td><td>On-site: undertaking site inspection of Outer Protection Area to confirm that criterion required to maintain an Outer Protection Area within the asset protection zone is being undertaken in accordance with the performance criteria provided in the FMP.

Off-site: reviewing of documents relating to works within the Outer Protection Zone to confirm that criterion required to maintain an Outer Protection Area within the asset protection zone is being undertaken in accordance with the performance criteria provided in the FMP.</td><td>N</td></tr>
<tr><td>23.1 <u>iii. Outer Protection Area</u>
b. Performance Criteria – Outer Protection Area:

The criterion that is required to maintain an <u>Outer Protection Area includes:</u></td><td></td><td></td><td>Outer Protection Area - Performance Criteria - The criterion that is required to maintain an Outer Protection Area includes:</td><td>On-site: undertaking site inspection of Outer Protection Area.</td><td></td></tr>
<tr><td>23.1.1 Maintain maximum fine fuel loading [leaves and twigs] at 8 tonnes / hectare;</td><td>refer to 23.0</td><td>NA</td><td>Maintain maximum fine fuel loading [leaves and twigs] at 8 tonnes / hectare.</td><td>On-site: undertaking site inspection of Outer Protection Area to confirm that the maximum fine fuel loading [leaves and twigs] is being maintained at 8 tonnes / hectare.

Off-site: reviewing of documents relating to works within the Outer Protection Zone that to confirm that the maximum fine fuel loading [leaves and twigs] is being maintained at 8 tonnes / hectare.</td><td>N</td></tr>
</table>

23.1.2 Maintain a discontinuous mature tree canopy cover and shrub layer.	refer to 23.0	NA	Maintain a discontinuous mature tree canopy cover and shrub layer.	On-site: undertaking site inspection of Outer Protection Area to confirm that a discontinuous mature tree canopy cover and shrub layer is being maintained. Off-site: reviewing of documents relating to works within the Outer Protection Zone to confirm that a discontinuous mature tree canopy cover and shrub layer is being maintained.	N
23.2 Timing of maintenance works will be undertaken in accordance with Table 5.10 of the BMP, entitled "Timing of Works Within Outer Protection Area".	Maintenance works within APZ have been undertaken in accordance with the timing of works identified in the BMP table 5.10	NA	Time maintenance works in accordance with Table 5.10 of the BMP, entitled "Timing of Works Within Outer Protection Area".	On-site: undertaking site inspection of Outer Protection Area to confirm that maintenance works are being undertaken in accordance with Table 5.10 of the approved BMP, entitled "Timing of Works Within Outer Protection Area". Off-site: reviewing of documents relating to timing of works within the Outer Protection Zone to confirm that maintenance works are being undertaken in accordance with Table 5.10 of the approved BMP, entitled "Timing of Works Within Outer Protection Area".	Y
Fire Management Plan - Condition 24	**5.6 Fire Management Strategies:** **5.6.3 Strategic Fire Management Zones** **[Refer to Appendix F – Plan of Fuel Management Zones].** **i. Prescription** **The objective of these zones is to implement ecological hazard reduction burns to contribute towards conserving the species that occur in the Strategic Fire Management Zone whilst managing the fuel loads on the lands beyond the Asset Protection Zones.** **This is achieved through the implementation of appropriate fire regimes and controlling the spread of unplanned fires which could otherwise result in species extinctions. Weather conditions are a vital aspect when utilising fire to reduce a particular bushfire hazard.** **Ecological burns should be carried out during the non-flowering periods of the flora species within the bushland (autumn). The occurrence of any threatened flora and fauna species may slightly alter the timing and extent of each burn.** **The Strategic Fire Management Zones have been broken into separate hazard reduction precincts which form part of the overall land management strategy. This division will provide a guide to the implementation of rotation burning which will conserve and enhance ecological processes within the vegetation communities.** **Table 5.11 of the BMP provides details of ecological burns within the SFMZs. The schedule is based on the first hazard reduction burn being undertaken in 2011. If a wildfire occurs within the SFMZs prior to the first hazard reduction burn being completed, the timing of the program will require further review.**				
24.0 Ecological burns should be carried out during the non-flowering periods of the flora species within the bushland (autumn). The occurrence of any threatened flora and fauna species may slightly alter the timing and extent of each burn. The timing of prescription burns within the SFMZ will be undertaken in accordance with the BMP. If a wildfire occurs within the SFMZs prior to the first hazard reduction burn being completed, the timing of the program will require further review.	Refer to Requirements 7.1 and 7.2 of VMP. No prescribed burns have been established and as such no SFMZ have been implemented.	NA	Ecological burns should be carried out during the non-flowering periods of the flora species within the bushland (autumn). The occurrence of any threatened flora and fauna species may slightly alter the timing and extent of each burn. The timing of prescription burns within the SFMZ will be undertaken in accordance with the BMP. If a wildfire occurs within the SFMZs prior to the first hazard reduction burn being completed, the timing of the program will require further review.	On-site: undertaking site inspection of threatened species locations to confirm that ecological/prescribed burns have been undertaken in accordance with the approved BMP. Off-site: reviewing of documents relating to threatened species management, monitoring and bush fire management. Interviewing persons responsible for bush fire management. Determining if a wildfire has occurred within the SFMZs prior to the first hazard reduction burn being completed, which has necessitated the timing of the program to be review.	NA
24.1 Strategic Fire Management Zones i. Prescription The objective of these zones is to implement ecological hazard reduction burns to contribute towards conserving the species that occur in the Strategic Fire Management Zone whilst managing the fuel loads on the lands beyond the Asset Protection Zones.	Refer to Requirements 7.1 and 7.2 of VMP. No prescribed burns have been established and as such no SFMZ have been implemented.	NA	Strategic Fire Management Zones - Prescription The objective of these zones is to implement ecological hazard reduction burns to contribute towards conserving the species that occur in the Strategic Fire Management Zone whilst managing the fuel loads on the lands beyond the Asset Protection Zones.	On-site: undertaking site inspection of threatened species locations to confirm that ecological hazard reduction burns are contributing towards conserving the species that occur in the Strategic Fire Management Zone whilst managing the fuel loads on the lands beyond the Asset Protection Zones. Off-site: reviewing of documents relating to threatened species management, monitoring and bush fire management. Interviewing persons responsible for bush fire management to confirm ecological hazard reduction burns are being managed so as to contribute towards conserving the species that occur in the Strategic Fire Management Zone whilst managing the fuel loads on the lands beyond the Asset Protection Zones.	NA

24.2 Implement appropriate fire regimes and control the spread of unplanned fires which could otherwise result in species extinctions.	No controlled burns or accidental fires have occurred at the site since the BMP was developed.	NA	Implement appropriate fire regimes and control the spread of unplanned fires which could otherwise result in species extinctions.	Off-site: reviewing of documents relating to threatened species management, monitoring and bush fire management and interviewing persons responsible for bush fire management to confirm that appropriate fire regimes have been implemented and the spread of unplanned fires which could otherwise result in species extinctions are controlled.	NA
24.3 Ecological burns should be carried out during the non-flowering periods of the flora species within the bushland (autumn).	Refer to Requirements 7.1 and 7.2 of VMP. No prescribed burns have been established and as such no ecological burns have been implemented.	NA	Carry out ecological burns during the non-flowering periods of the flora species within the bushland (autumn).	Off-site: reviewing of documents relating to threatened species management, monitoring and bush fire management and interviewing persons responsible for bush fire management to confirm that ecological burns are being carried out during the non-flowering periods of the flora species within the bushland (autumn).	NA
24.4 The occurrence of any threatened flora and fauna species may slightly alter the timing and extent of each burn.	Refer to Requirements 7.1 and 7.2 of VMP. No prescribed burns have been established.	NA	Alter time of burns in accordance with presence of any threatened flora and fauna species.	Off-site: reviewing of documents relating to threatened species management, monitoring and bush fire management and interviewing persons responsible for bush fire management to confirm that consideration has been given to the occurrence of any threatened flora and fauna species which may slightly alter the timing and extent of each burn.	NA
24.5 The Strategic Fire Management Zones have been broken into separate hazard reduction precincts which form part of the overall land management strategy.	Refer to Requirements 7.1 and 7.2 of VMP. No prescribed burns have been established and as such no SFMZ have been implemented.	NA	Carry out ecological burns , where appropriate, in accordance with Strategic Fire Management Zones have been broken into separate hazard reduction precincts which form part of the overall land management strategy	Off-site: reviewing of documents relating to threatened species management, monitoring and bush fire management and interviewing persons responsible for bush fire management to confirm that the Strategic Fire Management Zones have been broken into separate hazard reduction precincts which form part of the overall land management strategy.	NA
24.6 These separate hazard reduction precincts provide a guide to the implementation of rotation burning which will conserve and enhance ecological processes within the vegetation communities.	Refer to Requirements 7.1 and 7.2 of VMP. No prescribed burns have been established and as such no SFMZ have been implemented.	NA	Carry out ecological burns , where appropriate, in accordance with the separate hazard reduction precincts which provide a guide to the implementation of rotation burning which will conserve and enhance ecological processes within the vegetation communities.	Off-site: reviewing of documents relating to threatened species management, monitoring and bush fire management and interviewing persons responsible for bush fire management to confirm that these separate hazard reduction precincts provide a guide to the implementation of rotation burning in order to conserve and enhance ecological processes within the vegetation communities.	NA
24.7 Table 5.11 of the BMP, entitled "Timing of Hazard Reduction Burns within the Strategic Fire Management Zones" provides details of ecological burns within the SFMZs. The schedule is based on the first hazard reduction burn being undertaken in 2011.	Refer to Requirements 7.1 and 7.2. As no reduction burn was undertaken in 2011 the current schedule of hazard reduction burns in Table 5.11 has not been implemented. Recommendation: Recommendation: Review table 5.11 of the BMP and the schedule of hazard reduction burns in consultation with appropriate fire authority.	NA	Carry out ecological burns , where appropriate, in accordance with Table 5.11 of the BMP based on the first hazard reduction burn being undertaken in 2011.	Off-site: reviewing of documents relating to threatened species management, monitoring and bush fire management and interviewing persons responsible for bush fire management to confirm that the schedule for Hazard Reduction Burns within the Strategic Fire Management Zones was based on the first hazard reduction burn being undertaken in 2011 and that ecological burns within the SFMZs are undertaken in accordance with Table 5.11 of the approved BMP, entitled "Timing of Hazard Reduction Burns within the Strategic Fire Management Zones".	NA
24.8 Timing of the Hazard Reduction Burns within the Strategic Fire Management Zones are to be in accordance with Table 5.11 of the BMP.	Refer to Requirements 7.1 and 7.2. As no reduction burn was undertaken in 2011 the current schedule of hazard reduction burns in Table 5.11 has not been implemented. Recommendation: Review table 5.11 of the BMP and the schedule of hazard reduction burns in consultation with appropriate fire authority.	NA	Timing of the Hazard Reduction Burns within the Strategic Fire Management Zones are to be in accordance with Table 5.11 of the BMP.	Off-site: reviewing of documents relating to bush fire management i.e. timing program and interviewing persons responsible for bush fire management to confirm that the timing of the Hazard Reduction Burns within the Strategic Fire Management Zones are in accordance with Table 5.11 of the approved BMP.	NA
24.9 If a wildfire occurs within the SFMZs prior to the first hazard reduction burn being completed, the timing of the program will require further review.	Refer to Requirements 7.1 and 7.2 of VMP. No prescribed burns have been established and as such no SFMZ have been implemented.	NA	Review timing program if a wildfire occurs within the SFMZs prior to the first hazard reduction burn being completed.	Off-site: reviewing of documents relating to bush fire management i.e. timing program and interviewing persons responsible for bush fire management to confirm that if a wildfire has occurred within the SFMZs prior to the first hazard reduction burn being completed, the timing of the program was reviewed accordingly.	NA
24.10 Note 1: Once the program has been completed, the rotation can be restarted.	Refer to Requirements 7.1 and 7.2 of VMP. No prescribed burns have been established and as such no SFMZ have been implemented.	NA	Start rotation once the program has been completed	Off-site: reviewing of documents relating to threatened species management, monitoring and bush fire management and interviewing persons responsible for bush fire management to confirm that the rotation is restarted once the program has been completed.	NA
24.11 Note 2: It is recommended that a burn plan for each burn precinct be prepared prior to the implementation of hazard reduction burning. A burn plan will identify the timing of burn, weather conditions, ignition points, containment lines, fire fighting resources and specific burn objectives (i.e. retained fuel loadings) and burn methods in order to protect threatened species – e.g. Powerful Owl nesting tree.	Refer to Requirements 6.0, 7.1 and 7.2 of VMP. No Burn plan has been cited however ACA have consulted with the appropriate fire authorities in preparatory planning for a hazard reduction burn. As no burn has been undertaken to date are not in breach of this recommendation.	NA	Recommended that a burn plan for each burn precinct be prepared prior to the implementation of hazard reduction burning. A burn plan will identify the timing of burn, weather conditions, ignition points, containment lines, fire fighting resources and specific burn objectives (i.e. retained fuel loadings) and burn methods in order to protect threatened species – e.g. Powerful Owl nesting tree.	Off-site: reviewing of burn plans where appropriate to confirm that: a burn plan for each burn precinct has been prepared prior to the implementation of hazard reduction burning; a burn plan identifies the timing of burn, weather conditions, ignition points, containment lines, fire fighting resources and specific burn objectives (i.e. retained fuel loadings) and burn methods in order to protect threatened species – e.g. Powerful Owl nesting tree.	NA

Fire Management Plan - Condition 25	**5.6 Fire Management Strategies:** **5.6.4 Heritage Management Zone** **The riparian corridors to Coups Creek [and tributary], Lane Cove River and the watercourse in the south-eastern section of the Estate have been identified as a Heritage Management Zone [HMZ] and no prescribed burning / hazard management is to be undertaken in these corridors. Wildfires shall be prevented from entering this corridor, where it is practicable and safe to do so.**				
25.0 No prescribed burning / hazard management is to be undertaken in the Heritage Management Zone. Wildfires shall be prevented from entering this corridor, where it is practicable and safe to do so.	Refer to Requirements 6.0, 7.1 and 7.2 of VMP. No Burn plan has been cited however ACA have consulted with the appropriate fire authorities in preparatory planning for a hazard reduction burn. As no burn has been undertaken to date are not in breach of this recommendation.	NA	No prescribed burning / hazard management is to be undertaken in the Heritage Management Zone. Wildfires shall be prevented from entering this corridor, where it is practicable and safe to do so.	On-site: undertaking site inspection of Heritage Management Zone to confirm that no prescribed burning / hazard management has been undertaken in the Heritage Management Zone and that wildfires have been prevented from entering this corridor, where it has been practicable and safe to do so.	NA
25.1 The riparian corridors to Coups Creek [and tributary], Lane Cove River and the watercourse in the south-eastern section of the Estate have been identified as a Heritage Management Zone [HMZ] and no prescribed burning / hazard management is to be undertaken in these corridors.	Refer to Requirements 6.0, 7.1 and 7.2 of VMP. No Burn plan has been cited however ACA have consulted with the appropriate fire authorities in preparatory planning for a hazard reduction burn. As no burn has been undertaken to date are not in breach of this recommendation.	NA	Undertake no prescribed burns to be undertaken in the riparian corridors to Coups Creek [and tributary], Lane Cove River and the watercourse in the south-eastern section of the Estate have been identified as a Heritage Management Zone [HMZ].	On-site: undertaking site inspection of Heritage Management Zone in riparian corridors to confirm that the riparian corridors to Coups Creek [and tributary], Lane Cove River and the watercourse in the south-eastern section of the Estate have been identified as a Heritage Management Zone [HMZ] and no prescribed burning / hazard management has been undertaken in these corridors.	NA
25.2 Wildfires shall be prevented from entering this corridor, where it is practicable and safe to do so.	Refer to Requirements 6.0, 7.1 and 7.2 of VMP. No Burn plan has been cited however ACA have consulted with the appropriate fire authorities in preparatory planning for a hazard reduction burn. As no burn has been undertaken to date are not in breach of this recommendation.	NA	Prevent wildfires from entering this corridor, where it is practicable and safe to do so.	On-site: undertaking site inspection of Heritage Management Zone to confirm that, if applicable, wildfires have been prevented from entering the riparian corridors, where it has been practicable and safe to do so. Off-site: reviewing documentation related to bush fire management and interviewing persons responsible for bush fire management to confirm that, if applicable, wildfires have been prevented from entering the riparian corridors, where it has been practicable and safe to do so.	NA
Fire Management Plan - Condition 26	**5.6 Fire Management Strategies:** **5.6.5 Access Roads, Fire Trails and Control Lines** **[Refer to Appendix E – Plan of Tracks, Trails & Control Lines].** **Appendix E – Plan of Tracks/Trails & Hand Lines provides the location of the existing access tracks within the Estate. The Walking Tracks which form part of the management requirements of this Fire Management Plan have been identified and form the 'edge' of fire management precincts.** **Appendix E also identifies the location of three existing 'strategic' access tracks which provide maintenance access into the vegetation areas of the Estate and which shall be maintained in perpetuity, unless their use is reviewed by the ACA and determined to be obsolete to their requirements.** **There is also a need to implement the construction of 'Control Lines' [temporary walking paths]. These will be constructed by hand as part of the preparation of the programmed hazard reduction burns and identified on the Tracks, Trails & Control Lines plan as Hand Lines [HL].** **Table 5.12 of the BMP provides a list of the strategic access trails, including their current condition and required works.** **These trails shall be inspected annually in July/August and maintenance works implemented before the commencement of the prescribed Bushfire Danger Period – [1st October – 31st March or otherwise as determined].**				

Table 5.12 STRATEGIC ACCESS TRACKS/FIRE TRAILS

Track Name	Location	Present Condition	Works Required	Annual Works	Comments
T1	From existing Tennis Court to eastern boundary	Fair – overgrown	Clearing & earthworks / drainage	Inspection in July/August – maintenance works completed by October	Work to be undertaken by ACA
T2	Runs along northern side of Coups Creek Tributary	Good	Maintenance	Inspection in July/August – maintenance works completed by October	Work to be undertaken by ACA
T3	Track within Water Main Easement – from Carpark to Coups Creek	Good	Maintenance	Inspection in July/August – maintenance works completed by October	Work to be undertaken by ACA
T4	Northern boundary of APZ 1	To be constructed	Clearing	Inspection in July/August – maintenance works completed by October	Work to be undertaken by ACA
Existing Walking tracks nominated on Appendix E	Various	Varies	Maintenance of existing nominated walking tracks to provide perimeter access to fire management zones	Inspection in July/August – maintenance works completed prior to hazard reduction works program	Work to be undertaken by ACA

26.0 The three existing 'strategic' access tracks (identified in Appendix E) shall be maintained in perpetuity, unless their use is reviewed by the ACA and determined to be obsolete to their requirements. The 'Control Lines' [temporary walking paths] will be implemented, constructed by hand as part of the preparation of the programmed hazard reduction burns and identified on the Tracks, Trails & Control Lines plan as Hand Lines [HL] and in accordance with the BMP. The strategic trails listed in Table 5.12 will be inspected annually in July/August maintenance works implemented before the commencement of the prescribed Bushfire Danger Period – [1st October – 31st March or otherwise as determined]	The annual reports state that the fire trails have been maintained through constant use and mulching. No other works have been required. All tracks inspected during the site audit were found to be maintained and in accordance with requirements of the BMP		The three existing 'strategic' access tracks (identified in Appendix E) shall be maintained in perpetuity, unless their use is reviewed by the ACA and determined to be obsolete to their requirements. The 'Control Lines' [temporary walking paths] will be implemented, constructed by hand as part of the preparation of the programmed hazard reduction burns and identified on the Tracks, Trails & Control Lines plan as Hand Lines [HL] and in accordance with the BMP. The strategic trails listed in Table 5.12 will be inspected annually in July/august maintenance works implemented before the commencement of the prescribed Bushfire Danger Period – [1st October – 31st March or otherwise as determined]	On-site: undertaking site inspection of access tracks to confirm that they are being maintained and control lines have been implemented and constructed by hand in accordance with the approved BMP. Off-site: reviewing documentation related to bush fire management and interviewing persons responsible for bush fire management to confirm that: mechanisms have been put in place to ensure that the three existing 'strategic' access tracks (identified in Appendix E) will be maintained in perpetuity; that access tracks are being maintained and control lines implemented and constructed by hand in accordance with the approved BMP; and the strategic trails listed in Table 5.12 are inspected annually in July/August maintenance works & implemented before the commencement of the prescribed Bushfire Danger Period – [1st October – 31st March or otherwise as determined].	Y
26.1 Appendix E – Plan of Tracks/Trails & Hand Lines provides the location of the existing access tracks within the Estate. The Walking Tracks which form part of the management requirements of this Fire Management Plan have been identified and form the 'edge' of fire management precincts.	All tracks inspected during the site audit were found to be maintained and in accordance with requirements of the BMP	Staff interviews, review of available documents	Appendix E – Plan of Tracks/Trails & Hand Lines provides the location of the existing access tracks within the Estate. The Walking Tracks which form part of the management requirements of this Fire Management Plan have been identified and form the 'edge' of fire management precincts.	On-site: undertaking site inspection of Access tracks and control lines.	Y

