



2 VEGETATION MANAGEMENT PLAN

2.1 OVERVIEW

The Proposal to develop a Hospital in the grounds of the former John Williams Respite Care Centre includes the retention and rehabilitation of existing BGHF Habitat in the eastern, south-eastern and central sectors of the Subject Property, and the reconstruction (or recreation) of areas of BGHF Habitat elsewhere on the Property.

The BGHF Rehabilitation & Reconstruction Program will be planned, implemented and managed through the preparation of a **Vegetation Management Plan**.

This Vegetation Management Plan (hereafter '**the VMP**') has been prepared in accordance with the recommendation of the *Species Impact Statement* (Cumberland Ecology, March 2009) to prepare a management plan to guide the restoration and rehabilitation of the BGHF Habitat within the Subject Property.

Recommendations of the VMP for the reconstruction of BGHF Habitat via an indigenous planting program have been considered in close consultation with Taylor Brammer Landscape Architects, who have prepared the *Landscape Strategy Plan* (February 2009, revised November 2009). However, it is possible that minor details of this Landscape Plan may be amended at some future time to accommodate natural regeneration of BGHF species, which is anticipated on at least part of the Subject Property.

The TB Landscape Plan has been included as Figure 1.4 in Section 1 of the VMP. The list of indigenous flora species recommended for landscaping elsewhere on the Subject Property has been designed to generally complement the floristic composition of the BGHF Ecological Community, using the species list provided in the Final Determination (see Appendix 1).

The primary aim of this VMP is to identify appropriate management strategies and actions for the rehabilitation and future management of BGHF Habitat occurring within the Subject Property.

The VMP also provides guidelines for the reconstruction of additional areas of BGHF Habitat, principally in those areas retaining only canopy trees (e.g. Sydney Blue Gums, Blackbutt and others), listed in the Final Determination (see Appendix 1).

Further, as the Proposal incorporates buildings and landscape elements of heritage value, the VMP has been structured to accommodate the retention of a number of early garden plantings, principally those trees listed as 'significant' – as identified in the *Arboricultural Impact Assessment* (Tree Wise Men March 2009). See Table 7.1 for a list of culturally significant plantings to be retained.

While the VMP recommends the retention of a number of non-invasive culturally significant plantings within areas of BGHF Habitat, this Plan does NOT attempt to address the refurbishment of Rippon Grange's heritage gardens.



2.2 VISION STATEMENT

The native vegetation within the Subject Property at Wahroonga will be rehabilitated and conserved as a valuable remnant of the Blue Gum High Forest Ecological Community and managed for its natural conservation values. The restored BGHF Habitat will be available to the patients and staff of the proposed Hospital for their enjoyment and passive recreational usage.

In order to achieve this Vision, a series of management objectives is proposed. These incorporate objectives specifically relevant to the management of the Subject Property's natural heritage values – i.e. the remnant BGHF Ecological Community extant on the Property.

2.3 PLAN AIMS & OBJECTIVES

A plan of management is required to guide the conservation, rehabilitation and on-going management of the remnant BGHF Habitat within the Subject Property at 35 Water Street, Wahroonga.

A plan of management is an important document as it serves to clarify the goals and objectives of management, and clearly sets out the proposed actions and their general sequence. It determines best-practice management strategies and actions, and provides guidelines for on-going assessment and review. The plan also serves as a vehicle for agreement between all stakeholders.

Where native vegetation occurs, such a plan (more properly a 'vegetation management plan'), guides the activities of the restoration and rehabilitation program and thereafter, the on-going management of the site's natural conservation values. Infrastructure works (track construction, fencing and signage), and activities related to the proposed development (drainage and erosion control works) are integral to any such plan.

The specific aims and objectives of the VMP for BGHF Habitat within the Subject Property will ensure the development of appropriate planning and management policies to conserve the natural areas identified within this Plan.

The objectives of the VMP for areas of BGHF Habitat are:

- To conserve and rehabilitate those areas of BGHF Habitat occurring within the Subject Property and to promote local biodiversity values;
- To restore, and where appropriate to reconstruct, additional areas of BGHF Habitat within the Subject Property;
- To manage the bushland rehabilitation and reconstruction process to ensure the retention of suitable habitat for those threatened and/or significant flora and fauna species present within the Subject Property and environs;
- To maintain and improve connectivity locally and within the Subject Property itself, principally through the tree canopy, but also through the restoration of a native understorey;



- To enhance local landscape values (screening/aesthetics) in line with Council's Policies and Development Control Plans; and
- To fulfil the Proponent's legal obligations in terms of local planning controls, State and Federal environmental legislation.

