

Vegetation Management Guidelines for Development Applications and Unauthorised Works





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Document Control		
Document ID: Vegetation Management Plan Guidelines for Development Applications and Unauthorised Works		
Revision No.	Date	Revision Details
0	16/05/2019	
1		
2		



1.0 Introduction

The Wollongong Local Government Area (LGA) supports a high diversity of native plants, animals and vegetation communities. These ecological values are part of what makes the Wollongong LGA special and why many people choose to live here. For these reasons Council places significant emphasis on the protection and restoration of native vegetation impacted by development.

The restoration and rehabilitation of native vegetation within parts of the Wollongong LGA where it has been lost, removed or impacted upon is a critical aspect of effectively conserving the Wollongong LGA's ecosystems and their functions and achieving our community vision of:

'From the mountains to the sea, we value and protect our natural environment and we will be leaders in building an educated, creative and connected community.'

This guide has been developed to facilitate the revegetation of cleared areas and protect existing native vegetation. Specifically, it aims to guide developers, consultants and private landholders in the preparation of Vegetation Management Plans.





1.1 What is a Vegetation Management Plan (VMP)?

A Vegetation Management Plan (VMP) is intended to assist land managers and/or owners in managing the impacts of development (planned, previous or existing) to protect existing native vegetation and habitat from disturbance and/or remediate impacts from development activities.

VMPs provide a detailed methodology in relation to the management, rehabilitation and regeneration of native vegetation. They will include information concerning the area to be managed, the current status of the vegetation including those within riparian zones or other ecologically sensitive areas, strategies both in the short and long term in relation to management and rehabilitation of the area and a schedule of works, procedures and processes for the works.

A VMP aims to ensure that development and ongoing site management:

- Achieves the relevant objectives prescribed within Council's respective Environmental Planning Instruments (eg Wollongong Local Environmental Plan 2009 and Wollongong Development Control Plan 2009).
- Is consistent with relevant environmental legislation and policies (eg *Biodiversity Conservation Act 2016*, *Biosecurity Act 2015* and *Environment Protection and Biodiversity Conservation Act 1999*).
- Is conducted in accordance with the land manager's obligation under relevant frameworks (*Local Government Act 1993*, *Rural Fires Act 1997* and *Environmental Planning and Assessment Act 1979*).
- Mitigates impacts of urban development on remnant bushland areas.

The VMP must be prepared to the satisfaction of Council. A VMP must provide quantifiable goals and strategies that help to conserve certain site values such as ecological processes operating on-site, where these processes are likely to be affected by the development or associated activities or remediation is required.

Implementation of the VMP may be incorporated by Council into conditions of consent (where relevant) and in some cases may be subject to a restriction on the land or positive covenant under the *Conveyancing Act 1919*. A VMP is not required for works approved under a Bush Fire Hazard Reduction Certificate or a Bush Fire Hazard Reduction Notice under section 66 of the *Rural Fires Act 1997*.

A VMP is linked to a site, not the owner of the property; therefore it applies to the site for the timeframe specified in the plan. Should the respective properties change ownership, the new owner will become responsible for implementing any outstanding actions.

When developing a VMP, all property owners affected by management actions must agree to the terms of the VMP.

1.2 When is a VMP required?

At Council's discretion a VMP may be required:

- As part of a Development Application consistent with Council's Development Control Plan 2009 requirements.
- Following unauthorised activities such as land clearing, including hazard reduction without a relevant approval.
- Where poor management of a development site may have led to clearing and/or damage of proposed retained vegetation.
- In addition to a landscape plan and/or weed management plan.
- In order to comply with the *Biosecurity Act 2015*.

The preparation of a VMP does not necessarily mean that the clearing of native vegetation will be approved. The VMP will be reviewed by Council staff and amendments may be required to works programs, development designs and/or management actions.



2 Preparing the VMP

2.1 Who can prepare the VMP?

The VMP must be prepared by a suitably qualified environmental consultant or bush regenerator with theoretical and practical experience in bushland restoration and management, including weed control, preferably with experience in the Wollongong LGA. The consultant will need to demonstrate the following minimum qualifications and experience:

- A Diploma qualification in Conservation and Land Management and/or
- Minimum of five (5) years demonstrated experience in bush regeneration, or
- A Degree qualification in environmental management or ecological sciences with demonstrated experience in bush regeneration.

If the minimum qualification requirement cannot be met, approval may be granted by Council on a case by case basis depending on the size and significance of the vegetation.

2.2 Who can implement a VMP?

Owing to the complexity of the regeneration/revegetation activities to be undertaken, the environmental sensitivity of the site or the necessity of the works to be completed within a restricted timeframe, Council may require that suitably qualified personnel with relevant specialist skills be engaged to implement the VMP. Details of the experience and qualifications of those implementing the VMP would need to be provided to Council.

The person(s) implementing the VMP will need to demonstrate the following minimum qualifications and experience:

- A Certificate III in Conservation and Land Management, and
- A minimum of 500 hours practical bushland regeneration under an experienced supervisor.