26.2 Appendix E also identifies the location of three existing 'strategic' access tracks which provide maintenance access into the vegetation areas of the Estate and which shall be maintained in perpetuity, unless their use is reviewed by the ACA and determined to be obsolete to their requirements.	No access or walking tracks have been closed.	Staff interviews, review of available documents	Maintain three existing 'strategic' access tracks and provide maintenance access into the vegetation areas of the Estate and in perpetuity, unless their use is reviewed by the ACA and determined to be obsolete to their requirements.	On-site: undertaking site inspection of Access tracks to confirm that they are being maintained in accordance with the approved BMP. Off-site: reviewing documentation related to bush fire management and interviewing persons responsible for bush fire management to confirm that mechanisms have been put in place to ensure that the three existing 'strategic' access tracks (identified in Appendix E) will be maintained in perpetuity and that access tracks are being maintained in accordance with the approved BMP.	Y
26.3 There is also a need to implement the construction of 'Control Lines' [temporary walking paths].	All tracks inspected during the site audit were found to be maintained and in accordance with requirements of the BMP. BMP 2012 notes Hand lines for Coupes Creek below SFMZ 14 and 15 have been defined, however "The above hand lines will not be cleared to bare ground for environmental reasons until needed for fire control. Further hand lines may not be necessary due to the close proximity of existing walking tracks that will serve the same purpose" BMP 2013 identifies Hand lines maintained in areas separating SFMZ 6 & 7 from SFMZ 3. This was not urgent due to the clear understorey across SFMZ 6 & SFMZ 7 which suffered high disturbance and clearing due to Ochna removal which deemed it deleterious to clear further for erosion considerations.		Implement the construction of 'Control Lines' [temporary walking paths].	On-site: undertaking site inspection of control lines to confirm that they have been implemented and constructed by hand in accordance with the approved BMP. Off-site: reviewing documentation related to bush fire management and interviewing persons responsible for bush fire management to confirm that control lines are being implemented and constructed by hand in accordance with the approved BMP.	Y
26.4 These 'Control Lines' will be constructed by hand as part of the preparation of the programmed hazard reduction burns and identified on the Tracks, Trails & Control Lines plan as Hand Lines [HL].	refer to 26.3		Construct 'Control Lines' by hand as part of the preparation of the programmed hazard reduction burns and identified on the Tracks, Trails & Control Lines plan as Hand Lines [HL].	On-site: undertaking site inspection of control lines to confirm that they have been constructed by hand as part of the preparation of the programmed hazard reduction burns and identified on the Tracks, Trails & Control Lines plan as Hand Lines [HL] in accordance with the approved BMP. Off-site: reviewing documentation related to bush fire management and interviewing persons responsible for bush fire management to confirm that control lines have been constructed by hand as part of the preparation of the programmed hazard reduction burns and identified on the Tracks, Trails & Control Lines plan as Hand Lines [HL] in accordance with the approved BMP.	Y
26.5 Table 5.12, entitled "Strategic Access Tracks/Fire Trails", provides a list of the strategic access trails, including their current condition and required works. These trails shall be inspected annually in July/August and maintenance works implemented before the commencement of the prescribed Bushfire Danger Period – [1st October – 31st March or otherwise as determined].	refer to 26.3. All fire trails were installed and maintained prior to July and August (BMP 2012). No evidence of trails being inspected annually in July/August is provided in annual reports, however its noted that weekly inspection by ground staff for maintenance occur.		Maintain access tracks in accordance with Table 5.12 of the BMP and Inspect tracks annually n July/August and maintenance works implemented before the commencement of the prescribed Bushfire Danger Period – [1st October – 31st March or otherwise as determined].	On-site: undertaking site inspection of Access tracks and control lines to confirm that Strategic Access Tracks/Fire Trails (Table 5.12), are inspected annually in July/August and maintenance works implemented before the commencement of the prescribed Bushfire Danger Period – [1st October – 31st March or otherwise as determined]. Off-site: reviewing documentation relating to records of track maintenance to confirm that Strategic Access Tracks/Fire Trails (Table 5.12), are inspected annually in July/August and maintenance works implemented before the commencement of the prescribed Bushfire Danger Period – [1st October – 31st March or otherwise as determined].	N

Fire Management Plan - Condition 27	**5.6 Fire Management Strategies:** **5.6.6 Monitoring** **The following ongoing monitoring shall be undertaken:** **• Establish sites to monitor fuel loadings in all Strategic Fire Management Zones and Heritage Management Zones;** **• In August, undertake annual inspection of the Asset Protection Zones Lot and the Strategic Fire Management Zone;** **• Establish sites in each vegetation community to monitor the effect of implemented fire management regimes on biodiversity;** **• Document the cause of unplanned fires and the effectiveness of the emergency response. This process of assessment will ensure that the occurrence of unplanned fires is reduced through adaptive management; and** **• Mapping of fire regime, both planned and unplanned wildfire is to be undertaken and kept up to date for annual fire management strategy implementation and burn cycle analysis. All elements of fire regime [intensity, frequency and seasonal occurrence] shall be recorded as well as species presence related to time since last burn.** **Note: Results of this monitoring program should be examined against the objectives of this Fire Management Plan. This will indicate whether management strategies have been effective in producing an ecologically based fire management programme for the vegetation within the site.**				
27.0 The following ongoing monitoring shall be undertaken: · Establish sites to monitor fuel loadings in all Strategic Fire Management Zones and Heritage Management Zones; · In August, undertake annual inspection of the Asset Protection Zones Lot and the Strategic Fire Management Zone; · Establish sites in each vegetation community to monitor the effect of implemented fire management regimes on biodiversity; · Document the cause of unplanned fires and the effectiveness of the emergency response; and · Mapping of fire regime, both planned and unplanned wildfire is to be undertaken and kept up to date for annual fire management strategy implementation and burn cycle analysis. All elements of fire regime [intensity, frequency and seasonal occurrence] shall be recorded as well as species presence related to time since last burn.	Monitoring for fuel loadings has not been undertaken. Recommendation - undertake fuel load inspections across the site as required by the BMP and revised management of APZ and SFMZ and hazard reduction burns to meet changes in monitored fuel loads in accordance with FMP.	Staff interviews	The following ongoing monitoring shall be undertaken:· Establish sites to monitor fuel loadings in all Strategic Fire Management Zones and Heritage Management Zones; · In August, undertake annual inspection of the Asset Protection Zones Lot and the Strategic Fire Management Zone; · Establish sites in each vegetation community to monitor the effect of implemented fire management regimes on biodiversity; · Document the cause of unplanned fires and the effectiveness of the emergency response; and · Mapping of fire regime, both planned and unplanned wildfire is to be undertaken and kept up to date for annual fire management strategy implementation and burn cycle analysis. All elements of fire regime [intensity, frequency and seasonal occurrence] shall be recorded as well as species presence related to time since last burn.	On-site: undertaking site inspection of monitoring locations to confirm that ongoing monitoring is being undertaken in accordance with the approved BMP. Off-site: reviewing documents relating to monitoring reports and maps of fire regimes to confirm that ongoing monitoring is being undertaken in accordance with the approved BMP.	N
27.1 The objectives of monitoring are to measure the effectiveness of management strategies in achieving the fuel management objectives of the Fire Management Plan. The following ongoing monitoring shall be undertaken:			The objectives of monitoring are to measure the effectiveness of management strategies in achieving the fuel management objectives of the Fire Management Plan. The following ongoing monitoring shall be undertaken:	On-site: undertaking site inspection of monitoring locations. Off-site: reviewing documents relating to monitoring reports and maps of fire regimes.	
27.1.1 Establish sites to monitor fuel loadings in all Strategic Fire Management Zones and Heritage Management Zones;	Refer to 27.0	NA	Establish sites to monitor fuel loadings in all Strategic Fire Management Zones and Heritage Management Zones.	On-site: undertaking site inspection of monitoring locations to confirm that sites to monitor fuel loadings in all Strategic Fire Management Zones and Heritage Management Zones have been established. Off-site: reviewing documents relating to monitoring reports to confirm that sites to monitor fuel loadings in all Strategic Fire Management Zones and Heritage Management Zones have been established.	N
27.1.2 In August, undertake annual inspection of the Asset Protection Zones Lot and the Strategic Fire Management Zone;	Refer to 27.0	NA	Undertake annual inspection of the Asset Protection Zones Lot and the Strategic Fire Management Zone in August.	On-site: undertaking site inspection of monitoring locations. Off-site: reviewing documents relating to monitoring reports to confirm that annual inspection of the Asset Protection Zones Lot and the Strategic Fire Management Zone are undertaken in August.	N
27.1.3 Establish sites in each vegetation community to monitor the effect of implemented fire management regimes on biodiversity;	Refer to 27.0	NA	Establish sites in each vegetation community to monitor the effect of implemented fire management regimes on biodiversity.	On-site: undertaking site inspection of monitoring locations to confirm that sites in each vegetation community have been established to monitor the effect of implemented fire management regimes on biodiversity. Off-site: reviewing documents relating to monitoring reports to confirm that sites in each vegetation community have been established to monitor the effect of implemented fire management regimes on biodiversity.	N

27.1.4 Document the cause of unplanned fires and the effectiveness of the emergency response. This process of assessment will ensure that the occurrence of unplanned fires is reduced through adaptive management; and	No un planned fires have occurred on the site.	NA	Document the cause of unplanned fires and the effectiveness of the emergency response. This process of assessment will ensure that the occurrence of unplanned fires is reduced through adaptive management.	Off-site: reviewing documents relating to bush fire management, unplanned fires and emergency response records to confirm that the cause of unplanned fires and the effectiveness of the emergency response are documented to ensure that the occurrence of unplanned fires is reduced through adaptive management.	NA
27.1.5 Mapping of fire regime, both planned and unplanned wildfire is to be undertaken and kept up to date for annual fire management strategy implementation and burn cycle analysis. All elements of fire regime [intensity, frequency and seasonal occurrence] shall be recorded as well as species presence related to time since last burn.	Refer to 27.0	NA	Undertake mapping of fire regime, both planned and unplanned wildfire and kept up to date for annual fire management strategy implementation and burn cycle analysis. All elements of fire regime [intensity, frequency and seasonal occurrence] shall be recorded as well as species presence related to time since last burn.	Off-site: reviewing documents relating to monitoring reports and maps of fire regimes to confirm that: mapping of fire regime, both planned and unplanned wildfire has been undertaken and kept up to date for annual fire management strategy implementation and burn cycle analysis; and all elements of fire regime [intensity, frequency and seasonal occurrence] have been recorded as well as species presence related to time since last burn.	NA
27.2 Note: Results of this monitoring program should be examined against the objectives of this Fire Management Plan. This will indicate whether management strategies have been effective in producing an ecologically based fire management programme for the vegetation within the site.	A review of monitoring results against the requirements of the BMP has not been undertaken, as fuel load monitoring has not been undertaken. Recommendation - undertake a review of fuel load monitoring results against the BMP, when monitoring has been undertaken.	Review of available documents	Examine results of the monitoring program against objectives of this Fire Management Plan. This will indicate whether management strategies have been effective in producing an ecologically based fire management programme for the vegetation within the site.	On-site: undertaking site inspection of monitoring locations to confirm whether management strategies have been effective in producing an ecologically based fire management programme for the vegetation within the site. Off-site: reviewing documents relating to monitoring reports and bush fire management to confirm that results of the monitoring program have been examined against the objectives of the Fire Management Plan to indicate whether management strategies have been effective in producing an ecologically based fire management programme for the vegetation within the site.	N

Fire Management Plan - Condition 28	**5.6 Fire Management Strategies:** **5.6.7 Enforcement** **The Australian Conference Association Ltd [ACA], or its successors, has an ongoing liability to ensure the management of the vegetation/lands within the Estate to prevent the build-up of combustible fuel.** **Section 63(2) of the Rural Fires Act requires that 'it is the duty of the owner or occupier (including Councils) of land to take the notified steps (if any) and any other practicable steps to prevent the occurrence of fires on, and to minimise the danger of the spread of fires on or from that land'.** **Also, Section 66(1) of the Rural Fires Act states that 'a hazard management officer, may, by notice in writing, require the owner or occupier [not being a public authority] of any land to carry out bush fire hazard reduction work specified in the notice on the land'.**				
28.0 Section 63(2) of the Rural Fires Act requires that 'it is the duty of the owner or occupier (including Councils) of land to take the notified steps (if any) and any other practicable steps to prevent the occurrence of fires on, and to minimise the danger of the spread of fires on or from that land'. Also, Section 66(1) of the Rural Fires Act states that 'a hazard management officer, may, by notice in writing, require the owner or occupier [not being a public authority] of any land to carry out bush fire hazard reduction work specified in the notice on the land'.	The approval holder has not been notified to take steps to prevent the occurrence of fires on, and to minimise the danger of the spread of fires on or from the site and the hazard management officer has not provided notice in writing to the approval holder requesting them to carry out bush fire hazard reduction work on the site.	NA	Section 63(2) of the Rural Fires Act requires that 'it is the duty of the owner or occupier (including Councils) of land to take the notified steps (if any) and any other practicable steps to prevent the occurrence of fires on, and to minimise the danger of the spread of fires on or from that land'. Also, Section 66(1) of the Rural Fires Act states that 'a hazard management officer, may, by notice in writing, require the owner or occupier [not being a public authority] of any land to carry out bush fire hazard reduction work specified in the notice on the land'.	On-site: undertaking site inspection of Estate to confirm that ongoing Fire Management Strategies are being undertaken in accordance with the approved BMP and Sections 63(2) and 66(1) of the Rural Fires Act. Off-site: reviewing of documentation relating to notifications of hazard reduction burns to relevant authorities to confirm that ongoing Fire Management Strategies are being undertaken in accordance with the approved BMP and Sections 63(2) and 66(1) of the Rural Fires Act.	NA
28.1 The Australian Conference Association Ltd [ACA], or its successors, has an ongoing liability to ensure the management of the vegetation/lands within the Estate to prevent the build-up of combustible fuel.	Refer to Requirements 28.0 above	NA	The Australian Conference Association Ltd [ACA], managing vegetation/lands within the Estate to prevent the build-up of combustible fuel.	On-site: undertaking site inspection of Estate to confirm that the Australian Conference Association Ltd [ACA] has been fulfilling their ongoing obligations in terms of their liability to ensure the management of the vegetation/lands within the Estate to prevent the build-up of combustible fuel. Off-site: reviewing of documentation relating to notifications of hazard reduction burns to relevant authorities to confirm that the Australian Conference Association Ltd [ACA] has been fulfilling their ongoing obligations in terms of their liability to ensure the management of the vegetation/lands within the Estate to prevent the build-up of combustible fuel.	NA
28.2 Section 63(2) of the Rural Fires Act requires that 'it is the duty of the owner or occupier (including Councils) of land to take the notified steps (if any) and any other practicable steps to prevent the occurrence of fires on, and to minimise the danger of the spread of fires on or from that land'.	Refer to Requirements 6.0, 7.1 and 7.2. The approval holder has not been notified to take steps to prevent the occurrence of fires on, and to minimise the danger of the spread of fires on or from the site and the hazard management officer has not provided notice in writing to the approval holder requesting them to carry out bush fire hazard reduction work on the site.	NA	Notify and undertake any other practicable steps to prevent the occurrence of fires on, and to minimise the danger of the spread of fires on or from that land.	Off-site: reviewing documents relating to records of notifying relevant authorities of hazard reduction burning and, if applicable, receipt of any notifications to take steps "to prevent the occurrence of fires on, and to minimise the danger of the spread of fires on or from that land'.	NA
28.3 Section 66(1) of the Rural Fires Act states that 'a hazard management officer, may, by notice in writing, require the owner or occupier [not being a public authority] of any land to carry out bush fire hazard reduction work specified in the notice on the land'.	Refer to Requirements 6.0, 7.1 and 7.2. The approval holder has not been notified to take steps to prevent the occurrence of fires on, and to minimise the danger of the spread of fires on or from the site and the hazard management officer has not provided notice in writing to the approval holder requesting them to carry out bush fire hazard reduction work on the site.	NA	Notify a hazard management officer, by notice in writing, to carry out bush fire hazard reduction work specified in the notice on the land.	Off-site: reviewing documents relating to notifications from a hazard management officer, if applicable, which required the owner or occupier of the project land to carry out specified bush fire hazard reduction work.	NA

Pest Management Plan - Condition 1	**6.4 Pest Control Methods:** **6.4.1 Plague Minnow** **A threat abatement plan has been prepared for the Plague Minnow by the DECC (NSW National Parks Wildlife Service, 2003), as this species is listed as a Key Threatening Process (KTP) under the TSC Act.** **The primary actions identified within the threat abatement plan to minimise the impact of this species are to:** **• Minimise human dispersal of the Plague Minnow through public education; and** **• Minimise the introduction of Plague Minnow into the natural environment.** **Humans have been the main mechanism in the spread of the Plague Minnow and it is essential that residents of the Wahroonga Estate do not dump aquarium fish in the streams of the E2 zone or stormwater devices.** **It is possible that the streams within the E2 zone and stormwater devices contain the Plague Minnow. Habitat free of the Plague Minnow can be created with the construction of detention basins, provided that waterways containing the species do not drain into them. Draining and drying out water bodies is a successful way of eradicating the Plague Minnow from wetland habitat if it has been introduced, therefore it would be beneficial if these detention basins were designed in such a way that they could be drained if Plague Minnows were found to colonize them at a later date.**				
1.0 Plague Minnow pest management - it is essential that residents of the Wahroonga Estate do not dump aquarium fish in the streams of the E2 zone or stormwater devices. Habitat free of the Plague Minnow can be created with the construction of detention basins, provided that waterways containing the species do not drain into them. It would be beneficial if these detention basins were designed in such a way that they could be drained if Plague Minnows were found to colonize them at a later date	Plague minnow has not been observed within the sites streams or dams which are considered to provide limited aquatic habitat. Residents of the aged care facility are to be provided with a leaflet outlining issues of pets on the bushland area.	Staff interviews	Plague Minnow pest management - it is essential that residents of the Wahroonga Estate do not dump aquarium fish in the streams of the E2 zone or stormwater devices. Habitat free of the Plague Minnow can be created with the construction of detention basins, provided that waterways containing the species do not drain into them. It would be beneficial if these detention basins were designed in such a way that they could be drained if Plague Minnows were found to colonize them at a later date	On-site: undertake site inspection of water bodies for presence of Plague Minnow. Off-site: reviewing documentation in regards to public education on Plague Minnow and records of management to reduce the species to confirm that pest control methods are being undertaken in accordance with the approved BMP.	Y
1.1 A threat abatement plan has been prepared for the Plague Minnow by the DECC (NSW National Parks Wildlife Service, 2003), as this species is listed as a Key Threatening Process (KTP) under the TSC Act. The primary actions identified within the threat abatement plan to minimise the impact of this species are to:			A threat abatement plan has been prepared for the Plague Minnow by the DECC (NSW National Parks Wildlife Service, 2003), as this species is listed as a Key Threatening Process (KTP) under the TSC Act. The primary actions identified within the threat abatement plan to minimise the impact of this species are to:		NA
1.1.1 Minimise human dispersal of the Plague Minnow through public education; and	ACA is currently developing leaflets outlining issues with dispersal of pest species, this is to be provided to local residents through community newsletters for the site, local schools and residents of the aged care facility.	Staff interviews	Minimise human dispersal of the Plague Minnow through public education.	On-site: undertake site inspection of water bodies for presence of Plague Minnow. Off-site: reviewing documentation in regards to public education on Plague Minnow to confirm that it includes requirements to "Minimise human dispersal of the Plague Minnow".	Y
1.1.2 Minimise the introduction of Plague Minnow into the natural environment.	Refer to requirements 1.0 and 1.1.1 above.	NA	Minimise the introduction of Plague Minnow into the natural environment.	On-site: undertake site inspection of water bodies for presence of Plague Minnow.	NA
1.2 Humans have been the main mechanism in the spread of the Plague Minnow and it is essential that residents of the Wahroonga Estate do not dump aquarium fish in the streams of the E2 zone or stormwater devices.	Refer to requirements 1.0 and 1.1.1 above.	NA	Maintain streams of the E2 zone or stormwater devices to prevent the dumping of aquarium fish and spread of Plague Minnow.	On-site: undertake site inspection of E2 Zone for presence of Plague Minnow. Off-site: reviewing documentation in regards to Plague Minnow to confirm that it includes measures to inform residents of the Wahroonga Estate that they must not dump aquarium fish in the streams of the E2 zone or stormwater devices.	NA
1.3 It is possible that the streams within the E2 zone and stormwater devices contain the Plague Minnow. Habitat free of the Plague Minnow can be created with the construction of detention basins, provided that waterways containing the species do not drain into them.	Refer to requirements 1.0 and 1.1.1 above. Detention basins have been constructed and where possible have they been constructed in such a way as to ensure that waterways which may contain the Plague Minnow do not drain into them.	NA	Construct habitat free of the Plague Minnow with the construction of detention basins, provided that waterways containing the species do not drain into them.	On-site: undertake site inspection of detention basins where appropriate and confirm that waterways containing the species do not drain into them. Off-site: reviewing documentation in regards to Plague Minnow to confirm that detention basins have been designed in such a way that waterways containing the species do not drain into them.	Y