Note: this VMP does NOT constitute a detailed 'works plan' for undertaking of on-ground works. The role of a VMP is to identify appropriate goals and objectives, determine best-practice management strategies, and provide guidelines for on-going assessment and review. Detailed actions and tasks are more appropriately contained in a site-specific 'works plan', which is prepared by the contractor(s) proposing to undertake on-ground works, and presented at time of tendering.

2.4 SCOPE OF WORKS

The VMP for areas of BGHF Habitat at 35 Water Street Wahroonga has been prepared in consideration of the guidelines prepared by the NSW Department of Water & Energy ('DWE')⁴, as set out in their publication *How to Prepare a Vegetation Management Plan (Version 7)*.

The scope of works for preparing a plan of management for an area of native vegetation is as follows.

- Undertake a comprehensive review of information and other baseline data relating to the geophysical and biological resources and values of the Subject Property.
- Identify and map extant ecological communities, plant associations and location of threatened species occurring within the Subject Property.
- Review local planning, State and Federal government policies and legislative requirements and explain their relevance to the Subject Property, with the landowner's role and responsibilities clearly defined.
- Clearly define goals, objectives and strategies for the purposes of nature conservation, passive recreation, education, landscape enhancement and other values (as appropriate).
- Develop bushland restoration and rehabilitation strategies, including the identification of remedial measures for existing impacts and strategies to ameliorate potential future threats.
- Consider infrastructure requirements, including signage, pathways, seating, lighting and other public amenities (if appropriate);and where appropriate,
- Consider stakeholder participation⁵ – including a review of existing roles/contribution, recommendations for role enhancement, educational opportunities etc.

⁴ Formerly Department of Sustainable Natural Resources (DSNR)

⁵ Community consultation was held prior to the submission of the previous (2007) DA to Council



2.5 PLAN TENURE

This VMP has been prepared to cover the next 10-year period, commencing from the date of its adoption by the Proponents and approval by the NSW Department of Planning.

As the VMP deals specifically with the restoration and management of a native vegetation community (i.e. 'bushland') - which is a dynamic process - after five (5) years this Plan should be reviewed; the progress of works assessed using the Performance Indicators identified in this Report (see Section 8.9); and where necessary, management strategies and actions should be amended or modified.

This VMP covers works to be undertaken over an initial 10-year period. However, it is anticipated that the BGHF Habitat at Water Street will be managed in perpetuity, according to the principles and guidelines set out in this VMP.

The long-term nature of a bushland restoration and rehabilitation project is strongly emphasised.

2.6 AREAS TO WHICH THE VEGETATION MANAGEMENT PLAN APPLIES

The areas of BGHF Habitat to which this VMP applies are illustrated on Figure 2.1

2.6.1 Core BGHF Habitat Areas

The two (2) Core BGHF Habitat areas described below were identified by UBMC (2006) as simplified stands of BGHF, comprising native trees over an introduced and generally weedy understorey.

Young & Water Street Boundaries

The **Core BGHF Habitat** forms a reversed 'L-shape', running along the residential boundary on the southern side of Water Street, and extending along Young Street on the eastern property boundary. This area is ~10 to 45 metres in width and approximately 125 metres long along Young Street, and 15 to 40 metres wide and 90 metres long near the southern boundary. The east-west length of the widest section near the southern boundary is approximately 50 metres. Updated GIS assessment shows this area to account for approximately 49% of the 6,350 sq metres of BGHF area appraised by Smith & Smith (2006).

The vegetation in the Core BGHF Habitat ranges from a tall forest – with a dense understorey of small trees and shrubs (again a mixture of native and introduced species) – to a small area of exotic (introduced) grassland at its southern end, with only the occasional small tree and/or shrub present.

Photographic and anecdotal evidence (e.g. horticultural plantings, stone retaining walls and pathways, a grotto, and other garden features) suggests that this part of the Subject Property would have been maintained as a wild or 'natural garden' for many years.

At least part of the native vegetation in this area appears to be a true remnant⁶ of the BGHF, once widespread in the Locality⁷ - although the straight line of even-aged Sydney Blue Gums along the

⁶ For the purposes of this VMP, the term 'remnant' also describes a regrowth form of the community



Water and Young Street boundaries are likely to be horticultural plantings. The tree canopy generally intact, although variable, comprising characteristic Sydney Blue Gums and Blackbutt, as well as a number of other large canopy trees – some being indigenous species and others horticultural introductions (see Plate 1).

The small tree and shrub strata have been largely replaced by horticultural plantings and weeds. Native groundcovers are restricted to relatively small areas where aggressive ground cover weeds are absent, or edge site where light levels are higher.