1.4 Draining and drying out water bodies is a successful way of eradicating the Plague Minnow from wetland habitat if it has been introduced, therefore it would be beneficial if these detention basins were designed in such a way that they could be drained if Plague Minnows were found to colonize them at a later date.	Refer to requirements 1.0 and 1.1.1 above. Detention basins have been constructed and can be drained if required.	NA	Drain and dry out water bodies to eradicate Plague Minnow from wetland habitat if it has been introduced. Design detention basins in such a way that they could be drained if Plague Minnows were found to colonize them at a later date.	On-site: undertake site inspection of water bodies for presence of Plague Minnow and, if applicable, confirm that detention basins have been designed in such a way that they can be drained if Plague Minnows colonize them at a later date. Off-site: reviewing documentation in regards to Plague Minnow to confirm that detention basins have been designed in such a way that they can be drained if Plague Minnows colonize them at a later date.	Y
Pest Management Plan - Condition 2	**6.4 Pest Species:** **6.4.2 Bird Species:** **The increase of urban-aggressive feral bird species, including the Common Myna, can be minimised by reducing feeding opportunities for these species and promoting habitat for other native species.** **There are a number of actions that can be taken to minimise the impact of these species including:** **● Prevent access to food in rubbish bins by modifying the design or by ensuring that a lid is attached and used; and** **● Avoid providing nectar resources within landscaping such as Callistemon and hybrid Grevillea.** **Common Starlings, House Sparrows, Spotted Turtle Doves, Rock Doves, Red-whiskered Bulbul are widespread and common species; therefore damage control is best accomplished by targeting problem areas. The best management strategy is to reduce numbers of these bird species by decreasing access to nesting, roosting and food and water resources through habitat modification. For example, avoiding planted species such as Callistemon and Hybrid Grevillea as part of landscaping can reduce food sources for the Noisy Miner. Populations can also be controlled to a degree by minimising habitat availability through the creation of structurally complex vegetation communities, as introduced species typically thrive in open vegetation. Signage should be erected to inform the general public not to feed birds in or near the E2 zone.**				
2.0 Pest Bird species management - actions that can be taken to minimise the impact of these species includes: · Prevent access to food in rubbish bins by modifying the design or by ensuring that a lid is attached and used; and · Avoid providing nectar resources within landscaping such as Callistemon and hybrid Grevillea. -Signage should be erected to inform the general public not to feed birds in or near the E2 zone.	No visible evidence of scattered rubbish was observed around bins provided within the areas inspected by the site audit, and ACA have confirmed lids are on all bins. Nectar producing resources were observed in adjoining properties surrounding the site however no new plantings of callistemon or grevillea species were observed during site audit. No signs containing information on feeding birds were found	Site inspection	Pest Bird species management - actions that can be taken to minimise the impact of these species includes:· Prevent access to food in rubbish bins by modifying the design or by ensuring that a lid is attached and used; and · Avoid providing nectar resources within landscaping such as Callistemon and hybrid Grevillea. -Signage should be erected to inform the general public not to feed birds in or near the E2 zone.	On-site: undertaking site inspection of Estate to determine presence of pest bird species and management actions undertaken. Off-site: reviewing documents to confirm that pest control methods are being undertaken in accordance with the approved BMP.	N
2.1 There are a number of actions that can be taken to minimise the impact of these species including:	Refer to Requirement 2.0	NA	There are a number of actions that can be taken to minimise the impact of these species including:		NA
2.1.1 Prevent access to food in rubbish bins by modifying the design or by ensuring that a lid is attached and used; and	Refer to Requirement 2.0	NA	Prevent access to food in rubbish bins by modifying the design or by ensuring that a lid is attached and used.	On-site: undertaking site inspection of bins to confirm that access to food in rubbish bins is being prevented by modifying the design or by ensuring that a lid is attached and used.	Y
2.1.2 Avoid providing nectar resources within landscaping such as Callistemon and hybrid Grevillea.	Refer to Requirement 2.0	NA	Avoid providing nectar resources within landscaping such as Callistemon and hybrid Grevillea.	On-site: undertaking site inspection of Estate to confirm that nectar resources within landscaping are not provided by avoiding species such as Callistemon and hybrid Grevillea	Y
2.2 Common Starlings, House Sparrows, Spotted Turtle Doves, Rock Doves, Red-whiskered Bulbul are widespread and common species; therefore damage control is best accomplished by targeting problem areas including:	Refer to Requirement 2.0	NA	Common Starlings, House Sparrows, Spotted Turtle Doves, Rock Doves, Red-whiskered Bulbul are widespread and common species; therefore damage control is best accomplished by targeting problem areas including:		NA
2.2.1 Reduce numbers of these bird species by decreasing access to nesting, roosting and food and water resources through habitat modification.	Refer to Requirement 2.0. In additional the revegetation works and modification of surrounding vegetation to remove weed species undertaken throughout the site is considered to reduce these species habitat.	NA	Reduce numbers of these bird species by decreasing access to nesting, roosting and food and water resources through habitat modification.	On-site: undertaking site inspection of site to confirm that access to nesting, roosting, food and water resources are limited through habitat modification to reduce the number offset bird species. Off-site: reviewing documentation relating to ecological monitoring for changes in species composition.	Y
2.2.2 Minimising habitat availability through the creation of structurally complex vegetation communities, as introduced species typically thrive in open vegetation.	On-site audit found the vegetation management and regeneration areas are progressing towards structurally complex communities with a diversity of species. Areas of APZ are the noticeable exception	Site inspection	Minimising habitat availability through the creation of structurally complex vegetation communities, as introduced species typically thrive in open vegetation.	On-site: undertaking site inspection of vegetation and undertaking 20 X 20m BioBanking quadrat to determine structural complexity to confirm that habitat availability as been minimised through the creation of structurally complex vegetation communities.	Y

2.2.3 Signage should be erected to inform the general public not to feed birds in or near the E2 zone.	While a range of signage was observed, no signs containing information on feeding the birds were found. ACA reported that several 'Do not feed native birds' signs have been erected between the aged care facility and the bush. It is noted that the requirement for such signage extends across the site and therefore compliance with this requirement has not been met. Recommendation - install signage informing the general public not to feed the birds throughout the site.	Site inspection	Erect signage to inform the general public not to feed birds in or near the E2 zone.	On-site: undertaking site inspection of signage in E2 Zone to confirm that signage has been erected to inform the general public not to feed birds in or near the E2 zone.	N
Pest Management Plan - Condition 3	**6.4 Pest Species:** **6.4.3 Rodents** **Rubbish should not be left uncovered within the development area, but contained within closed bins. If managed correctly a small increase in introduced rodents should not significantly impact upon native species in the E2 zone through competition or by attracting and supporting predators in the area.** **If rodents do become a problem in the developed areas, a baiting program may need to be implemented; however this is not warranted at the present.**				
3.0 Rodent pest management - Rubbish should not be left uncovered within the development area, but contained within closed bins. A baiting program may need to be implemented in the E2 zone if rodents become problematic.	Refer to Requirement 2.0 above. No evidence of rodents being a problem was identified or a baiting program been undertaken.	NA	Rodent pest management - Rubbish should not be left uncovered within the development area, but contained within closed bins. A baiting program may need to be implemented in the E2 zone if rodents become problematic.	On-site: undertaking a site inspection of Estate and baiting locations to confirm that pest control methods are being undertaken in accordance with the approved BMP. Off-site: reviewing of documents relating to baiting program, where applicable to confirm that pest control methods are being undertaken in accordance with the approved BMP.	Y
3.1 Rubbish should not be left uncovered within the development area, but contained within closed bins.	Refer to Requirement 2.0 above.	NA	Rubbish should not be left uncovered within the development area, but contained within closed bins.	On-site: undertaking a site inspection of Estate bins to confirm that rubbish is not being left uncovered within the development area, but is contained within closed bins.	Y
3.2 If rodents do become a problem in the developed areas, a baiting program may need to be implemented.	Refer to Requirement 2.0 and 3.0 above.	NA	Implement a baiting program if rodents do become a problem in the developed areas.	On-site: undertaking a site inspection of Estate and baiting locations to confirm that if rodents have become a problem in the developed areas, a baiting program has been implemented. Off-site: reviewing of documents relating to baiting program, where applicable to confirm that if rodents have become a problem in the developed areas, a baiting program has been implemented.	NA

Pest Management Plan - Condition 4	**6.4 Pest Species:** **6.4.4 European Red Fox** **Predation by the European Red Fox is listed as a Key Threatening Process (KTP) under the TSC Act and the EPBC Act. Following this listing, DECC prepared a Threat Abatement Plan (TAP) to propose actions to reduce the impacts of fox predation on threatened species. This plan establishes priorities for fox control, effective control programs and provides methods to measure the response of native fauna to fox control (Biodiversity Group EA, 1999c).** **While foxes are likely to occur in the E2 zone, they are unlikely to have a sufficient impact on native fauna to warrant baiting. This may also be problematic due to the proximity to residential areas and the possibility of domestic dogs taking baits. Therefore, management strategies recommended for the subject site relate to minimising impacts through non-lethal methods, as this is the most suitable and cost effective approach.** **A suitable method for discouraging and decreasing the impact of foxes is through habitat manipulation. This entails modifying the habitat so that the habitat is less favourable for foxes. Ensuring that the canopy is continuous so that arboreal species do not have to leave trees to forage will help reduce the impact of foxes on threatened arboreal species.**				
4.1 Feral European red fox management - A suitable method for discouraging and decreasing the impact of foxes is through habitat manipulation. This entails modifying the habitat so that the habitat is less favourable for foxes.	On-site audit found the vegetation management and regeneration areas are progressing towards containing continuous canopy (which is less favourable for foxes) in accordance with the BMP. Areas of APZ are the noticeable exception	Site inspection	Feral European red fox management - A suitable method for discouraging and decreasing the impact of foxes is through habitat manipulation. This entails modifying the habitat so that the habitat is less favourable for foxes.	On-site: undertaking a site inspection of fox management methods to confirm that habitat has been modified so that habitat is less favourable for foxes - for example, by ensuring that the canopy is continuous so that arboreal species do not have to leave trees to forage etc. Off-site: reviewing of documents in the nature of monitoring programs and fox management strategies to confirm that habitat has been modified so that the habitat is less favourable for foxes - for example, by ensuring that the canopy is continuous so that arboreal species do not have to leave trees to forage etc.	Y
Pest Management Plan - Condition 5	**6.4 Pest Species:** **6.4.5 Feral Cats** **Predation by Feral Cats is listed as a Key Threatening Process (KTP) under the TSC Act and the EPBC Act. A Threat Abatement Plan (TAP) has been prepared on predation by feral cats by the Department of the Environment and Heritage (now the Department of the Environment, Water, Heritage and the Arts) (Biodiversity Group EA, 1999b). This document provides information on feral cat control programs, development of innovative and humane control methods and education of land managers and other about feral cat impacts.** **Feral cats are likely to exist in the E2 zone and surrounding developed lands. There are a number of control methods that may be utilised to reduce cat numbers. The recommended method to reduce the impact of feral cats on threatened species is to discourage cats from the E2 zone by ensuring that there are no potential food sources available. Rubbish should not be left uncovered within the development area, but contained within closed bins. Other initiatives may include education regarding desexing pet cats and encouraging residents to keep cats indoors at night.**				
5.0 Feral cat management - The recommended method to reduce the impact of feral cats on threatened species is to discourage cats from the E2 zone by ensuring that there are no potential food sources available. Rubbish should not be left uncovered within the development area, but contained within closed bins. Other initiatives may include education regarding desexing pet cats and encouraging residents to keep cats indoors at night.	Refer to Requirement 2.0 above.	NA	Feral cat management - The recommended method to reduce the impact of feral cats on threatened species is to discourage cats from the E2 zone by ensuring that there are no potential food sources available. Rubbish should not be left uncovered within the development area, but contained within closed bins. Other initiatives may include education regarding desexing pet cats and encouraging residents to keep cats indoors at night.	On-site: undertaking a site inspection of feral cat management methods to confirm that pest control methods are being undertaken in accordance with the approved BMP. Off-site: reviewing of documents in the nature of monitoring programs and cat management strategy to confirm that pest control methods are being undertaken in accordance with the approved BMP.	Y

5.1 Feral cats are likely to exist in the E2 zone and surrounding developed lands. There are a number of control methods that may be utilised to reduce cat numbers. The recommended method to reduce the impact of feral cats on threatened species is to discourage cats from the E2 zone by ensuring that there are no potential food sources available. Rubbish should not be left uncovered within the development area, but contained within closed bins.	Refer to Requirement 2.0 above	NA	Discourage cats from the E2 zone by ensuring that there are no potential food sources available. Rubbish should not be left uncovered within the development area, but contained within closed bins.	On-site: undertaking a site inspection of feral cat management methods to confirm that the impact of feral cats on threatened species is being reduced by: discouraging cats from the E2 zone by ensuring that there are no potential food sources available; and that rubbish is not being left uncovered within the development area, but is contained within closed bins. Off-site: reviewing of documents in the nature of monitoring programs and cat management strategy.	Y
5.2 Other initiatives may include:			Other initiatives may include:		
5.2.1 Education regarding desexing pet cats; and	Pets are not allowed to be kept within the aged care facility, so this is generally not an issue. ACA is currently developing leaflets outlining issues with dispersal of pest species, this is to be provided to local residents through community newsletters for the site, local schools and residents of the aged care facility. However as leaflets have not yet been developed and pets are permitted in residential areas of the estate.	Staff interviews	Education regarding desexing pet cats.	Off-site: reviewing documentation of education, where available, to confirm that educational programs and public awareness campaigns are being provided to residents regarding desexing pet cats.	N
5.2.2 Encouraging residents to keep cats indoors at night.	refer to 5.2.1 Pets are not allowed to be kept at the aged care facility, Pets are currently permitted in the residential facility. ACA is currently developing leaflets outlining issues with dispersal of pest species, including cats, this is to be provided to local residents through community newsletters for the site, local schools and residents of the aged care facility.	Staff interviews	Encouraging residents to keep cats indoors at night.	Off-site: reviewing documentation of education, where available, to confirm that residents are being encouraged to keep cats indoors at night.	N
Pest Management Plan - Condition 6	**6.4 Pest Species:** **6.4.6 Feral Dogs** **Wild or feral dogs include dingoes, domestic dogs living in the wild and hybrids (crosses between dingoes and wild dogs). While no feral dogs have been sighted at Wahroonga Estate, stray dogs do occur from time to time and may reside on the subject lands periodically. The impact of stray dogs on native fauna within the E2 zone is expected to be relatively small and there are very few ground-dwelling native fauna that are likely to function as prey species for dogs.** **The recommended action for decreasing the impact of stray dogs on native prey species is to discourage dogs from the area by limiting the food supply to prevent scavenging. Rubbish should not be left uncovered within the development area, but contained within closed bins.**				
6.1 Feral dog management - The recommended action for decreasing the impact of stray dogs on native prey species is to discourage dogs from the area by limiting the food supply to prevent scavenging. Rubbish should not be left uncovered within the development area, but contained within closed bins.	Refer to Requirement 2.0 above.	NA	Feral dog management - The recommended action for decreasing the impact of stray dogs on native prey species is to discourage dogs from the area by limiting the food supply to prevent scavenging. Rubbish should not be left uncovered within the development area, but contained within closed bins.	On-site: undertaking a site inspection of feral dog management methods to confirm that dogs are being discouraged from the area by limiting the food supply to prevent scavenging and not leaving rubbish uncovered within the development area, but containing it within closed bins. Off-site: reviewing of documents in the nature of monitoring programs and dog management strategies to confirm that dogs are being discouraged from the area by limiting the food supply to prevent scavenging and not leaving rubbish uncovered within the development area, but containing it within closed bins.	Y

Pest Management Plan - Condition 7	**6.5 Community Education:** **A key component to minimising potential impacts of feral and domestic animals on the native species of the E2 zone will be community education. It is essential to educate the community of the potential impacts of feral and domestic animals and of their responsibilities to minimise these impacts.** **Information packs should be provided to all new residents and an ongoing campaign of community education will be actively promoted. This may take the form of information displays, hand out literature and website information. Education and awareness programs on feral and domestic animal management should be implemented within the Wahroonga Estate in conjunction with other programs concerning flora and fauna and weeds. Residents should be educated about the risk to native fauna from stray dogs, and will be encouraged to report any stray dogs to the Council so that they may be collected and removed from the area. Residents will be informed to keep their own dogs contained at all times and to avoid taking them off the leash while in or near the E2 zone. Residents will be informed to keep their cats indoors at night to avoid impacts of from predation on native fauna.** **Educational programs concerning ecological issues in the E2 zone (including domestic and feral animals) will be made available as pamphlets and distributed during induction courses.**				
7.0 Community information - Information packs should be provided to all new residents and an ongoing campaign of community education will be actively promoted. Education and awareness programs on feral and domestic animal management should be implemented within the Wahroonga Estate in conjunction with other programs concerning flora and fauna and weeds. Residents should be educated about the risk to native fauna from stray dogs, and will be encouraged to report any stray dogs to the Council. Residents will be informed to keep their own dogs contained at all times and to avoid taking them off the leash while in or near the E2 zone. Residents will be informed to keep their cats indoors at night to avoid impacts of from predation on native fauna. Educational programs concerning ecological issues in the E2 zone (including domestic and feral animals) will be made available as pamphlets and distributed during induction courses.	A community information pack has not been developed and is not provided to residents of the aged care facility. Age Care residents are not allowed to keep dogs or cats and hence the risks associated with their pets is minimal. Signage is installed around the site to inform visitors and users of the area about ecological issues. Recommendation - develop and implement a community education pack to be provided to new residents, highlighting issues risks to adjacent bushland areas from their actions.	Staff interviews, review of available documents	Community information - Information packs should be provided to all new residents and an ongoing campaign of community education will be actively promoted. Education and awareness programs on feral and domestic animal management should be implemented within the Wahroonga Estate in conjunction with other programs concerning flora and fauna and weeds. Residents should be educated about the risk to native fauna from stray dogs, and will be encouraged to report any stray dogs to the Council. Residents will be informed to keep their own dogs contained at all times and to avoid taking them off the leash while in or near the E2 zone. Residents will be informed to keep their cats indoors at night to avoid impacts of from predation on native fauna. Educational programs concerning ecological issues in the E2 zone (including domestic and feral animals) will be made available as pamphlets and distributed during induction courses.	Off-site: reviewing documents relating to education packs and interviewing persons responsible for development of information packs to confirm that community education is being undertaken in accordance with the approved BMP.	N
7.1 Information packs should be provided to all new residents.	Refer to Requirement 7.0	NA	Information packs should be provided to all new residents.	On-site: Interviewing residents, if applicable, to confirm that information packs have been provided to all new residents. Off-site: reviewing documents relating to education packs and interviewing persons responsible for development of information packs to confirm that information packs are being provided to all new residents.	N
7.2 An ongoing campaign of community education will be actively promoted. This may include:	The audit found that the bushland team undertakes a number of community consultation activities, including dissemination of a community newsletter for the Wahroonga Waterways Landcare, which operates at the site and is lead by the ACA bushland team. The Landcare group also operates a website and Facebook page and appears to be highly engaged with the local community. The Landcare group and bushland team involve a number of schools from northern Sydney in bushcare activities at the site and these are documented in the annual reports. The auditors saw abundant evidence of school and community involvement with bushcare activities at the site. Other community groups are also involved with bushcare activities, such as groups from the Sydney Adventist Church. Other methods of educating the community observed during the audit include: A community noticeboard at the Elizabeth Street entrance to the site and other signage throughout the site.	Staff interviews, site inspection, review of available documentation	An ongoing campaign of community education will be actively promoted. This may include:		Y
7.2.1 Information displays;	A range of signage was observed containing information on the sites BMP, biodiversity and general information	Staff interviews, site inspection, review of available documentation	Information displays.	On-site: undertaking site inspection of site to confirm presence of information displays if applicable. Off-site: reviewing information displays.	Y
7.2.2 Hand out literature; and	A community newsletter is distributed by ACA for the Wahroonga Waterways Landcare group.	Staff interviews,, reviews of available documents	Hand out literature.	Off-site: reviewing hand out literature.	Y
7.2.3 Website information.	The Wahroonga Waterways Landcare group is operated by ACA's bushland team and was found to contain a range of information relevant to the site.	Staff interviews,, reviews of available documents	Website information.	Off-site: reviewing website information.	Y

7.3 Education and awareness programs on feral and domestic animal management should be implemented within the Wahroonga Estate in conjunction with other programs concerning flora and fauna and weeds.	Refer to 7.0 A range of signage was observed containing information on the sites BMP, biodiversity and general information, including school planting and information education. This information includes specific information on feral and domestic animal management and flora, fauna and weed programs across the site.	Site inspection	Implement education and awareness programs on feral and domestic animal management in conjunction with other programs concerning flora and fauna and weeds.	On-site: undertaking site inspection of the site to confirm the presence of education and awareness programs on feral and domestic animal management within the Wahroonga Estate in conjunction with other programs concerning flora and fauna and weeds, if applicable. Off-site: reviewing documents relating to education programs and interviewing persons responsible for development of education and awareness programs to confirm that education and awareness programs on feral and domestic animal management are being implemented within the Wahroonga Estate in conjunction with other programs concerning flora and fauna and weeds.	Y
7.4 Residents should be educated about the risk to native fauna from stray dogs, and will be encouraged to report any stray dogs to the Council so that they may be collected and removed from the area.	Refer to Requirement 7.0 and 7.3 above. No specific education for the risk to native fauna from stray dogs, or reporting of stray dogs to the Council has occurred	NA	Educate residents about the risk to native fauna from stray dogs, and will be encouraged to report any stray dogs to the Council so that they may be collected and removed from the area.	Off-site: reviewing documents relating to education programs and interviewing persons responsible for development of education and awareness to confirm that residents are being educated about the risk to native fauna from stray dogs, and are encouraged to report any stray dogs to the Council so that they are collected and removed from the area.	N
7.5 Residents will be informed to keep their own dogs contained at all times and to avoid taking them off the leash while in or near the E2 zone.	Refer to Requirement 7.0 and 7.3 above.	NA	Inform residents to keep their own dogs contained at all times and to avoid taking them off the leash while in or near the E2 zone.	Off-site: reviewing documents relating to education programs and interviewing persons responsible for development of education and awareness to confirm that residents are informed to keep their own dogs contained at all times and to avoid taking them off the leash while in or near the E2 zone.	N
7.6 Residents will be informed to keep their cats indoors at night to avoid impacts from predation on native fauna.	Refer to Requirement 7.0 and 7.3 above.		Inform residents to keep their cats indoors at night to avoid impacts of from predation on native fauna.	Off-site: reviewing documents relating to education programs and interviewing persons responsible for development of education and awareness to confirm that residents are informed to keep their cats indoors at night to avoid impacts from predation on native fauna.	N
7.7 Educational programs concerning ecological issues in the E2 zone (including domestic and feral animals) will be made available as pamphlets and distributed during induction courses.	Refer to Requirement 7.0 and 7.3 above.		Provide educational programs concerning ecological issues in the E2 zone (including domestic and feral animals) as pamphlets and distributed during induction courses.	Off-site: reviewing documents relating to education programs and interviewing persons responsible for development of education and awareness to confirm that educational programs concerning ecological issues in the E2 zone (including domestic and feral animals) are made available as pamphlets and distributed during induction courses.	N

Habitat Corridor and Linkages Management Plan - Condition 1	**7.2 Ecological Corridors:** **7.2.1 Suitability of Corridors** **There are several factors that determine the suitability of vegetation to act as a corridor, and these are discussed below.** **i. Type and Quality of Habitat** **To function effectively as an ecological corridor, vegetation within the corridor needs to provide the habitat and particular resources required by all species dependant on the corridor. For example, some species may require thick patches of dense understorey or ground cover, others may require logs and litter for foraging and shelter, and others still may require tree hollows for refuge and nesting. The E2 zone includes all of the above mentioned habitat features.** **ii. Potential for Edge Effects** **Development adjacent to ecological corridors has the potential to increase the vulnerability of the corridors to disturbance along edges. Edge effects will influence the diversity and type of fauna that will live in the corridor. Some species thrive with disturbance, while other more specialist species will be affected by change. The pest and weed management plan will reduce edge effects along the E2 zone.** **iii. Animal Mobility** **The relative mobility of animals will influence the type and length of ecological corridor that they can use. For example, many birds will be able to fly over gaps in suitable vegetation communities and move substantial distances, whereas for small lizards, effective connectivity may require continuous suitable habitat.** **iv. Predation and Competition** **The presence of predators or competitors in an ecological corridor may inhibit movement, or impose an increased risk on mortality. Movement of introduced predators such as the Fox (Vulpes vulpes) or Cat (Felis catus) is often facilitated through the clearing of natural vegetation. Other native fauna species able to adapt to disturbed environments such as the Noisy Miner (Manorina melanocephala), often dominate narrow ecological corridors, discouraging other species from using them.**				
	v. Corridor Width **The necessary width of a useful corridor varies greatly among wildlife species. For example, small reptiles may utilise narrow corridors whereas larger animals such as kangaroos require wider areas for daily movement. In addition, the habitat retained within the corridor may not be suitable for all wildlife species, and therefore wider corridors are required to include several vegetation types. For example, a densely vegetated riparian corridor would be unlikely to support the dispersal of Koalas, which prefer a corridor of readily accessible trees. Conversely, sparsely vegetated woodland corridors would not be preferred by species such as the Swamp Wallaby (Wallabia bicolor), which prefers thick undergrowth.**				
1.1 Suitability of corridors - The pest and weed management plan will reduce edge effects along the E2 zone.	On-site site inspection of corridor edges confirmed that edge effects along the E2 zone are being reduced by bushcare activities.	Site inspection	Suitability of corridors - The pest and weed management plan will reduce edge effects along the E2 zone.	On-site: undertaking site inspection of corridor edges and assess edge impacts to confirm that edge effects along the E2 zone are being reduced.	Y
Habitat Corridor and Linkages Management Plan - Condition 2	**7.3 Habitat Corridors and Linkages of the Subject Land:** **The proposal will not result in any reduction in width for either of the ecological corridors within the subject land. The minimum width of the Coups Creek corridor within the subject land will remain 95m and the widest point within the subject land will remain 250m. The minimum widths of the Fox Valley Road corridor within the subject land will remain 120m in the north, and 135m in the south. The Fox Valley Road corridor is at its widest point within the subject land, and this will remain greater than 300m.** **Areas adjacent to ecological corridors within the subject land will be managed as Asset Protection Zones (APZs).** **The proposal is unlikely to significantly impact on the corridor values of the subject land, as all current corridors will be retained.**				
2.0 The proposal will not result in any reduction in width for either of the ecological corridors within the subject land. The minimum width of the Coups Creek corridor within the subject land will remain 95m and the widest point within the subject land will remain 250m. The minimum widths of the Fox Valley Road corridor within the subject land will remain 120m in the north, and 135m in the south. The Fox Valley Road corridor is at its widest point within the subject land, and this will remain greater than 300m. Areas adjacent to ecological corridors within the subject land will be managed as Asset Protection Zones (APZs).	The site inspection of habitat corridors confirmed that Habitat Corridors and Linkages are being managed in accordance with the approved BMP and the minimum width of both corridors are currently being retained in accordance with the BMP.	Site inspection	The proposal will not result in any reduction in width for either of the ecological corridors within the subject land. The minimum width of the Coups Creek corridor within the subject land will remain 95m and the widest point within the subject land will remain 250m. The minimum widths of the Fox Valley Road corridor within the subject land will remain 120m in the north, and 135m in the south. The Fox Valley Road corridor is at its widest point within the subject land, and this will remain greater than 300m.Areas adjacent to ecological corridors within the subject land will be managed as Asset Protection Zones (APZs).	On-site: undertaking site inspection of habitat corridors and measuring width of ecological corridors to confirm that Habitat Corridors and Linkages are being managed in accordance with the approved BMP. Off-site: reviewing documents relating to current mapping of ecological corridor vegetation and measure width of corridor to confirm that Habitat Corridors and Linkages are being managed in accordance with the approved BMP.	Y
2.1 The proposal will not result in any reduction in width for either of the ecological corridors within the subject land.	The site inspection of habitat corridors confirmed that Habitat Corridors and Linkages are being managed in accordance with the approved BMP and that the minimum width of both corridors are currently being retained in accordance with the BMP.	Site inspection	Not reduce width of the ecological corridors within the subject land.	On-site: undertaking site inspection of habitat corridors and measuring width of ecological corridors to confirm that the proposal has not resulted in any reduction in width for either of the ecological corridors within the subject land. Off-site: reviewing documents relating to current mapping of ecological corridor vegetation and measure width of corridor to confirm that the proposal has not resulted in any reduction in width for either of the ecological corridors within the subject land.	Y

2.2 The minimum width of the Coups Creek corridor within the subject land will remain 95m and the widest point within the subject land will remain 250m.	The site inspection of habitat corridors confirmed that Habitat Corridors and Linkages are being managed in accordance with the approved BMP and that the minimum width of both corridors are currently being retained in accordance with the BMP.	Site inspection	The minimum width of the Coups Creek corridor within the subject land will remain 95m and the widest point within the subject land will remain 250m.	On-site: undertaking site inspection of habitat corridors and measuring width of ecological corridors to confirm that the minimum width of the Coups Creek corridor within the subject land remains 95m and the widest point within the subject land remains 250m. Off-site: reviewing documents relating to current mapping of ecological corridor vegetation and measure width of corridor to confirm that the minimum width of the Coups Creek corridor within the subject land remains 95m and the widest point within the subject land remains 250m.	Y
2.3 The minimum widths of the Fox Valley Road corridor within the subject land will remain 120m in the north, and 135m in the south.	The site inspection of habitat corridors confirmed that Habitat Corridors and Linkages are being managed in accordance with the approved BMP and that the minimum width of both corridors are currently being retained in accordance with the BMP.	Site inspection	The minimum widths of the Fox Valley Road corridor within the subject land will remain 120m in the north, and 135m in the south.	On-site: undertaking site inspection of habitat corridors and measuring width of ecological corridors to confirm that the minimum widths of the Fox Valley Road corridor within the subject land remains 120m in the north, and 135m in the south. Off-site: reviewing documents relating to current mapping of ecological corridor vegetation and measure width of corridor to confirm that the minimum widths of the Fox Valley Road corridor within the subject land remains 120m in the north, and 135m in the south.	Y
2.4 The Fox Valley Road corridor is at its widest point within the subject land, and this will remain greater than 300m.	The site inspection of habitat corridors confirmed that Habitat Corridors and Linkages are being managed in accordance with the approved BMP and that the minimum width of both corridors are currently being retained in accordance with the BMP.	Site inspection	The Fox Valley Road corridor is at its widest point within the subject land, and this will remain greater than 300m.	On-site: undertaking site inspection of habitat corridors and measuring width of ecological corridors to confirm that the Fox Valley Road corridor is at its widest point within the subject land, and remains greater than 300m. Off-site: reviewing documents relating to current mapping of ecological corridor vegetation and measure width of corridor to confirm that the Fox Valley Road corridor is at its widest point within the subject land, and remains greater than 300m.	Y
2.5 Areas adjacent to ecological corridors within the subject land will be managed as Asset Protection Zones (APZs).	The site inspection of habitat corridors confirmed that Habitat Corridors and Linkages are being managed in accordance with the approved BMP and that the areas adjacent to ecological corridors within the subject land are managed as Asset Protection Zones (APZs).	Site inspection	Manage adjacent ecological corridors within subject lands as Asset Protection Zones (APZs).	On-site: undertaking site inspection of habitat corridors to confirm that areas adjacent to ecological corridors within the subject land are being managed as Asset Protection Zones (APZs). Off-site: reviewing documents relating to management of habitat corridors and monitoring reports to confirm that areas adjacent to ecological corridors within the subject land are being managed as Asset Protection Zones (APZs).	Y
2.6 Activities under the APZ management are likely to include fuel reduction (through slashing/mowing/manual removal) and hazard reduction burning.	The site inspection of habitat corridors confirmed APZ management including fuel reduction through slashing have occurred. No hazard reduction burns have taken place.	Site inspection	Undertake fuel reduction and hazard reduction burning activities as outlined in the APZ management.	On-site: undertaking site inspection of habitat corridors to confirm that activities under the APZ management include fuel reduction (through slashing/mowing/manual removal) and hazard reduction burning. Off-site: reviewing documents relating to management of habitat corridors and monitoring reports to confirm that activities under the APZ management include fuel reduction (through slashing/mowing/manual removal) and hazard reduction burning.	Y

2.7 These activities are likely to promote the retention of the existing simplified vegetation structure adjacent to ecological corridors.	The site inspection of habitat corridors confirmed that Habitat Corridors and Linkages are being managed in accordance with the approved BMP.	Site inspection	Retention of existing simplified vegetation structure adjacent to ecological corridors as a result of activities.	On-site: undertaking site inspection of habitat corridors and completing a 20 X 20m BioBanking quadrat to determine vegetation structure to confirm whether activities to promote the retention of the existing simplified vegetation structure adjacent to ecological corridors are being undertaken. Off-site: reviewing documents relating to management of habitat corridors and monitoring reports to confirm whether activities to promote the retention of the existing simplified vegetation structure adjacent to ecological corridors are being undertaken.	Y
2.8 These areas may not be suitable for the passage of all faunal groups and would not therefore contribute as an expansion of the width of these corridors.	The site inspection of habitat corridors confirmed that Habitat Corridors and Linkages are being managed in accordance with the approved BMP.	Site inspection	These areas would not contribute as an expansion of the width of these corridors.	On-site: undertaking site inspection of habitat corridors and measuring width of ecological corridors. Off-site: reviewing documents relating to current mapping of ecological corridor vegetation and measure width of corridor.	Y
2.9 The proposal is unlikely to significantly impact on the corridor values of the subject land, as all current corridors will be retained.	The site inspection of habitat corridors confirmed that Habitat Corridors and Linkages are being managed in accordance with the approved BMP and that the minimum width of both corridors are currently being retained in accordance with the BMP.	Site inspection	No significant impacts on corridor values of the subject land, as well as all current corridors will be retained.	On-site: undertaking site inspection of habitat corridors and measuring width of ecological corridors to confirm that there has been no significant impact on the corridor values of the subject land and all current corridors have been retained. Off-site: reviewing documents relating to current mapping of ecological corridor vegetation and measure width of corridor to confirm that there has been no significant impact on the corridor values of the subject land and all current corridors have been retained.	Y
Habitat Corridor and Linkages Management Plan - Condition 3	**7.4 Management Objectives and Actions:** **Objectives will be achieved on the subject land through the following management actions:** **● Retention of all native vegetation within the E2 zone;** **● Management of pests and weeds within the Coups Creek and Fox Valley Road corridors as prescribed in the pest and weed management plans for the subject land;** **● Bushfire management of APZ's adjacent to the Coups Creek and Fox Valley Road corridors within the subject land in accordance with the attached Fire Management Plan; and** **● Exclusion fencing along the boundaries of the Coups Creek and Fox Valley Road corridors within the subject land.** **7.4.1 Vegetation Retention** **As part of a condition of consent significant areas of bushland within the subject land were zoned E2 Conservation Zone. This was based on an independent review conducted by SKM and as directed by the NSW DoP and DECCW, as well as the Federal DEWHA. The E2 zone will protect land with high conservation value on the subject land. Areas which were previously managed as APZ's will be protected under the current zoning with some areas encouraged to regenerate. Vegetation within the two existing vegetated corridors on the subject land will be managed long-term through regular maintenance visits and monitoring which will manage weeds and promote biodiversity.**				
3.0 The Habitat Corridor and Linkages Management objectives and actions will be achieved through the following management actions: · Retention of all native vegetation within the E2 zone; · Management of pests and weeds within the Coups Creek and Fox Valley Road corridors as prescribed in the pest and weed management plans for the subject land; · Bushfire management of APZ's adjacent to the Coups Creek and Fox Valley Road corridors within the subject land in accordance with the attached Fire Management Plan; and · Exclusion fencing along the boundaries of the Coups Creek and Fox Valley Road corridors within the subject land. Vegetation within the two existing vegetated corridors on the subject land will be managed long-term through regular maintenance visits and monitoring which will manage weeds and promote biodiversity.	The site inspection of habitat corridors confirmed that Habitat Corridors and Linkages are being managed in accordance with the approved BMP and that the minimum width of both corridors are currently being retained in accordance with the BMP. Exclusion fencing was observed along the Fox Valley corridor. No fencing was observed along Coops Creek. Recommendation - ensure fencing requirements specified in the BMP are met.	Site inspection	The Habitat Corridor and Linkages Management objectives and actions will be achieved through the following management actions:· Retention of all native vegetation within the E2 zone; · Management of pests and weeds within the Coups Creek and Fox Valley Road corridors as prescribed in the pest and weed management plans for the subject land; · Bushfire management of APZ's adjacent to the Coups Creek and Fox Valley Road corridors within the subject land in accordance with the attached Fire Management Plan; and · Exclusion fencing along the boundaries of the Coups Creek and Fox Valley Road corridors within the subject land. Vegetation within the two existing vegetated corridors on the subject land will be managed long-term through regular maintenance visits and monitoring which will manage weeds and promote biodiversity.	On-site: undertaking site inspection of Coups Creek and Fox Valley corridors and completion of 20 X 20m BioBanking quadrat to determine weed species composition to confirm that management objectives are being achieved and actions are being undertaken in accordance with the approved BMP. Off-site: reviewing monitoring reports, bush fire management records and interviewing persons responsible for bush fire management to confirm that management objectives are being achieved and actions are being undertaken in accordance with the approved BMP.	N

3.1 The Habitat Corridor and Linkages Management objectives and actions will be achieved through the following management actions:	Refer to Requirement 3.0	NA	The Habitat Corridor and Linkages Management objectives and actions will be achieved through the following management actions:		NA
3.1.1 Retention of all native vegetation within the E2 zone;	All native vegetation within the E2 zone appears to have been retained	Site inspection	Retain of all native vegetation within the E2 zone.	On-site: undertaking site inspection of habitat corridors to confirm that all native vegetation within the E2 zone has been retained. Off-site: review of documents relating to monitoring and management records to confirm that all native vegetation within the E2 zone has been retained.	Y
3.1.2 Management of pests and weeds within the Coups Creek and Fox Valley Road corridors as prescribed in the pest and weed management plans for the subject land;	Refer to Requirement 3.0. Management of pests and weeds within the Coups Creek and Fox Valley Road corridors has been undertaken as prescribed in the pest and weed management plans for the subject land.	Site inspection	Undertake management of pests and weeds within the Coups Creek and Fox Valley Road corridors as prescribed in the pest and weed management plans for the subject land.	On-site: undertaking site inspection of Coups Creek and Fox Valley corridors and completion of 20 X 20m BioBanking quadrat to determine weed species composition to confirm that pests and weeds within the Coups Creek and Fox Valley Road corridors are being managed as prescribed in the pest and weed management plans for the subject land. Off-site: reviewing monitoring reports to confirm that pests and weeds within the Coups Creek and Fox Valley Road corridors are being managed as prescribed in the pest and weed management plans for the subject land.	Y