Plate 1: Core BGHF Habitat along the Young & Water Street Boundaries

⁷ See Plates, showing this stand of trees *in situ* circa 1900



Central & South-western Areas:

The vegetation in the central and south-western sections of the Property (forming the lower arm of the reversed L-shape) retains far fewer native species, and displays highly simplified structural integrity, comprising canopy trees and some large native shrubs over garden beds edged by sandstone flagging and adjoining a large area of (unmaintained) lawn. Updated GIS assessment shows that this area accounts for approximately 14% of the 6,350 sq metres of the BGHF area appraised by Smith & Smith (2006).

For the purposes of this VMP, this second, smaller area has also been described as **Core BGHF Habitat**. The central and south-western Habitat areas are separated from the main BGHF remnant by a paved road, and fragmented internally by informal walking tracks. Most of this area has now been overtaken by weeds and unchecked garden escapes (see Plate 2).

Some of the large canopy trees in this area are non-indigenous native species from other parts of Australia (e.g. Lemon-scented Gum *Corymbia citriodora*), while others are introduced horticultural specimens (e.g. Jacaranda *Jacaranda mimosifolia*) – these trees are part of the original garden design for Rippon Grange – which included a significant arboretum.

Native understorey species are represented only by a small number of herbaceous species growing in the garden beds and lawns. The understorey species recorded in these areas, while generally 'native' in origin, are not necessarily 'characteristic' of the BGHF Ecological Community, and such species are commonly found in bushland, parks and local gardens throughout the Sydney Basin and Central Coast. Such species include, but are not limited to, Kidney Weed *Dichondra repens*, Panic Grasses *Entolasia* spp, Hedgehog Grasses *Echinopogon* spp, Basket Grass *Oplismenus imbecillis*, and Pastel Flower *Pseudoranthemum variabile*.



Plate 2: Core BGHF Habitat Management Zone 2: tall Blue Gum trees over an unmanaged introduced and now weedy understorey



Croquet Lawn

The L-shaped remnant described as Core Habitat adjoins a disused croquet lawn, which has been constructed using 'cut and fill' and now located on an elevated fill platform and enclosed by low stone walls. Recent (September/October 2008) site investigations show that the croquet lawn is rapidly being invaded by woody weeds (Cootamundra Wattle *Acacia baileyana*, *Cotoneaster glaucophyllus* and Blackberry *Rubus fruticosus*), as well as weedy perennial herbs such as Crofton Weed *Ageratina adenophora* and Fireweed *Senecio madagascariensis* (see Plate 3). Total area approximately 300 sq metres (0.03 ha).

Hitherto the Croquet Lawn has not been included in any discussion of BGHF Habitat Area, but because it has been identified by Council's ecologist (James 2007) as 'regenerating BGHF', the VMP will provide comment on its status and future management.



Plate 3: Former Croquet Lawn showing weed invasion (Cootamundra Wattle & Fireweed)

2.6.2 Non-Core BGHF Habitat Areas

The supplementary Non-Core BGHF Habitat areas described below were identified as BGHF by Smith & Smith (2006) and confirmed by the NSW Land & Environment Court (June 2007). The basis for their identification as BGHF was the presence of native canopy trees, albeit that they occurred over a wholly introduced or weedy understorey.



Far South-western /Service Area

In order to provide for the upkeep of a large garden, parts of the Property were developed as 'service areas' (composting facilities, work sheds), to provide food for the main house (chicken coops, vegetable gardens and a small orchard). Surviving property plans and old photographs indicate that these facilities were located in the south-western part of the Property, behind the Stables (see Plate 4) – an area which has now been identified for 'reconstruction' to BGHF Habitat.

This part of the Property was originally excised from the area of BGHF Habitat extant on the Subject Property (UBMC 2005, 2006), but has since been determined to be 'potential BGHF' by Smith & Smith (2006). As a result, this additional area has been incorporated into the larger BGHF Habitat area to be rehabilitated, or more accurately, totally reconstructed).



Plate 4: Non-Core BGHF Habitat in the South-Western Corner: Former Service Area behind Stables – Management Zones 3-4 (photo facing south)



Summary

The total area to which this VMP applies – the 6,350 sq metres of existing BGHF Habitat, *plus* the 2,099 sq metres of compensatory offsets to be reconstructed, and minus the 116 sq metres to be removed to facilitate construction totals 8,333 sq metres (0.833 hectares).

This area has been divided into five (5) **Management Zones** according to their location within the Subject Property, their structural and floristic integrity, condition (health), weed densities, soil conditions, anticipated site resilience, and the different rehabilitation and restoration strategies required to re-establish a representative sample of the BGHF Ecological Community.

Management Zones are discussed in Section 4.7 and are illustrated on Figure 4.6.

Figure 2.1 provides an Aerial Photograph of the Subject Property, with an overlay showing the extent of all BGHF Habitat Areas.