3.1.3 Bushfire management of APZ's adjacent to the Coups Creek and Fox Valley Road corridors within the subject land in accordance with the attached Fire Management Plan; and	Refer to Requirement 3.0. Bushfire management of APZ's adjacent to the Coups Creek and Fox Valley Road corridors within the subject land are in accordance with the attached Fire Management Plan	Site inspection	Undertake bush fire management of APZ's adjacent to the Coups Creek and Fox Valley Road corridors within the subject land in accordance with the attached Fire Management Plan.	On-site: undertaking site inspection of APZs to confirm that bushfire management of APZ's adjacent to the Coups Creek and Fox Valley Road corridors within the subject land has been in accordance with the attached Fire Management Plan. Off-site: review of documents relating to bush fire management and interviewing persons responsible for bush fire management to confirm that bushfire management of APZ's adjacent to the Coups Creek and Fox Valley Road corridors within the subject land has been in accordance with the attached Fire Management Plan.	Y
3.1.4 Exclusion fencing along the boundaries of the Coups Creek and Fox Valley Road corridors within the subject land.	Exclusion fencing was observed along the Fox Valley corridor. No fencing was observed along Coops Creek. Recommendation - ensure fencing requirements specified in the BMP are met.	Site inspection	Install exclusion fencing along the boundaries of the Coups Creek and Fox Valley Road corridors within the subject land.	On-site: undertaking site inspection of fencing to confirm that exclusion fencing is in place along the boundaries of the Coups Creek and Fox Valley Road corridors within the subject land.	N
3.2 Vegetation Retention As part of a condition of consent significant areas of bushland within the subject land were zoned E2 Conservation Zone. The E2 zone will protect land with high conservation value on the subject land.	The areas of E2 Conservation land within the site are being maintained and protecting land with high conservation values.	NA	E2 zone will protect land with high conservation value on the subject land.	On-site: undertaking site inspection of habitat corridors to confirm that the zoned E2 Conservation Zone is successfully protecting land with high conservation value on the subject land. Off-site: review of documents relating to monitoring reports to confirm that the zoned E2 Conservation Zone is successfully protecting land with high conservation value on the subject land.	Y
3.3 Areas which were previously managed as APZ's will be protected under the current zoning with some areas encouraged to regenerate.	Refer to Requirement 3.0. Areas which were previously managed as APZ's are being encouraged to regenerate.	NA	Protect areas previously managed as APZ's under the current zoning with some areas encouraged to regenerate.	On-site: undertaking site inspection of areas which were previously managed as APZs to confirm that these areas are now being protected under the current E2 Conservation zoning and areas are being managed to encourage regeneration. Off-site: review of documents relating to monitoring reports and regeneration efforts, where applicable, to confirm that areas which were previously managed as APZs are now being protected under the current E2 Conservation zoning and these areas are being managed so as to encourage regeneration.	Y
3.4 Vegetation within the two existing vegetated corridors on the subject land will be managed long-term through regular maintenance visits and monitoring which will manage weeds and promote biodiversity.	Refer to Requirement 3.0. Regular maintenance visits and monitoring for weed management and biodiversity is occurring within the two corridors	NA	Manage two existing vegetated corridors on the subject land through regular maintenance visits and monitoring which will manage weeds and promote biodiversity.	On-site: undertaking site inspection of habitat corridors to confirm that vegetation within the two existing vegetated corridors on the subject land is being managed long-term through regular monitoring and maintenance visits to manage weeds and promote biodiversity. Off-site: review of documents relating to monitoring reports to confirm that vegetation within the two existing vegetated corridors on the subject land is being managed long-term through regular monitoring and maintenance visits to manage weeds and promote biodiversity.	Y
Habitat Corridor and Linkages Management Plan - Condition 4	**7.4 Management Objectives and Actions:** **7.4.2 Weed Management**				
4.0 Habitat Corridor and Linkages Weed Management - Increases in native flora diversity and structure through weed control will provide suitable habitat for more native fauna species. Regular weed control will ensure the vegetation maintains a high conservation value and protected habitat for fauna.	Refer to Requirement 3.0. Regular weed control has been undertaken throughout the corridors and has this led to increases in native flora diversity and structure providing suitable habitat for more native fauna species.	NA	Habitat Corridor and Linkages Weed Management - Increases in native flora diversity and structure through weed control will provide suitable habitat for more native fauna species. Regular weed control will ensure the vegetation maintains a high conservation value and protected habitat for fauna.	On-site: undertaking site inspection of habitat corridors and completing a 20 X 20m BioBanking quadrat to determine vegetation structure and confirm that management objectives are being achieved and actions are being undertaken in accordance with the approved BMP. Off-site: reviewing documents relating to management of habitat corridors and monitoring reports to confirm that management objectives are being achieved and actions are being undertaken in accordance with the approved BMP.	Y

4.1 Removal of weeds from the E2 zone will improve the current condition of the vegetation in the E2 zone.	Refer to Requirement 3.0.Regular weed control has been undertaken throughout the corridors and has this led to increases in native flora diversity and structure providing suitable habitat for more native fauna species.	NA	Remove weeds from the E2 zone to improve the current condition of the vegetation in the E2 zone.	On-site: undertaking site inspection of habitat corridors and completing a 20 X 20m BioBanking quadrat to determine vegetation structure and confirm that removal of weeds from the E2 zone has improved the condition of the vegetation in the E2 zone. Off-site: reviewing documents relating to management of habitat corridors and monitoring reports to confirm that removal of weeds from the E2 zone has been undertaken and has resulted in improvements to the condition of the vegetation in the E2 zone.	Y
4.2 Increases in native flora diversity and structure through weed control will provide suitable habitat for more native fauna species.	Refer to Requirement 3.0. Regular weed control has been undertaken throughout the corridors and has this led to increases in native flora diversity and structure providing suitable habitat for more native fauna species.	NA	Undertake weed control to increases native flora diversity and structure to provide suitable habitat for more native fauna species.	On-site: undertaking site inspection of habitat corridors and completing a 20 X 20m BioBanking quadrat to determine vegetation structure and confirm that increases in native flora diversity and structure through weed control have provided suitable habitat for more native fauna species. Off-site: reviewing documents relating to management of habitat corridors and monitoring reports to confirm that increases in native flora diversity and structure have been achieved through weed control and have provided suitable habitat for more native fauna species.	Y
4.3 Regular weed control will ensure the vegetation maintains a high conservation value and protected habitat for fauna.	Refer to Requirement 3.0. Regular weed control has been undertaken throughout the corridors and has this led to increases in native flora diversity and structure providing suitable habitat for more native fauna species.	NA	Undertake regular weed control will ensure the vegetation maintains a high conservation value and protected habitat for fauna.	On-site: undertaking site inspection of habitat corridors and completing a 20 X 20m BioBanking quadrat to determine vegetation structure and confirm that regular weed control has been undertaken and has resulted in the vegetation maintaining a high conservation value and protected habitat for fauna. Off-site: reviewing documents relating to management of habitat corridors and monitoring reports to confirm that regular weed control has been undertaken and that monitoring reports indicate that this has resulted in the vegetation maintaining a high conservation value and protected habitat for fauna.	Y
Habitat Corridor and Linkages Management Plan - Condition 5	**7.4 Management Objectives and Actions:** **7.4.3 Pest Management** **Managing pest animals likely to utilise the E2 zone will consist of mainly habitat modification. This approach modifies suitable habitat in a way that renders it undesirable to the pest.** **By discouraging pest species within the E2 zone and the surrounding lands habitat value will be increased for native fauna.** **A key component of minimising potential impacts of feral and domestic animals on the native species of the E2 zone will be community education. It is essential to educate the community of the potential impacts of feral and domestic animals and of their responsibilities to minimise these impacts.**				
5.0 Habitat Corridor and Linkages Pest Management -It is essential to educate the community of the potential impacts of feral and domestic animals and of their responsibilities to minimise these impacts.	Refer to Requirement 7.0 of the PMP above.	NA	Habitat Corridor and Linkages Pest Management -It is essential to educate the community of the potential impacts of feral and domestic animals and of their responsibilities to minimise these impacts.	On-site: undertaking site inspection of habitat corridors to confirm that management objectives are being achieved and actions are being undertaken in accordance with the approved BMP. Off-site: reviewing documents relating to pest management, monitoring reports and education information to confirm that management objectives are being achieved and actions are being undertaken in accordance with the approved BMP.	N
5.1 Managing pest animals likely to utilise the E2 zone will consist of mainly habitat modification. This approach modifies suitable habitat in a way that renders it undesirable to the pest	Progressive revegetation works and weeding resulting in habitat modification were identified by the audit site inspection. These habitats are improving in condition and structure to become more suitable for native fauna.		Undertake habitat modification to manage pest animals likely to utilise the E2 zone.	On-site: undertaking site inspection of habitat corridors to confirm that habitat modification has been undertaken to render the E2 zone undesirable to pest animals likely to utilise the area. Off-site: reviewing documents relating to pest management and monitoring reports to confirm that habitat modification has been undertaken to render the E2 zone undesirable to pest animals likely to utilise the area.	Y

5.2 By discouraging pest species within the E2 zone and the surrounding lands habitat value will be increased for native fauna	Progressive revegetation works and weeding resulting in habitat modification were identified by the audit site inspection. These habitats are improving in condition and structure to become more suitable for native fauna.		Discourage pest species within the E2 zone and the surrounding lands habitat value to increase native fauna	On-site: undertaking site inspection of habitat corridors to confirm that the surrounding lands habitat value has been increased for native fauna by discouraging pest species within the E2 zone. Off-site: reviewing documents relating to pest management and monitoring reports to confirm that the surrounding lands habitat value has been increased for native fauna by discouraging pest species within the E2 zone.	Y
5.3 A key component of minimising potential impacts of feral and domestic animals on the native species of the E2 zone will be community education. It is essential to educate the community of the potential impacts of feral and domestic animals and of their responsibilities to minimise these impacts.	Refer to Requirements 7.0 of the PMP above.	NA	Educate the community of the potential impacts of feral and domestic animals and of their responsibilities to minimise these impacts.	Off-site: reviewing documents relating to education information developed and interviewing persons responsible for education to confirm that community education is occurring in relation to the potential impacts of feral and domestic animals and of the communities responsibilities to minimise these impacts.	N
Habitat Corridor and Linkages Management Plan - Condition 6	**7.4 Management Objectives and Actions:** **7.4.4 Bushfire Management** **The subject land has been divided into four types of Fuel Management Zones (FMZ). These include APZs, Heritage Management Zones (no burn schedule), Strategic Management Zones and Land Management Zones which are further described in Chapter 5 of the BMP. Generally, the creation of APZs require vegetation modification to reduce fuel loads. As the majority of APZs on site are already in existence significant areas of vegetation will not need modification – only maintenance.** **The creation of a new APZ (in the south-eastern corner of the subject land) will result in some modification of some understorey vegetation. The creation of this APZ can be achieved without major vegetation clearance and is unlikely to impact upon connectivity or fauna habitat values within the E2 zone.** **Mosaic burning small areas at different times reduces the impacts expansive fires have on removing large areas of forage habitat and refugia. By following appropriate fire regimes and fire intensity as described in Chapter 5 forest structure and diversity will be maintained and potentially enhanced.**				
6.0 Habitat Corridor and Linkages Bushfire Management -Mosaic burning small areas at different times reduces the impacts expansive fires have on removing large areas of forage habitat and refugia. By following appropriate fire regimes and fire intensity as described in Chapter 5 forest structure and diversity will be maintained and potentially enhanced.	APZs inspected during the site audits were being managed appropriately in accordance with the BMP. Weed control and some plantings have seen improvement s in the structure and diversity of these areas.	Site inspection, review of available documentation	Habitat Corridor and Linkages Bushfire Management -Mosaic burning small areas at different times reduces the impacts expansive fires have on removing large areas of forage habitat and refugia. By following appropriate fire regimes and fire intensity as described in Chapter 5 forest structure and diversity will be maintained and potentially enhanced.	On-site: undertaking site inspection of habitat corridors and new APZ to confirm that management objectives are being achieved and actions are being undertaken in accordance with the approved BMP. Off-site: reviewing documents relating to bushfire management, monitoring and interviewing persons responsible for bush fire management to confirm that management objectives are being achieved and actions are being undertaken in accordance with the approved BMP.	Y
6.1 Generally, the creation of APZs require vegetation modification to reduce fuel loads. As the majority of APZs on site are already in existence significant areas of vegetation will not need modification – only maintenance.	Refer to Requirement 6.0 above	NA	Only maintain (do not modify) APZs vegetation.	On-site: undertaking site inspection of habitat corridors and new APZ to confirm that monitoring and management of the area has been undertaken in order to maintain appropriate fuel loads.	NA
6.2 The creation of a new APZ (in the south-eastern corner of the subject land) will result in some modification of some understorey vegetation.	Refer to Requirement 6.0 above. A new APZ (in the south-eastern corner of the subject land) has been created and resulted in some modification of some understorey vegetation but without major vegetation clearance or impacts to connectivity.	NA	Undertake understorey vegetation modification within new APZ areas (in the south-eastern corner of the subject land).	On-site: undertaking site inspection of habitat corridors and new APZ (in the south-eastern corner of the subject land) to confirm that some modification of some understorey vegetation has been undertaken. Off-site: reviewing documents relating to bushfire management, monitoring and interviewing persons responsible for bush fire management to confirm that some modification of some understorey vegetation has been undertaken, as required.	Y
6.2.1 The creation of this APZ can be achieved without major vegetation clearance and is unlikely to impact upon connectivity or fauna habitat values within the E2 zone.	Refer to Requirement 6.0 above. A new APZ (in the south-eastern corner of the subject land) has been created and resulted in some modification of some understorey vegetation but without major vegetation clearance or impacts to connectivity.	NA	No impacts upon connectivity or fauna habitat values within the E2 zone as a result of major vegetation clearing associated with creation of APZ.	On-site: undertaking site inspection of habitat corridors and new APZ to confirm that there has been no major vegetation clearance or impact upon connectivity or fauna habitat values within the E2 zone. Off-site: reviewing documents relating to bushfire management, monitoring and interviewing persons responsible for bush fire management to confirm that there has been no major vegetation clearance or impact upon connectivity or fauna habitat values within the E2 zone.	Y

6.3 Mosaic burning small areas at different times reduces the impacts expansive fires have on removing large areas of forage habitat and refugia.	Refer to Requirements 5.1 of FMP above and Sections 7.1 and 7.2 of the VMP above. The proposed hazard reduction burn has considered a mosaic of age class flora and fauna refuges are maintained, however no burn as occurred.	NA	Undertake mosaic burning in small areas at different times to reduce the impacts expansive fires have on removing large areas of forage habitat and refugia,	On-site: undertaking site inspection of habitat corridors and new APZ to confirm that mosaic burning of small areas has been undertaken at different times to reduce the impacts expansive fires have on removing large areas of forage habitat and refuge. Off-site: reviewing documents relating to bushfire management, monitoring and interviewing persons responsible for bush fire management to confirm that mosaic burning of small areas has been undertaken at different times to reduce the impacts expansive fires have on removing large areas of forage habitat and refuge.	NA
6.4 By following appropriate fire regimes and fire intensity as described in Chapter 5 forest structure and diversity will be maintained and potentially enhanced.	Refer to Requirements 5.1 of FMP above and Sections 7.1 and 7.2 of the VMP above.	NA	Follow appropriate fire regimes and fire intensity as described in Chapter 5 of the BMP forest structure and diversity will be maintained and potentially enhanced.	On-site: undertaking site inspection of habitat corridors and new APZ to confirm that forest structure and diversity is being maintained and potentially enhanced by following appropriate fire regimes and fire intensity as described in Chapter 5. Off-site: reviewing documents relating to bushfire management, monitoring and interviewing persons responsible for bush fire management to confirm that forest structure and diversity is being maintained and potentially enhanced by following appropriate fire regimes and fire intensity as described in Chapter 5.	Y
Habitat Corridor and Linkages Management Plan - Condition 7	**7.4 Management Objectives and Actions:** **7.4.5 Fencing** **The bushland within the E2 zone is proposed to be fenced to reduce public access and their associated impacts on native fauna. Fencing will be carried out so as not to impede fauna movements.**				
7.0 Habitat Corridor and Linkages fencing - The bushland within the E2 zone is proposed to be fenced to reduce public access and their associated impacts on native fauna. Fencing will be carried out so as not to impede fauna movements.	Exclusion fencing was observed within the E2 zone including both fencing and clearly demarcation bollard with signage, however no fencing was observed along the boundaries of Coops Creek corridor within the subject land. Fencing included fauna friendly design and will not impact on fauna movement.	Site inspection	Habitat Corridor and Linkages fencing -The bushland within the E2 zone is proposed to be fenced to reduce public access and their associated impacts on native fauna. Fencing will be carried out so as not to impede fauna movements.	On-site: undertaking site inspection of fencing to confirm that management objectives are being achieved and actions are being undertaken in accordance with the approved BMP.	N
7.1 The bushland within the E2 zone is proposed to be fenced to reduce public access and their associated impacts on native fauna.	Exclusion fencing was observed within the E2 zone including both fencing and clearly demarcation bollard with signage, however no fencing was observed along the boundaries of Coops Creek corridor within the subject land. Fencing included fauna friendly design and will not impact on fauna movement.	Site inspection	Undertake fencing of bushland within the E2 zone to reduce public access and their associated impacts on native fauna.	On-site: undertaking site inspection of fencing to confirm that the bushland within the E2 zone has been fenced to reduce public access and their associated impacts on native fauna.	N
7.2 Fencing will be carried out so as not to impede fauna movements.	Exclusion fencing was observed within the E2 zone including both fencing and clearly demarcation bollard with signage, however no fencing was observed along Coops Creek. Fencing included fauna friendly design and will not impact on fauna movement.	Site inspection	Undertake fencing of bushland within the E2 zone as not to impede fauna movements.	On-site: undertaking site inspection of fencing to confirm that fencing has been carried out so as not to impede fauna movements.	Y

Hydrology and Nutrient Management Plan - Condition 1	**8.3 Management Strategy:** **8.3.1 Construction-stage Stormwater Management** **Detailed strategies, controls and measures should be developed according to relevant Council and state government guidelines before construction within the Wahroonga Estate development site starts to ensure that construction stage erosion and sediment impacts are mitigated. The following principles should be adhered to:** **• Limit soil disturbance within the development site where possible;** **• Minimise soil erosion resulting from the construction activities over the precinct development site; and** **• Protect downstream environments from sedimentation.**				
1.1 Detailed strategies, controls and measures should be developed according to relevant Council and state government guidelines before construction within the Wahroonga Estate development site starts to ensure that construction stage erosion and sediment impacts are mitigated. The following principles should be adhered to:	Evidence of On-site management of erosion control and sedimentation impacts was observed at a number of the audit sites including 17, 16, 7, 6, 15. These devices and general absence of significant erosion or sedimentation issues observed in the areas surrounding the development suggest soil and erosion management is being undertaken in accordance with BMP. Erosion and sediment control issues and management actions are described in each annual BMP report. Separate hydrology reports are produced to inform the annual BMP report, or to assess specific issues. Such as the 'Wahroonga Estate Redevelopment BMP Hydrology Report' (31/07/2013), 'Kuring-Gai Stormwater Management Issues Report' (8/4/2014) and 'BMP Hydrology and Nutrient Control Plan' (2014).	Site inspection, staff interviews, reviews of available documents	Detailed strategies, controls and measures should be developed according to relevant Council and state government guidelines before construction within the Wahroonga Estate development site starts to ensure that construction stage erosion and sediment impacts are mitigated. The following principles should be adhered to:	On-site: undertaking site inspection of development site for evidence of soil disturbance, erosion and sediment impacts. Off-site: reviewing documents relating to construction-stage Stormwater Management, monitoring, and interviewing persons responsible for stormwater management to confirm that detailed strategies, controls and measures were developed in accordance with relevant Council and state government guidelines prior to commencement of construction within the Wahroonga Estate development site.	Y
1.1.1 Limit soil disturbance within the development site where possible;	Evidence of On-site management of erosion control and sedimentation impacts was observed at a number of the audit sites including 17, 16, 7, 6, 15. These devices and general absence of significant erosion or sedimentation issues observed in the areas surrounding the development suggest soil and erosion management is being undertaken in accordance with BMP. Erosion and sediment control issues and management actions are described in each annual BMP report. Separate hydrology reports are produced to inform the annual BMP report, or to assess specific issues. Such as the 'Wahroonga Estate Redevelopment BMP Hydrology Report' (31/07/2013), 'Kuring-Gai Stormwater Management Issues Report' (8/4/2014) and 'BMP Hydrology and Nutrient Control Plan' (2014).	Site inspection, staff interviews, reviews of available documents	Limit soil disturbance within the development site where possible.	On-site: undertaking site inspection of development site to confirm that soil disturbance within the development site has been limited where possible. Off-site: reviewing documents relating to construction-stage Stormwater Management, monitoring, and interviewing persons responsible for stormwater management to confirm that soil disturbance within the development site has been limited where possible;	Y
1.1.2 Minimise soil erosion resulting from the construction activities over the precinct development site; and	Evidence of On-site management of erosion control and sedimentation impacts was observed at a number of the audit sites including 17, 16, 7, 6, 15. These devices and general absence of significant erosion or sedimentation issues observed in the areas surrounding the development suggest soil and erosion management is being undertaken in accordance with BMP. Erosion and sediment control issues and management actions are described in each annual BMP report. Separate hydrology reports are produced to inform the annual BMP report, or to assess specific issues. Such as the 'Wahroonga Estate Redevelopment BMP Hydrology Report' (31/07/2013), 'Kuring-Gai Stormwater Management Issues Report' (8/4/2014) and 'BMP Hydrology and Nutrient Control Plan' (2014).	Site inspection, staff interviews, reviews of available documents	Minimise soil erosion resulting from the construction activities over the precinct development site.	On-site: undertaking site inspection of development site for evidence of soil erosion to confirm that soil erosion resulting from the construction activities over the precinct development site has been minimised. Off-site: reviewing documents relating to construction-stage Stormwater Management, monitoring, and interviewing persons responsible for stormwater management to confirm that soil erosion resulting from the construction activities over the precinct development site has been minimised.	Y
1.1.3 Protect downstream environments from sedimentation.	Evidence of On-site management of erosion control and sedimentation impacts was observed at a number of the audit sites including 17, 16, 7, 6, 15. These devices and general absence of significant erosion or sedimentation issues observed in the areas surrounding the development suggest soil and erosion management is being undertaken in accordance with BMP. Erosion and sediment control issues and management actions are described in each annual BMP report. Separate hydrology reports are produced to inform the annual BMP report, or to assess specific issues. Such as the 'Wahroonga Estate Redevelopment BMP Hydrology Report' (31/07/2013), 'Kuring-Gai Stormwater Management Issues Report' (8/4/2014) and 'BMP Hydrology and Nutrient Control Plan' (2014).	Site inspection, staff interviews, reviews of available documents	Protect downstream environments from sedimentation.	On-site: undertaking site inspection of downstream environments for sedimentation. Off-site: reviewing documents relating to construction-stage Stormwater Management, monitoring, and interviewing persons responsible for stormwater management to confirm management actions & processes have been put in place & maintained to protect downstream environments from sedimentation	Y

Hydrology and Nutrient Management Plan - Condition 2	**8.3 Management Strategy:** **8.3.2 Management of Stormwater Discharges** **Direct stormwater discharges from new areas within the Wahroonga Estate development site into the surrounding bushland and stream riparian corridors shall incorporate the following measures:** **● Disperse all stormwater runoff entering the bushland sufficiently so as not to cause downstream erosion or scour. This can be achieved using a dispersal trench when the soil and geotechnical conditions are suitable.** **● If the discharged runoff is concentrated from a large catchment and/or if there is a nearby watercourse or formal drainage path in the bushland, then the discharge point should be extended to that watercourse and measures are taken to ensure all potential erosion and sedimentation impacts are mitigated.**				
2.0 Direct stormwater discharges from new areas within the Wahroonga Estate development site into the surrounding bushland and stream riparian corridors shall incorporate the following measures: · Disperse all stormwater runoff entering the bushland sufficiently so as not to cause downstream erosion or scour. · If the discharged runoff is concentrated from a large catchment and/or if there is a nearby watercourse or formal drainage path in the bushland, then the discharge point should be extended to that watercourse and measures are taken to ensure all potential erosion and sedimentation impacts are mitigated	No evidence of new stormwater discharge from the development were observed within bushland and management is being undertaken in accordance with BMP. Stormwater inflows from areas under ACA's control are subject to the 'Wahroonga Estate Flooding and Stormwater Master Plan' (Hyder Consultants 2009). This plan specifies a range of Water Sensitive Urban Design (WSUD) measures to reduce run-off related issues. Based on the information reviewed for the audit and audit site inspection, several issues have been identified with stormwater discharge from areas ultimately under ACA's control. These include construction areas and previously developed areas at and near the SAN hospital. Issues with hydrology for the site are outlined in Chapter 7 of the 2014 BMP report. The issues noted in the report include: a pollution incident from a construction area (5 June 2014) (resolved) and stormwater discharge from the SAN hospital into the site at two locations (unresolved). The bushland team reported that they are working with the managers of the SAN site towards resolving this issue. The work required includes installation of a swale drain at one site and extending a discharge pipe at the other site to remove scour issues. No issues with erosion or scour have occurred for stormwater discharged under ACA's control. All issues identified were remediated, resolved or are being actively managed in relation to findings above.	Site inspection, staff interviews, review of available documents	Direct stormwater discharges from new areas within the Wahroonga Estate development site into the surrounding bushland and stream riparian corridors shall incorporate the following measures:· Disperse all stormwater runoff entering the bushland sufficiently so as not to cause downstream erosion or scour. · If the discharged runoff is concentrated from a large catchment and/or if there is a nearby watercourse or formal drainage path in the bushland, then the discharge point should be extended to that watercourse and measures are taken to ensure all potential erosion and sedimentation impacts are mitigated	On-site: undertaking site inspection of development site, surrounding bush and stream riparian corridors for evidence of stormwater runoff to confirm that management objectives are being achieved and actions are being undertaken in accordance with the approved BMP. Off-site: reviewing documents relating to management of stormwater discharges, monitoring, and interviewing persons responsible for stormwater management to confirm that management objectives are being achieved and actions are being undertaken in accordance with the approved BMP.	N
2.1 Direct stormwater discharges from new areas within the Wahroonga Estate development site into the surrounding bushland and stream riparian corridors shall incorporate the following measures:	Refer to Requirement 2.0 above.	NA	Direct stormwater discharges from new areas within the Wahroonga Estate development site into the surrounding bushland and stream riparian corridors shall incorporate the following measures:	On-site: undertaking site inspection of development site, surrounding bush and stream riparian corridors for evidence of stormwater runoff to confirm that stormwater discharges from new areas within the Wahroonga Estate development site are being directed into the surrounding bushland and stream riparian corridors. Off-site: reviewing documents relating to management of stormwater discharges, monitoring, and interviewing persons responsible for stormwater management to confirm that stormwater discharges from new areas within the Wahroonga Estate development site are being directed into the surrounding bushland and stream riparian corridors.	Y

2.1.1 Disperse all stormwater runoff entering the bushland sufficiently so as not to cause downstream erosion or scour. This can be achieved using a dispersal trench when the soil and geotechnical conditions are suitable.	The Stormwater Management Plan and Construction Environmental Management Plans for developments adjacent to the bushland areas do not specify any form of scour protraction or flow dissipation where stormwater is to be released. Based on the information reviewed for the audit and audit site inspection, several issues have been identified with stormwater discharge from areas ultimately under ACA's control. These include construction areas and previously developed areas at and near the SAN hospital. Issues with hydrology for the site are outlined in Chapter 7 of the 2014 BMP report. The issues noted in the report include: a pollution incident from a construction area (5 June 2014) (resolved) and stormwater discharge from the SAN hospital into the site at two locations (unresolved) is causing erosion and minor scouring. The bushland team reported that they are working with the managers of the SAN site towards resolving this issue. The work required includes installation of a swale drain at one site and extending a discharge pipe at the other site to remove scour issues. No issues with erosion or scour have occurred for stormwater discharged under ACA's control. Recommendation - ensure any site management plans for areas adjacent to the site incorporate any relevant requirements from the BMP (e.g. scour protection).	Review of available documents, site inspection	Install a dispersal trench when the soil and geotechnical conditions are suitable to disperse all stormwater runoff entering the bushland sufficiently so as not to cause downstream erosion or scour.	On-site: undertaking site inspection of development site, surrounding bush and stream riparian corridors to confirm that stormwater runoff entering the bushland is sufficiently dispersed so as not to cause downstream erosion or scour- e.g. dispersal trench if the soil and geotechnical conditions are suitable. Off-site: reviewing documents relating to management of stormwater discharges, monitoring, and interviewing persons responsible for stormwater management to confirm that stormwater runoff entering the bushland is sufficiently dispersed so as not to cause downstream erosion or scour - e.g. dispersal trench if the soil and geotechnical conditions are suitable.	N
2.1.2 If the discharged runoff is concentrated from a large catchment and/or if there is a nearby watercourse or formal drainage path in the bushland, then the discharge point should be extended to that watercourse and measures are taken to ensure all potential erosion and sedimentation impacts are mitigated.	No requirements for the extension of flow paths have been identified and none were observed during the audit site inspection.	Review of available documents, site inspection	Extend discharge point to that watercourse and measures taken to ensure all potential erosion and sedimentation impacts are mitigated if the discharged runoff is concentrated from a large catchment and/or if there is a nearby watercourse or formal drainage path in the bushland.	On-site: undertaking site inspection of development site, surrounding bush and stream riparian corridors to confirm that, if the discharged runoff is concentrated from a large catchment and/or if there is a nearby watercourse or formal drainage path in the bushland, the discharge point has been extended to that watercourse and measures have been taken to ensure all potential erosion and sedimentation impacts mitigated. Off-site: reviewing documents relating to management of stormwater discharges, monitoring, and interviewing persons responsible for stormwater management to confirm, if the discharged runoff is concentrated from a large catchment and/or if there is a nearby watercourse or formal drainage path in the bushland, the discharge point has been extended to that watercourse and measures have been taken to ensure all potential erosion and sedimentation impacts mitigated.	Y
Hydrology and Nutrient Management Plan - Condition 3	**8.3 Management Strategy:** **8.3.3 Water Sensitive Urban Design Measures** **The following WSUD measures can be utilised for hydrological and nutrient management within the Wahroonga Estate site:** **<u>i. Gross Pollutant Traps</u>** **These devices remove solids typically larger than 5mm such as sediments and litter conveyed by stormwater. They are used as the first treatment elements in a stormwater treatment train and usually are positioned upstream of other more effective treatment measures as a pre-treatment to protect these measures and improve their sustainability and pollutant reduction efficiency.**				
3.0 The following WSUD measures can be utilised for hydrological and nutrient management within the Wahroonga Estate site: use of gross pollutant traps	The 'Wahroonga Estate Flooding and Stormwater Master Plan' (Hyder Consultants 2009) specifies a range of Water Sensitive Urban Design (WSUD) measures to reduce run-off related issues. This plan appears to have been implemented adequately in areas adjacent to the site, such as in the aged care, hospital, school and residential areas adjacent to the site. The plan generally recommends that 'rain gardens' are used to improve the quality of stormwater leaving adjacent areas and this appears to be the preferred option for these areas, although gross pollutant traps are also discussed. No gross pollutant traps have been installed within the bushland area of the site. It should be noted that inspection of water control devices outside the site is outside the scope of the audit and a detailed inspection of these devices and assessment against the Stormwater Management Plan was not undertaken.	Review of available documents	The following WSUD measures can be utilised for hydrological and nutrient management within the Wahroonga Estate site: use of gross pollutant traps	On-site: undertaking site inspection of water bodies for use of Gross Pollutant Traps, where required, to confirm that Water Sensitive Urban Design Measures are being undertaken in accordance with the approved BMP. Off-site: reviewing documents relating to hydrological and nutrient management and interviewing persons responsible for their management to confirm that Water Sensitive Urban Design Measures are being undertaken in accordance with the approved BMP.	Y
3.1 The correct utilisation of the various components of the treatment train is a vital design consideration and requires a holistic approach to their performance specifications and positions in the treatment train. The following WSUD measure can be utilised for hydrological and nutrient management within the Wahroonga Estate site:	Refer to Requirement 3.0 above.	NA	The correct utilisation of the various components of the treatment train is a vital design consideration and requires a holistic approach to their performance specifications and positions in the treatment train. The following WSUD measure can be utilised for hydrological and nutrient management within the Wahroonga Estate site:		NA

3.2 Gross Pollutant Traps These devices remove solids typically larger than 5mm such as sediments and litter conveyed by stormwater. They are used as the first treatment elements in a stormwater treatment train and usually are positioned upstream of other more effective treatment measures as a pre-treatment to protect these measures and improve their sustainability and pollutant reduction efficiency.	Refer to Requirement 3.0 above.	NA	Install a Gross Pollutant Trap where required in accordance with the BMP.	On-site: undertaking site inspection of water bodies for use of Gross Pollutant Traps, where required, to confirm that they are being used as the first treatment elements in a stormwater treatment train and are positioned upstream of other more effective treatment measures as a pre-treatment to protect these measures and improve their sustainability and pollutant reduction efficiency. Off-site: reviewing water quality monitoring reports, incidents and interviewing persons responsible for water quality management to confirm that Gross Pollutant Traps are being used as the first treatment elements in a stormwater treatment train and are positioned upstream of other more effective treatment measures as a pre-treatment to protect these measures and improve their sustainability and pollutant reduction efficiency.	NA
Hydrology and Nutrient Management Plan - Condition 4	**8.3 Management Strategy:** **8.3.3 Water Sensitive Urban Design Measures** **The following WSUD measures can be utilised for hydrological and nutrient management within the Wahroonga Estate site:** **ii. Bioretention Systems (also known as biofiltration systems or rain-gardens)** **They promote the removal of particulate and soluble contaminants by passing stormwater through a filter medium, either for infiltration into surrounding soils, or for collection by an underdrain. Compared to other measures, these systems are usually very effective in removing stormwater pollutants. When designed appropriately, they can provide multiple mechanisms to address a number of bushland and aquatic health protection objectives as follows:** **· Provide extended detention as part of the above-ground storage component of the system. This component can be used for flow management benefits such as to attenuate bank-full erosive flows.** **· Effectively treat stormwater pollutants such as Total Suspended Solids and nutrients. A range of factors affect the treatment performance of the bioretention systems, including the type and composition of filter media (e.g. loamy sand), the presence and type of vegetation used, and the presence of design enhancements such as the use of a submerged zone to enhance de-nitrification.** **· Promoting infiltration of filtered stormwater into the surrounding soils by not lining the base and the sides of the filtration system. This would help to reduce incidents of flow occurrences and return excess stormwater back to its natural water cycle. Earlier investigation indicated that the site is not within high risk salinity impact and its close proximity to bushland and riparian corridors makes infiltration into the site's soil a sustainable practice.**				
4.0 The following WSUD measures can be utilised for hydrological and nutrient management within the Wahroonga Estate site:	The 'Wahroonga Estate Flooding and Stormwater Master Plan' (Hyder Consultants 2009) specifies a range of Water Sensitive Urban Design (WSUD) measures to reduce run-off related issues. This plan appears to have been implemented adequately in areas adjacent to the site, such as in the aged care, hospital, school and residential areas adjacent to the site. Some areas of scour associated with stormwater discharge from the SAN hospital site have been identified (refer to Condition 2.0). The plan generally recommends that 'rain gardens' (a bio retention system) are used to improve the quality of stormwater leaving adjacent areas and this appears to be the preferred option for these areas, although gross pollutant traps are also discussed. No gross pollutant traps have been installed within the bushland area of the site. It should be noted that inspection of water control devices outside the site is outside the scope of the audit and a detailed inspection of these devices and assessment against the Stormwater Management Plan was not undertaken.	Review of available documents	The following WSUD measures can be utilised for hydrological and nutrient management within the Wahroonga Estate site: bioretention systems	On-site: undertaking site inspection of water bodies for use of Bioretention Systems, where required, to confirm that Water Sensitive Urban Design Measures are being undertaken in accordance with the approved BMP. Off-site: reviewing documents relating to hydrological and nutrient management and interviewing persons responsible for their management to confirm that Water Sensitive Urban Design Measures are being undertaken in accordance with the approved BMP.	Y
4.1 Bioretention Systems The correct utilisation of the various components of the treatment train is a vital design consideration and requires a holistic approach to their performance specifications and positions in the treatment train. The following WSUD measure can be utilised for hydrological and nutrient management within the Wahroonga Estate site:	Refer to Requirement 4.0 above.	NA	The correct utilisation of the various components of the treatment train is a vital design consideration and requires a holistic approach to their performance specifications and positions in the treatment train. The following WSUD measure can be utilised for hydrological and nutrient management within the Wahroonga Estate site:		NA

4.2 Bioretention Systems (also known as biofiltration systems or rain-gardens) Bioretention Systems promote the removal of particulate and soluble contaminants by passing stormwater through a filter medium, either for infiltration into surrounding soils, or for collection by an underdrain. Compared to other measures, these systems are usually very effective in removing stormwater pollutants. When designed appropriately, they can provide multiple mechanisms to address a number of bushland and aquatic health protection objectives as follows:	Refer to Requirement 4.0 above.	NA	Install Bioretention Systems where appropriate in accordance with the BMP.	On-site: undertaking site inspection of water bodies for use of Bioretention Systems, where required, to confirm that they are being effective in removing stormwater pollutants and providing mechanisms to successfully address bushland and aquatic health protection objectives. Off-site: reviewing documents relating to hydrological and nutrient management and interviewing persons responsible for their management & monitoring to confirm that Bioretention Systems are being effective in removing stormwater pollutants and providing mechanisms to successfully address bushland and aquatic health protection objectives.	Y
4.2.1 Provide extended detention as part of the above-ground storage component of the system. This component can be used for flow management benefits such as to attenuate bank-full erosive flows.	Refer to Requirement 4.0 above.	NA	Provide extended detention as part of the above-ground storage component of the system. This component can be used for flow management benefits such as to attenuate bank-full erosive flows.	On-site: undertaking site inspection of water bodies and use of extended detention basins to determine effectiveness, where applicable. Off-site: reviewing documents relating to Bioretention Systems and interviewing persons responsible for their management & monitoring to confirm that extended detention basins have been provided as part of the above-ground storage component of the system and are being effective in managing flows and minimising bank-full erosive flows.	Y
4.2.2 Effectively treat stormwater pollutants such as Total Suspended Solids and nutrients. A range of factors affect the treatment performance of the bioretention systems, including the type and composition of filter media (e.g. loamy sand), the presence and type of vegetation used, and the presence of design enhancements such as the use of a submerged zone to enhance de-nitrification.	Refer to Requirement 4.0 above.	NA	Effective treatment of stormwater pollutants such as Total Suspended Solids and nutrients.	On-site: undertaking site inspection of Bioretention Systems to confirm that treatment of stormwater pollutants (e.g. Total suspended Solids and nutrients) are being effectively treated. Off-site: reviewing water quality monitoring reports and interviewing persons responsible for water quality management to confirm that treatment of stormwater pollutants (e.g. Total suspended Solids and nutrients) are being effectively treated and that a range of influencing factors have been considered in relation to the performance of the bioretention systems, including: the type and composition of filter media (e.g. loamy sand); the presence and type of vegetation used; and the presence of design enhancements such as the use of a submerged zone to enhance de-nitrification.	Y
4.2.3 Promoting infiltration of filtered stormwater into the surrounding soils by not lining the base and the sides of the filtration system. This would help to reduce incidents of flow occurrences and return excess stormwater back to its natural water cycle. Earlier investigation indicated that the site is not within high risk salinity impact and its close proximity to bushland and riparian corridors makes infiltration into the site's soil a sustainable practice.	Refer to Requirement 4.0 above.	NA	Promote infiltration of filtered stormwater into the surrounding soils by not lining the base and the sides of the filtration system.	On-site: undertaking site inspection of Bioretention Systems to determine effectiveness, where applicable, and confirm that infiltration of filtered stormwater into the surrounding soils is being promoted to help reduce incidents of flow occurrences and return excess stormwater back to its natural water cycle. Off-site: reviewing water quality monitoring reports, incidents and interviewing persons responsible for water quality management to confirm that infiltration of filtered stormwater into the surrounding soils is being effectively promoted to help reduce incidents of flow occurrences and return excess stormwater back to its natural water cycle.	Y
Hydrology and Nutrient Management Plan - Condition 5	**8.3 Management Strategy:** **8.3.3 Water Sensitive Urban Design Measures** **The following WSUD measures can be utilised for hydrological and nutrient management within the Wahroonga Estate site:** **<u>iii. Extended Detention Basins.</u>** **These can be incorporated into the Onsite Detention basins usually designed for flood control in new developments by utilising part of the provided storage for extended detention. They specifically target smaller floods (estimated to be 1.5-2 year ARI storm events) that approach or exceed stream bank-full and, thus cause stability and scour problems to the channel form in natural creek systems. More information about this approach can be obtained from the most recent Onsite Stormwater Detention policy and handbook for the Upper Parramatta River Catchment Trust.**				

5.0 The following WSUD measures can be utilised for hydrological and nutrient management within the Wahroonga Estate site: extended detention basin. These can be incorporated into the Onsite Detention basins usually designed for flood control in new developments by utilising part of the provided storage for extended detention.	The 'Wahroonga Estate Flooding and Stormwater Master Plan' (Hyder Consultants 2009) specifies a range of Water Sensitive Urban Design (WSUD) measures to reduce run-off related issues. This plan appears to have been implemented adequately in areas adjacent to the site, such as in the aged care, hospital, school and residential areas adjacent to the site. The plan specifies locations and details of a number of sediment basins in areas adjacent to the site, which all appear to have been implemented as part of the relevant construction works. It should be noted however, that inspection of water control devices outside the site is outside the scope of the audit and a detailed inspection of these devices and assessment against the Stormwater Management Plan was not undertaken.	Review of available documents	The following WSUD measures can be utilised for hydrological and nutrient management within the Wahroonga Estate site: extended detention basin. These can be incorporated into the Onsite Detention basins usually designed for flood control in new developments by utilising part of the provided storage for extended detention.	On-site: undertaking site inspection of water bodies for use of extended detention basins, where required, to confirm that Water Sensitive Urban Design Measures are being effectively undertaken in accordance with the approved BMP. Off-site: reviewing water quality monitoring reports, incidents and interviewing persons responsible for water quality management to confirm that Water Sensitive Urban Design Measures are being effectively undertaken in accordance with the approved BMP.	Y
5.1 The correct utilisation of the various components of the treatment train is a vital design consideration and requires a holistic approach to their performance specifications and positions in the treatment train. The following WSUD measure can be utilised for hydrological and nutrient management within the Wahroonga Estate site:	Refer to Requirement 5.0	NA	The correct utilisation of the various components of the treatment train is a vital design consideration and requires a holistic approach to their performance specifications and positions in the treatment train. The following WSUD measure can be utilised for hydrological and nutrient management within the Wahroonga Estate site:		NA
5.2 Extended Detention Basins These can be incorporated into the Onsite Detention basins usually designed for flood control in new developments by utilising part of the provided storage for extended detention. They specifically target smaller floods (estimated to be 1.5-2 year ARI storm events) that approach or exceed stream bank-full and, thus cause stability and scour problems to the channel form in natural creek systems. More information about this approach can be obtained from the most recent Onsite Stormwater Detention policy and handbook for the Upper Parramatta River Catchment Trust.	Refer to Requirement 5.0	NA	Install Extended retention basins as required.	On-site: undertaking site inspection of water bodies for use of extended detention basins, where required, to confirm that these have been incorporated into the Onsite Detention basins by utilising part of the provided storage for extended detention. Off-site: reviewing water quality monitoring reports, incidents and interviewing persons responsible for water quality management, to confirm the effectiveness of extended detention basins.	NA
Hydrology and Nutrient Management Plan - Condition 6	**8.3 Management Strategy:** **<u>8.3.3 Water Sensitive Urban Design Measures</u>** **The following WSUD measures can be utilised for hydrological and nutrient management within the Wahroonga Estate site:** **<u>iv. Rainwater Tanks</u>** **Rainwater tanks can be incorporated into the proposed residential, commercial and hospital buildings within the Wahroonga Estate development site. Roof water is collected in these rainwater tanks for reuse for non-potable demands such as garden watering, irrigation, washdown, cold water supply of washing machines and toilet flushing. First flush, which usually contains washed-off pollutants from roof areas should be diverted away from these rainwater tanks. Effective use of rainwater tanks can reduce the directly connected impervious area of a catchment, and help to reduce flow incidents and attenuate medium flows to downstream sensitive environments.**				
6.0 The following WSUD measures can be utilised for hydrological and nutrient management within the Wahroonga Estate site: rainwater tanks. Rainwater tanks can be incorporated into the proposed residential, commercial and hospital buildings within the Wahroonga Estate development site.	The 'Wahroonga Estate Flooding and Stormwater Master Plan' (Hyder Consultants 2009) specifies a range of Water Sensitive Urban Design (WSUD) measures to reduce run-off related issues. This plan appears to have been implemented adequately in areas adjacent to the site, such as in the aged care, hospital, school and residential areas adjacent to the site. Some areas of scour associated with stormwater discharge from the SAN hospital site have been identified (refer to Condition 2.0). The plan specifies requirements under KMC's development control plans for rainwater tanks and on-site detention. The use of rainwater tanks is noted as a possible WSUD measure that can be implemented and the auditors note that it is outside the remit of the BMP to require these to be implemented on adjacent properties. ACA have confirmed that Rain water tanks have been installed within the site.	Review of available documents	The following WSUD measures can be utilised for hydrological and nutrient management within the Wahroonga Estate site: rainwater tanks. Rainwater tanks can be incorporated into the proposed residential, commercial and hospital buildings within the Wahroonga Estate development site.	On-site: undertaking site inspection of proposed residential, commercial and hospital buildings within the Wahroonga Estate development site for use of rainwater tanks, where required, to confirm that Water Sensitive Urban Design Measures are being effectively undertaken in accordance with the approved BMP. Off-site: reviewing water quality monitoring reports and interviewing persons responsible for water quality management to confirm that Water Sensitive Urban Design Measures are being effectively undertaken in accordance with the approved BMP.	Y

6.1 The correct utilisation of the various components of the treatment train is a vital design consideration and requires a holistic approach to their performance specifications and positions in the treatment train. The following WSUD measure can be utilised for hydrological and nutrient management within the Wahroonga Estate site:	Refer to Requirement 6.0 above.	NA	The correct utilisation of the various components of the treatment train is a vital design consideration and requires a holistic approach to their performance specifications and positions in the treatment train. The following WSUD measure can be utilised for hydrological and nutrient management within the Wahroonga Estate site:		NA
6.2 Rainwater Tanks Rainwater tanks can be incorporated into the proposed residential, commercial and hospital buildings within the Wahroonga Estate development site. Roof water is collected in these rainwater tanks for reuse for non-potable demands such as garden watering, irrigation, wash down, cold water supply of washing machines and toilet flushing. First flush, which usually contains washed-off pollutants from roof areas should be diverted away from these rainwater tanks. Effective use of rainwater tanks can reduce the directly connected impervious area of a catchment, and help to reduce flow incidents and attenuate medium flows to downstream sensitive environments.	Refer to Requirement 6.0 above.	NA	Install rainwater tanks as required into the proposed residential, commercial and hospital buildings within the Wahroonga Estate development site.	On-site: undertaking site inspection of proposed residential, commercial and hospital buildings within the Wahroonga Estate development site for use of rainwater tanks, where required, to confirm that Water Sensitive Urban Design Measures are being effectively undertaken to reduce the directly connected impervious area of a catchment, or help to reduce flow incidents and attenuate medium flows to downstream sensitive environments. Off-site: reviewing water quality monitoring reports and interviewing persons responsible for water quality management to determine if rainwater tanks would be beneficial.	NA
Hydrology and Nutrient Management Plan - Condition 7	**8.3 Management Strategy:** **8.3.3 Water Sensitive Urban Design Measures** **The following WSUD measures can be utilised for hydrological and nutrient management within the Wahroonga Estate site:** **<u>v. Wetlands and Ponds</u>** **These are usually used as stormwater treatment measures for the removal of fine suspended solids and associated nutrients. They are less efficient (i.e. require larger treatment area) than bioretention system in meeting the treatment targets but provide greater visual quality, habitat biodiversity and amenity for the site than bioretention systems. They can be incorporated into OSD systems and provide extended detention and water quality control benefits. Ponds can be used as effective measure for stormwater reuse.**				
7.0 The following WSUD measures can be utilised for hydrological and nutrient management within the Wahroonga Estate site: wetlands and ponds. They can be incorporated into OSD systems and provide extended detention and water quality control benefits. Ponds can be used as effective measure for stormwater reuse.	The 'Wahroonga Estate Flooding and Stormwater Master Plan' (Hyder Consultants 2009) specifies a range of Water Sensitive Urban Design (WSUD) measures to reduce run-off related issues. This plan appears to have been implemented adequately in areas adjacent to the site, such as in the aged care, hospital, school and residential areas adjacent to the site. Some areas of scour associated with stormwater discharge from the SAN hospital site have been identified (refer to Condition 2.0). The plan generally recommends that 'rain gardens' and detention basins are used to improve the quality of stormwater leaving adjacent areas. The plan specifies locations for these in adjacent areas and these appear to have been installed as required by the plan. It should be noted however, that inspection of water control devices outside the site is outside the scope of the audit and a detailed inspection of these devices and assessment against the Stormwater Management Plan was not undertaken.	Review of available documents	The following WSUD measures can be utilised for hydrological and nutrient management within the Wahroonga Estate site: wetlands and ponds. hey can be incorporated into OSD systems and provide extended detention and water quality control benefits. Ponds can be used as effective measure for stormwater reuse.	On-site: undertaking site inspection of installed wetlands and ponds, if applicable, to confirm that Water Sensitive Urban Design Measures are being effectively undertaken in accordance with the approved BMP. Off-site: reviewing water quality monitoring reports and interviewing persons responsible for water quality management to confirm that Water Sensitive Urban Design Measures are being effectively undertaken in accordance with the approved BMP.	Y
7.1 The correct utilisation of the various components of the treatment train is a vital design consideration and requires a holistic approach to their performance specifications and positions in the treatment train. The following WSUD measure can be utilised for hydrological and nutrient management within the Wahroonga Estate site:	Refer to Requirement 7.0 above	NA	The correct utilisation of the various components of the treatment train is a vital design consideration and requires a holistic approach to their performance specifications and positions in the treatment train. The following WSUD measure can be utilised for hydrological and nutrient management within the Wahroonga Estate site:		NA

7.2 Wetlands and Ponds These are usually used as stormwater treatment measures for the removal of fine suspended solids and associated nutrients. They are less efficient (i.e. require larger treatment area) than bioretention system in meeting the treatment targets but provide greater visual quality, habitat biodiversity and amenity for the site than Bioretention systems. They can be incorporated into OSD systems and provide extended detention and water quality control benefits. Ponds can be used as effective measure for stormwater reuse.	Refer to Requirement 7.0 above	NA	Install wetlands and ponds where required.	On-site: undertaking site inspection of installed wetlands and ponds, if applicable, to confirm whether wetlands and ponds have been incorporated into OSD systems to provide extended detention and water quality control benefits, habitat biodiversity and enable effective stormwater reuse. Off-site: reviewing water quality monitoring reports and interviewing persons responsible for water quality management to determine if wetlands and ponds would be beneficial and confirm whether these have been incorporated effectively into OSD systems to provide extended detention and water quality control benefits, habitat biodiversity and enable effective stormwater reuse.	NA
Hydrology and Nutrient Management Plan - Condition 8	**8.3 Management Strategy:** **8.3.3 Water Sensitive Urban Design Measures** **The following WSUD measures can be utilised for hydrological and nutrient management within the Wahroonga Estate site:** **<u>vi. Vegetated Swales</u>** **These are open channel systems which use vegetation to aid the removal of sediment and suspended solids with some infiltration into the soil. These systems are often used in association with other stormwater management measures to achieve the required treatment targets.**				
8.0 The following WSUD measures can be utilised for hydrological and nutrient management within the Wahroonga Estate site: vegetated swales.	The 'Wahroonga Estate Flooding and Stormwater Master Plan' (Hyder Consultants 2009) specifies a range of Water Sensitive Urban Design (WSUD) measures to reduce run-off related issues. This plan appears to have been implemented adequately in areas adjacent to the site, such as in the aged care, hospital, school and residential areas adjacent to the site. Some areas of scour associated with stormwater discharge from the SAN hospital site have been identified (refer to Condition 2.0). The plan generally recommends that 'rain gardens' and detention basins are used to improve the quality of stormwater leaving adjacent areas. The plan specifies locations for these in adjacent areas and these appear to have been installed as required by the plan. It should be noted however, that inspection of water control devices outside the site is outside the scope of the audit and a detailed inspection of these devices and assessment against the Stormwater Management Plan was not undertaken.	Review of available documents	The following WSUD measures can be utilised for hydrological and nutrient management within the Wahroonga Estate site: vegetated swales.	On-site: undertaking site inspection of installed vegetated swales, if applicable, to confirm that Water Sensitive Urban Design Measures are being effectively undertaken in accordance with the approved BMP. Off-site: reviewing water quality monitoring reports and interviewing persons responsible for water quality management to determine if vegetated swales would be beneficial and to confirm that Water Sensitive Urban Design Measures are being effectively undertaken in accordance with the approved BMP.	Y
8.1 The correct utilisation of the various components of the treatment train is a vital design consideration and requires a holistic approach to their performance specifications and positions in the treatment train. The following WSUD measure can be utilised for hydrological and nutrient management within the Wahroonga Estate site:	Refer to Requirement 8.0 above	NA	The correct utilisation of the various components of the treatment train is a vital design consideration and requires a holistic approach to their performance specifications and positions in the treatment train. The following WSUD measure can be utilised for hydrological and nutrient management within the Wahroonga Estate site:		NA
8.2 Vegetated Swales These are open channel systems which use vegetation to aid the removal of sediment and suspended solids with some infiltration into the soil. These systems are often used in association with other stormwater management measures to achieve the required treatment targets.	Refer to Requirement 8.0 above. Vegetated swales have been implemented on site	NA	Install vegetation swales as required.	On-site: undertaking site inspection of installed vegetated swales, if applicable, to confirm that swales have been used as an effective aid in the removal of sediment and suspended solids. Off-site: reviewing water quality monitoring reports and interviewing persons responsible for water quality management to determine if vegetated swales would be beneficial, and if applicable, whether they have been an effective aid in the removal of sediment and suspended solids to achieve the required treatment targets.	Y

Hydrology and Nutrient Management Plan - Condition 9	**8.3 Management Strategy:** **8.3.3 Water Sensitive Urban Design Measures** **The following WSUD measures can be utilised for hydrological and nutrient management within the Wahroonga Estate site:** **<u>vii. Porous Paving</u>** **Porous paving can be used as a stormwater management device by enabling infiltration and retention of runoff. When applied correctly, they can help to reduce discharged stormwater volume, attenuate flows and improve stormwater quality. Permeable interlocking concrete pavements have been used successfully in Australia. The following issues should be considered to ensure the sustainability and longevity of porous paving systems:** **· Geotechnical advice should be obtained and testing carried out where infiltration devices are proposed;** **· Permeable pavement should not be placed downstream of sediment sources, unless pre-filtering devices are installed; and** **· Care should be taken in the establishment of vegetation and planting density; expert advice should be sought.**				
9.0 The following WSUD measures can be utilised for hydrological and nutrient management within the Wahroonga Estate site: Porous paving. The following issues should be considered to ensure the sustainability and longevity of porous paving systems: · Geotechnical advice should be obtained and testing carried out where infiltration devices are proposed; · Permeable pavement should not be placed downstream of sediment sources, unless pre-filtering devices are installed; and · Care should be taken in the establishment of vegetation and planting density; expert advice should be sought.	Porous paving is not referred to in the Stormwater Management Plan developed for adjacent developments. Given the range of other WSUD mechanisms referred to and the consideration of KMC's development control plans in this document, and the lack of any issues with water coming from adjacent developed areas under ACA's control this is not considered to be a key issue. Some areas of scour associated with stormwater discharge from the SAN hospital site have been identified. The bushland team reported that they are working with the managers of the SAN site towards resolving this issue. The work required includes installation of a swale drain at one site and extending a discharge pipe at the other site to remove scour issues. No issues with erosion or scour have occurred for stormwater discharged under ACA's control. Recommendation - The BMP should reflect the specifications of relevant approved documents that have been developed to specifically address water management issues, such as the Stormwater Management Plan and KMC's development control plans.	Review of available documents	The following WSUD measures can be utilised for hydrological and nutrient management within the Wahroonga Estate site: Porous paving. The following issues should be considered to ensure the sustainability and longevity of porous paving systems:· Geotechnical advice should be obtained and testing carried out where infiltration devices are proposed; · Permeable pavement should not be placed downstream of sediment sources, unless pre-filtering devices are installed; and · Care should be taken in the establishment of vegetation and planting density; expert advice should be sought.	On-site: undertaking site inspection of installed infiltration devices i.e. porous paving, if applicable, to confirm that Water Sensitive Urban Design Measures are being effectively undertaken in accordance with the approved BMP. Off-site: reviewing water quality monitoring reports and interviewing persons responsible for water quality management to determine if porous paving would be beneficial and to confirm that Water Sensitive Urban Design Measures are being effectively undertaken in accordance with the approved BMP.	O
9.1 The correct utilisation of the various components of the treatment train is a vital design consideration and requires a holistic approach to their performance specifications and positions in the treatment train. The following WSUD measure can be utilised for hydrological and nutrient management within the Wahroonga Estate site:	Refer to Requirement 9.0 above.	NA	The correct utilisation of the various components of the treatment train is a vital design consideration and requires a holistic approach to their performance specifications and positions in the treatment train. The following WSUD measure can be utilised for hydrological and nutrient management within the Wahroonga Estate site:		NA
9.2 Porous Paving Porous paving can be used as a stormwater management device by enabling infiltration and retention of runoff. When applied correctly, they can help to reduce discharged stormwater volume, attenuate flows and improve stormwater quality. Permeable interlocking concrete pavements have been used successfully in Australia. The following issues should be considered to ensure the sustainability and longevity of porous paving systems:	Refer to Requirement 9.0 above. More explanatory text. Do not know if 9.0 covers this sufficiently	NA	Install porous paving as required.	On-site: undertaking site inspection of installed infiltration devices, i.e. porous paving, if applicable, to confirm that it has been effective in reducing discharged stormwater volume, attenuating flows and improving stormwater quality. Off-site: reviewing water quality monitoring reports and interviewing persons responsible for water quality management to determine if porous paving would be beneficial and, if applicable, to confirm that porous paving has been effective in reducing discharged stormwater volume, attenuating flows and improving stormwater quality.	NA
9.2.1 Geotechnical advice should be obtained and testing carried out where infiltration devices are proposed;	Refer to Requirement 9.0 above. More explanatory text. Do not know if 9.0 covers this sufficiently	NA	Obtain geotechnical advice and have testing carried out where infiltration devices are proposed.	On-site: undertaking site inspection of installed infiltration devices, if applicable. Off-site: reviewing water quality monitoring reports, records of geotechnical advice and interviewing persons responsible for water quality management to determine if porous paving would be beneficial and to confirm that, where infiltration devices have been proposed, Geotechnical advice has been obtained and testing carried out.	NA

9.2.2. Permeable pavement should not be placed downstream of sediment sources, unless pre-filtering devices are installed; and	Refer to Requirement 9.0 above. More explanatory text. Do not know if 9.0 covers this sufficiently	NA	Do not install permeable pavement downstream of sediment sources, unless pre-filtering devices are installed.	On-site: undertaking site inspection of installed permeable pavement if applicable, to confirm that permeable pavement has not been placed downstream of sediment sources, unless pre-filtering devices have also been installed.	NA
9.2.3 Care should be taken in the establishment of vegetation and planting density; expert advice should be sought.	Refer to Requirement 9.0 above. More explanatory text. Do not know if 9.0 covers this sufficiently	NA	Obtain expert advice and take care in the establishment of vegetation and planting density.	On-site: undertaking site inspection of vegetation, if applicable, to confirm that the establishment of vegetation and planting densities is in accordance with expert advice. Off-site: reviewing monitoring reports, records of expert advice and interviewing persons responsible for water quality to confirm that expert advice was sought prior to the establishment of vegetation and planting densities.	NA
Hydrology and Nutrient Management Plan - Condition 10	**8.3.4 Non-structural Stormwater Management Measures:** **Non-structural stormwater management measures mainly include:** **<u>i. Development Assessment & Control</u>** **Enforcement of the proposed management strategy elements, especially the structural stormwater management measures on developments within the Wahroonga Estate site is the cornerstone of implementing this proposed strategy. It is therefore, proposed that each development within the Wahroonga Estate site should demonstrate that it incorporates best practice WSUD measures to mitigate the impact of increasing the development's impervious areas.** **There should be a condition of approval on each development within the Wahroonga Estate site to meet all the bushland and aquatic health protection objectives stated earlier in Section 8.2 of this document and achieve a net positive environmental outcome compared to the existing site development condition. Further demonstration of this condition and how to use available analytical tools for this purpose is presented in Section 4.0 of this document.**				
10.0 Non-structural stormwater management measures mainly include: development assessment and control. There should be a condition of approval on each development within the Wahroonga Estate site to meet all the bushland and aquatic health protection objectives stated earlier in Section 8.2 of this document and achieve a net positive environmental outcome compared to the existing site development condition.	Publicly available development consents were reviewed that were applicable to developments of adjacent sites (i.e. Wahroonga Adventist School and SAN Hospital additions). No Council approvals were made available to the auditor for review. Neither of the state level approvals refer to the BMP, the Stormwater Management Plan (Hyder 2009) or the specific requirements for WSUD of the BMP. The approvals do refer to KMC's water sensitive design DCP, the Blue Book and another Stormwater Management Plan (assumed to be more site specific). It is noted that it is not in ACA's powers to make approval authorities implement development approval conditions. Recommendation - The BMP should be revised to remove any requirements that are outside the remit of ACA.		Non-structural stormwater management measures mainly include: development assessment and control. There should be a condition of approval on each development within the Wahroonga Estate site to meet all the bushland and aquatic health protection objectives stated earlier in Section 8.2 of this document and achieve a net positive environmental outcome compared to the existing site development condition.	Off-site: reviewing documents relating to development assessment and control to confirm that Non-structural stormwater management measures are being effectively undertaken in accordance with the approved BMP.	NA
10.1 Non-structural stormwater management measures mainly include:	Refer to Requirement 10.0 above	NA	Non-structural stormwater management measures mainly include:		NA
10.2 Development Assessment & Control Enforcement of the proposed management strategy elements, especially the structural stormwater management measures on developments within the Wahroonga Estate site is the cornerstone of implementing this proposed strategy. Each development within the Wahroonga Estate site should demonstrate that it incorporates best practice WSUD measures to mitigate the impact of increasing the development's impervious areas.	Publicly available development consents were reviewed that were applicable to developments of adjacent sites (i.e. Wahroonga Adventist School and SAN Hospital additions). No Council approvals were made available to the auditor for review. Neither of the state level approvals refer to the BMP, the Stormwater Management Plan (Hyder 2009) or the specific requirements for WSUD of the BMP. The approvals do refer to KMC's water sensitive design DCP, the Blue Book and another Stormwater Management Plan (assumed to be more site specific). It is noted that it is not in ACA's powers to make approval authorities implement development approval conditions. Recommendation - The BMP should be revised to remove any requirements that are outside the remit of ACA.	NA	Enforce proposed management strategy elements, especially the structural stormwater management measures on developments within the Wahroonga Estate site is the cornerstone of implementing this proposed strategy.	Off-site: reviewing documents relating to development assessment and control that provide evidence of enforcing proposed management strategy elements and confirm that each development within the Wahroonga Estate site incorporates best practice WSUD measures to mitigate the impact of increasing the development's impervious areas.	N
10.2.1 There should be a condition of approval on each development within the Wahroonga Estate site to meet all the bushland and aquatic health protection objectives stated earlier in Section 8.2 of the BMP and achieve a net positive environmental outcome compared to the existing site development condition.	Publicly available development consents were reviewed that were applicable to developments of adjacent sites (i.e. Wahroonga Adventist School and SAN Hospital additions). No Council approvals were made available to the auditor for review. Neither of the state level approvals refer to the BMP, the Stormwater Management Plan (Hyder 2009) or the specific requirements for WSUD of the BMP. The approvals do refer to KMC's water sensitive design DCP, the Blue Book and another Stormwater Management Plan (assumed to be more site specific). It is noted that it is not in ACA's powers to make approval authorities implement development approval conditions. Recommendation - The BMP should be revised to remove any requirements that are outside the remit of ACA.	NA	Achieve a net positive environmental outcome compared to the existing site development condition to meet all the bushland and aquatic health protection objectives stated earlier in Section 8.2 of the BMP.	Off-site: reviewing documents relating to monitoring reports and existing site development health projection objectives to confirm that there is a condition of approval on each development within the Wahroonga Estate site to meet all the bushland and aquatic health protection objectives stated earlier in Section 8.2 of the BMP and achieve a net positive environmental outcome compared to the existing site development condition.	NA
10.2.2 Further demonstration of this condition and how to use available analytical tools for this purpose is presented in Section 4.0 of the BMP.	Refer to Requirement 10.0 above	NA	Review Section 4.0 of the Wahroonga Estate BMP for condition and how to use available analytical tools.	Off-site: reviewing documents providing evidence of using analytical tools & confirming that actions have been undertaken in accordance with Section 4.0 of the BMP.	NA

Hydrology and Nutrient Management Plan - Condition 11	**8.3.4 Non-structural Stormwater Management Measures:** **Non-structural stormwater management measures mainly include:** **<u>ii. Community Education and Participation</u>** **Community education and participation can play a significant role in the improvement of stormwater quality. The impact of allowing a can to leak oil, washing paint brushes into drains, not cleaning up after dogs or inappropriate use of household chemicals may seem relatively minor. However, when the individual impacts are added across the catchment, these actions become a significant source of pollution entering the downstream sensitive environments. People are often not aware of the negative impacts of their activities. However, once they are aware and have learnt simple solutions to reduce or avoid causing stormwater pollution, changes to their behaviour are more likely.** **Of specific relevance here is the education of the community living and working in the Wahroonga Estate development site through specific programs such as drain stencilling, stormwater education campaigns, involving local schools and residents in the management and monitoring of the local bushland and streams.**				
11.0 Non-structural stormwater management measures mainly include: community education and participation. Education of the community living and working in the Wahroonga Estate development site through specific programs such as drain stencilling, stormwater education campaigns, involving local schools and residents in the management and monitoring of the local bushland and streams.	The bushland team provide community newsletters to local residents on a regular basis. The June 2015 Newsletter was sighted raising various issues covered by the BMP, such as pet control issues, feeding native wildlife, pollution of local waterways, weed control and rubbish dumping.	Review of available documents, staff interviews	Non-structural stormwater management measures mainly include: community education and participation. Education of the community living and working in the Wahroonga Estate development site through specific programs such as drain stencilling, stormwater education campaigns, involving local schools and residents in the management and monitoring of the local bushland and streams.	On-site: undertaking site inspection of education displays on site to confirm that measures are being effectively undertaken in accordance with the approved BMP. Off-site: reviewing educational information developed to promote community engagement and knowledge and interviewing persons responsible for education to confirm that measures are being effectively undertaken in accordance with the approved BMP.	Y
11.1 Non-structural stormwater management measures mainly include:	Refer to Requirement 11.0 above	NA	Non-structural stormwater management measures mainly include:		NA
11.2 Community Education and Participation Community education and participation can play a significant role in the improvement of stormwater quality. The impact of allowing a can to leak oil, washing paint brushes into drains, not cleaning up after dogs or inappropriate use of household chemicals may seem relatively minor. However, when the individual impacts are added across the catchment, these actions become a significant source of pollution entering the downstream sensitive environments. People are often not aware of the negative impacts of their activities. However, once they are aware and have learnt simple solutions to reduce or avoid causing stormwater pollution, changes to their behaviour are more likely.	Refer to Requirement 11.0 above		Promote community education and participation can play a significant role in the improvement of stormwater quality.	On-site: undertaking site inspection of education displays on site to confirm that community education and participation is being encouraged. Off-site: reviewing educational information developed to promote community engagement and knowledge. Interviewing persons responsible for education.	NA
11.2.1 Of specific relevance here is the education of the community living and working in the Wahroonga Estate development site through specific programs such as drain stencilling, stormwater education campaigns, involving local schools and residents in the management and monitoring of the local bushland and streams.	The bushland team provide community newsletters to local residents on a regular basis. The June 2015 Newsletter was sighted raising various issues covered by the BMP, such as pet control issues, feeding native wildlife, pollution of local waterways, weed control and rubbish dumping. No specific community education programs such as drain stencilling, stormwater education campaigns, involving local schools and residents in the management and monitoring of local bushland and streams.		Educate the community living and working in the Wahroonga Estate development site through specific programs such as drain stencilling, stormwater education campaigns, involving local schools and residents in the management and monitoring of the local bushland and streams.	On-site: undertaking site inspection of education displays on site to confirm that the community living and working in the Wahroonga Estate development site is being educated and encouraged to participate in specific programs such as drain stencilling, stormwater education campaigns, involving local schools and residents in the management and monitoring of the local bushland and streams. Off-site: reviewing educational information developed to promote community engagement and knowledge & interviewing persons responsible for education to confirm that the community living and working in the Wahroonga Estate development site is being educated and encouraged to participate in specific programs such as drain stencilling, stormwater education campaigns, involving local schools and residents in the management and monitoring of the local bushland and streams.	N

Hydrology and Nutrient Management Plan - Condition 12	**8.3.4 Non-structural Stormwater Management Measures:** **Non-structural stormwater management measures mainly include:** **<u>iii. Council Management Activities</u>** **Local councils can influence the quality of stormwater within a catchment when planning and managing its construction and maintenance activities and during its day to day management decisions. It should be noted that catchments beyond the site boundaries extend into Ku-ring-gai and Hornsby local government areas. These catchments have more impact on the hydrology and water quality of the protected bushland and riparian zones than the local catchments within the site. Table 8.1 lists some council management activities that have a direct or indirect influence on stormwater management of these activities.** **Table 8.1 COUNCIL ACTIVITIES AND THEIR POTENTIAL INFLUENCE ON STORMWATER** **Council activities** / **Potential influence on stormwater** Environmental planning — Section 94 for stormwater management Stormwater management practices for new developments. Building approvals and inspection — Soil and water management for building sites Parks and gardens — Maintenance activities (eg. tree planting, fertiliser application, grass cutting). Road & drainage system maintenance — Sediment and waste introduction Litter and sediment management Waste collection — Litter management Road & drainage design — Introduction of WSUD Finance — Budgets for stormwater management				
12.0 Non-structural stormwater management measures mainly include: council management activities. Council management activities are listed in Table 8.1.	These requirements are outside the ability of ACA to address or implement and hence are not considered relevant to the audit. Recommendation - the BMP should only specify actions that the proponent can implement.	Review of available documents	Non-structural stormwater management measures mainly include: council management activities. Council management activities are listed in Table 8.1.	Off-site: reviewing documentation relating to reviews undertaken to identify council management activities influencing stormwater management to confirm that measures are being effectively undertaken in accordance with the approved BMP.	U
12.1 Non-structural stormwater management measures mainly include:	These requirements are outside the ability of ACA to address or implement and hence are not considered relevant to the audit. Recommendation - the BMP should only specify actions that the proponent can implement.		Non-structural stormwater management measures mainly include:		U
12.2 Council Management Activities Local councils can influence the quality of stormwater within a catchment when planning and managing its construction and maintenance activities and during its day to day management decisions. It should be noted that catchments beyond the site boundaries extend into Ku-ring-gai and Hornsby local government areas. These catchments have more impact on the hydrology and water quality of the protected bushland and riparian zones than the local catchments within the site. Table 8.1 of the BMP lists some council management activities that have potential direct or indirect influences on stormwater management of these activities.	These requirements are outside the ability of ACA to address or implement and hence are not considered relevant to the audit. Recommendation - the BMP should only specify actions that the proponent can implement.		Review Table 8.1 of the Wahroonga Estate BMP to identify council management activities that have potential direct or indirect influences on stormwater management of these activities.	Off-site: reviewing documentation relating to reviews undertaken to identify council management activities influencing stormwater management, including those council management activities that have been listed in Table 8.1 of the BMP.	U

Hydrology and Nutrient Management Plan - Condition 13	**8.3.4 Non-structural Stormwater Management Measures:** **Non-structural stormwater management measures mainly include:** **iv. Wahroonga Estate Development Site Activities** **Many of the activities mentioned in point (iii) above, are applicable to the individual entities responsible for managing the buildings, assets and infrastructure within the Wahroonga Estate development site. Of particular importance is the issue of long-term maintenance and management of the implemented stormwater management measures, especially the structural measures, which require ongoing resources and expenditure to ensure their sustainability and longevity. The commitment of these entities for ongoing allocation of the required resources and funds should be confirmed and management systems should be in place to ensure the long-term sustainability of this commitment.** **Many of the activities mentioned in point (iii) above, are applicable to the individual entities responsible for managing the buildings, assets and infrastructure within the Wahroonga Estate development site. of particular importance is the issue of long-term maintenance and management of the implemented stormwater management measures, especially the structural measures, which require ongoing resources and expenditure to ensure their sustainability and longevity. the commitment of these entities for ongoing allocation of the required resources and funds should be confirmed and management systems should be in place to ensure the long-term sustainability of this commitment.**				
13.0 Non-structural stormwater management measures mainly include: Wahroonga Estate Development Site Activities. The commitment of long-term maintenance of implemented stormwater management measures for ongoing allocation of the required resources and funds should be confirmed and management systems should be in place to ensure the long-term sustainability of this commitment.	Water control devices within the site are maintained by the BMP or grounds team. This team is employed under contract, with the previous contract being awarded in 2010 for five years, and hence is due for revision. No long-term maintenance issues associated with stormwater management within the site were observed. ACA have confirmed that the intention is for the current contract to be renewed for 5 year and as a minimum include the same elements as the current contract. Indicating a long term sustainability and commitment to the water management systems in place across the site.		Non-structural stormwater management measures mainly include: Wahroonga Estate Development Site Activities. The commitment of long-term maintenance of implemented stormwater management measures for ongoing allocation of the required resources and funds should be confirmed and management systems should be in place to ensure the long-term sustainability of this commitment.	On-site: undertaking site inspection of Estate and activities undertaken to confirm that measures are being effectively undertaken in accordance with the approved BMP. Off-site: reviewing documents relating to non-structural stormwater and monitoring reports to confirm that measures are being effectively undertaken in accordance with the approved BMP.	Y
13.1 Non-structural stormwater management measures mainly include:	NA	NA	Non-structural stormwater management measures mainly include:		NA
13.2 Wahroonga Estate Development Site Activities	NA	NA	Wahroonga Estate Development Site Activities.	On-site: undertaking site inspection of Estate and activities undertaken. Off-site: reviewing documents relating to non-structural stormwater and monitoring reports.	NA

13.2.1 Many of the activities mentioned in point (iii) above, entitled "Council Management Activities" are applicable to the individual entities responsible for managing the buildings, assets and infrastructure within the Wahroonga Estate development site.	These requirements are outside the ability of ACA to address or implement and hence are not considered relevant to the audit. Recommendation - the BMP should only specify actions that the proponent can implement.	NA	Many of the activities mentioned in point (iii) above, entitled "Council Management Activities" are applicable to the individual entities responsible for managing the buildings, assets and infrastructure within the Wahroonga Estate development site.	On-site: undertaking site inspection of Council Management Activities within the Estate.	U
13.2.2 Of particular importance is the issue of long-term maintenance and management of the implemented stormwater management measures, especially the structural measures, which require ongoing resources and expenditure to ensure their sustainability and longevity.	Water control devices within the site are maintained by the BMP or grounds team. This team is employed under contract, with the previous contract being awarded in 2010 for five years, and hence is due for revision. No long-term maintenance issues associated with stormwater management within the site were observed. ACA have confirmed that the intention is for the current contract to be renewed for 5 year and as a minimum include the same elements as the current contract. Indicating a long term sustainability and commitment to the water management systems in place across the site.	NA	Long-term maintenance and management of the implemented stormwater management measures, especially the structural measures, which require ongoing resources and expenditure to ensure their sustainability and longevity.	On-site: undertaking site inspection of Estate and stormwater management measures to ensure that they are being maintained. Off-site: reviewing documents relating to non-structural stormwater maintenance and monitoring reports and legal documents to confirm that mechanisms have been put in place to ensure the long-term maintenance and management of the implemented stormwater management measures, especially the structural measures, which require ongoing resources and expenditure to ensure their sustainability and longevity.	Y
13.2.3 The commitment of these entities for ongoing allocation of the required resources and funds should be confirmed and management systems should be in place to ensure the long-term sustainability of this commitment.	Water control devices within the site are maintained by the BMP or grounds team. This team is employed under contract, with the previous contract being awarded in 2010 for five years, and hence is due for revision. No long-term maintenance issues associated with stormwater management within the site were observed. ACA have confirmed that the intention is for the current contract to be renewed for 5 year and as a minimum include the same elements as the current contract. Indicating a long term sustainability and commitment to the water management systems in place across the site.	NA	Confirm commitment of these entities for ongoing allocation of the required resources and funds and management systems should be in place to ensure the long-term sustainability of this commitment.	On-site: undertaking site inspection of Estate and stormwater management measures to ensure that are being maintained. Off-site: reviewing documents relating to non-structural stormwater maintenance and monitoring reports and legal documents to confirm that management systems & mechanisms have been put in place to ensure the commitment of these entities to ongoing allocation of the required resources and funds to ensure the long-term sustainability of this commitment.	Y
Hydrology and Nutrient Management Plan - Condition 14	**8.5 Monitoring and Evaluation:** **Monitoring and evaluation of the proposed hydrological and nutrient management plan will ultimately allow the assessment of the plan's effectiveness in meeting its objectives.** **The following monitoring program is proposed:** **Table 8.2 MONITORING PROGRAM** **Item / Action / Outcomes / Timeframe** 1 — Review implementation of the proposed structural and non-structural management measures — Develop understanding of the efficiency of implementing the proposed management measures. — Ongoing 2 — Review of available water quality information for the natural streams within the site — Better understanding of the status of nutrient and hydrological impacts and identify gaps. — Ongoing **Table 8.2 MONITORING PROGRAM** **Item / Action / Outcomes / Timeframe** 3 — Implement water quality monitoring program (TSS, TP & TN) for the natural streams within the site — Continued data collection and interpretation of nutrient levels — Yearly 4 — Involve local community in monitoring the extent and severity of bushland and riparian areas affected by littering, erosion, sedimentation and weed infestation. — Increase awareness of these issues and community participation. Gauge level of progress in tackling these issues. — Quarterly				
14.0 Monitoring and evaluation of the proposed hydrological and nutrient management plan will ultimately allow the assessment of the plan's effectiveness in meeting its objectives. The proposed monitoring program is provided in Table 8.2. :	Water quality monitoring is undertaken at nine sites on an annual basis as required by the BMP. The results of this are provided in each annual BMP report. The Wahroonga Waterways Landcare group is involved in inspections and maintenance of waterway areas.	Review of available documents, staff interviews	Monitoring and evaluation of the proposed hydrological and nutrient management plan will ultimately allow the assessment of the plan's effectiveness in meeting its objectives. The proposed monitoring program is provided in Table 8.2 of the Wahroonga Estate BMP.	On-site: undertaking site inspection of monitoring locations. Off-site: reviewing documents relating to monitoring to confirm that monitoring and evaluation of the proposed hydrological and nutrient management plan is being effectively undertaken in accordance with the approved BMP and Table 8.2 to ensure that the plan's effectiveness in meeting its objectives can be fully assessed.	Y

14.1 Monitoring and evaluation of the proposed hydrological and nutrient management plan will ultimately allow the assessment of the plan's effectiveness in meeting its objectives. The proponent must undertake appropriate monitoring and evaluation in accordance with Table 8.2 of the BMP, entitled "Monitoring Program" which includes:	Water quality monitoring is undertaken at nine sites on an annual basis as required by the BMP. The results of this are provided in each annual BMP report and are being incorporated into the assessment of the plan's effectiveness in meeting its objectives. The Wahroonga Waterways Landcare group is involved in inspections and maintenance of waterway areas.	NA	Undertake appropriate monitoring and evaluation in accordance with Table 8.2 of the Wahroonga Estate BMP.	On-site: undertaking site inspection of monitoring locations. Off-site: reviewing documents relating to monitoring to confirm that monitoring and evaluation of the proposed hydrological and nutrient management plan is being effectively undertaken in accordance with the approved BMP and Table 8.2 to ensure that the plan's effectiveness in meeting its objectives can be fully assessed.	Y
14.1.1 The proponent must review implementation of the proposed structural and non-structural management measures on an ongoing basis, to develop an understanding of the efficiency of implementing the proposed management measures.	Site inspections are undertaken by the BMP / grounds team supervisor on a weekly basis. Water quality monitoring is undertaken as required in the BMP (refer to Requirement 14.0).	Review of available documents, staff interviews	Review implementation of the proposed structural and non-structural management measures on an ongoing basis in accordance with Table 8.2 of the Wahroonga Estate BMP.	On-site: undertaking site inspection of management measures implemented. Off-site: reviewing monitoring reports and review documents of proposed management measures to confirm that implementation of the proposed structural and non-structural management measures are being reviewed on an ongoing basis, in order to develop an understanding of the efficiency of implementing the proposed management measures.	Y
14.1.2 The proponent must review available water quality information for the natural streams within the site on an ongoing basis, to gain a better understanding of the status of nutrient and hydrological impacts and identify gaps.	Site inspections are undertaken by the BMP / grounds team supervisor on a weekly basis. Water quality monitoring is undertaken as required in the BMP (refer to Requirement 14.0).	Review of available documents, staff interviews	Review available water quality information for the natural streams within the site on an ongoing basis in accordance with the Wahroonga Estate BMP.	Off-site: reviewing water quality reporting and interviewing person responsible for managing water quality to confirm that available water quality information for the natural streams within the site are being reviewed on an ongoing basis, in order to gain a better understanding of the status of nutrient and hydrological impacts and identify gaps.	Y
14.1.3 The proponent must implement a water quality monitoring program (TSS, TP & TN) for the natural streams within the site on an annual basis and continue to collect data and interpret nutrient levels.	Water quality monitoring is undertaken at nine sites on an annual basis as required by the BMP. The results of this are provided in each annual BMP report. The Wahroonga Waterways Landcare group is involved in inspections and maintenance of waterway areas. The annual reports provide an analysis of results against relevant trigger values.	Review of available documents, staff interviews	Implement a water quality monitoring program (TSS, TP & TN) for the natural streams within the site on an annual basis and continue to collect data and interpret nutrient level in accordance with the Wahroonga Estate BMP.	On-site: undertaking site inspection of water monitoring locations. Off-site: reviewing water quality reporting and interviewing person responsible for managing water quality to confirm that a water quality monitoring program (TSS, TP & TN) is being implemented for the natural streams within the site on an annual basis, and data is collected and nutrient levels interpreted on an ongoing basis.	Y
14.1.4 The proponent must involve local community in monitoring the extent and severity of bushland and riparian areas affected by littering, erosion, sedimentation and weed infestation on a quarterly basis, in order to increase awareness of these issues and community participation and gauge the level of progress in tackling these issues.	Water quality monitoring is undertaken at nine sites on an annual basis as required by the BMP. The results of this are provided in each annual BMP report. The Wahroonga Waterways Landcare group is involved in inspections and maintenance of waterway areas.	Review of available documents, staff interviews	Involve local community in monitoring the extent and severity of bushland and riparian areas affected by littering, erosion, sedimentation and weed infestation on a quarterly basis in accordance with the Wahroonga Estate BMP.	Off-site: reviewing of documents relating to community involvement in monitoring bushland and riparian areas and interviewing community engagement representative/s to confirm that the local community is involved in monitoring the extent and severity of bushland and riparian areas affected by littering, erosion, sedimentation and weed infestation on a quarterly basis, in order to increase awareness of these issues and community participation and gauge the level of progress in tackling these issues.	Y