Supervisors will need to demonstrate the following minimum qualifications and experience:

- A Certificate IV in Conservation and Land Management, and
- A minimum of 700 hours practical bushland regeneration experience.

A Chemcert AQF III or higher is required for persons undertaking chemical weed control.

Qualification and experience requirements may be varied in some cases, particularly for minor works or those outside sensitive areas. It may be appropriate for the individual landholder to undertake works themselves, predominantly when a plan establishes a strategy that runs over the course of a number of years and involves a small area. Determinations can be made by Council on a case by case basis.

Persons responsible for each action will need to be identified in the plan and should this responsibility change, Council will need to be notified.





3 What are the contents of a VMP?

There are many factors that need to be considered when developing a VMP and the following provides an overview of the components required. The VMP must fully address all identified issues relating to the restoration and maintenance of the area and must facilitate as much natural regeneration (native regrowth) as possible where natural resilience remains. Plant species selected for use in the restoration works are to consist of a diverse range of locally occurring native tree, shrub and groundcover species representative of prior and surrounding natural vegetation assemblages.

A checklist to help you make sure the VMP is of a standard required by Council can be found in Appendix 1.

3.1 Introduction

1. Provide a brief description of the proposed development and/or impact being ameliorated.
2. Identify the aims of the VMP. This is also known as the target condition and generally related to requirements for vegetation management.
3. Outline the key management issues to be addressed and the objectives designed to address these management issues which may include:
 - loss of vegetation
 - endangered ecological communities
 - threatened species habitat
 - weed infestation
 - watercourse and/or wetlands including riparian zones
 - development impact including increased access
 - stormwater and on site effluent disposal
 - soil type, erosion and sediment control
 - fragmentation and retention of vegetation corridors
 - contaminated land.
4. The main objectives for a VMP generally relate to the need to protect sensitive site features and to mitigate the impacts of development. Objectives for a VMP may include, but are not limited to, the following:
 - Conserving and enhancing native vegetation to provide high quality habitat and wildlife corridors for native fauna.
 - Revegetation to increase areas of remnant areas or to create buffer zones around significant vegetation or riparian areas.
 - Limiting impacts to threatened, endangered and/or vulnerable species, or a locally significant flora and fauna species, or ecological communities by their conservation, provision of adequate native vegetation buffers and ameliorative measures.
 - Removal of priority and environmental weeds in a manner that is environmentally sustainable.
 - Selecting and maintaining vegetation that stabilises soils, or that absorbs run-off from accumulation points on the site, or that contributes to the optimum and effective functioning of Water Sensitive Urban Design (WSUD) stormwater management devices.
 - Restoration of degraded areas resulting from unauthorised clearing, stormwater erosion, sediment deposition or other degrading factors.



3.2 Legislative and policy requirements

Outline the requirements for the VMP under the relevant Local Environmental Plan, Development Control Plan and state and federal legislation. For example, identify the applicable LEP clauses and requirements for vegetation management (eg requirements for development applications or directives of the compliance notice) relating to the site. Actions specified in the plan must be consistent with relevant legislation and government policy.

Within the Wollongong LGA the relevant legislation and policies include:

- *Biodiversity Conservation Act 2016*
- *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)
- *Environmental Planning and Assessment Act 1979*
- *Protection of the Environment Operations Act 1999*
- *Biosecurity Act 2015*
- *Local Government Act 1993*
- *Water Management Act 2000*
- *Rural Fires Act 1997*
- *Coastal Management Act 2016*
- *State Environmental Planning Policy No 55-Remediation of Land*
- *State Environmental Planning Policy (Coastal Management) 2018*
- Wollongong Local Environmental Plan 2009
- Wollongong Development Control Plan 2009
- South East Regional Strategic Weed Management Plan 2017-2022.

Other relevant documents include, but are not limited to:

- Illawarra Regional Biodiversity Strategy
- Threatened Species Recovery Plans.

3.3 Site assessment

1. A site description is required addressing general features and attributes such as:

- land use zoning
- waterways
- riparian corridors
- topography, geology and soil
- contamination issues
- drainage
- existing infrastructure
- environmental constraints and any significant or sensitive environmental features of the subject site
- other site values – there may be important community values and issues that need to be identified such as Aboriginal cultural sites, heritage values, public access, walking tracks, utilities or safety issues.

2. Provide detailed descriptions of the type, extent and current condition of existing vegetation on the subject site, including invasive species.

In most cases a Flora and Fauna Assessment will need to be undertaken prior to the development of a VMP. This may have already occurred through a Development Application process.



Information that should be included:

- Details of survey effort and methodologies used to assess vegetation communities and weed species.
- Description of the type, extent and current condition of existing vegetation on subject site; including environmentally sensitive areas such as threatened ecological communities and threatened and/or significant plants present listed under the *Biodiversity Conservation Act 2016* and *Environment Protection and Biodiversity Conservation Act 1999*.
- A series of colour photographs taken at established reference points showing baseline condition prior to works commencing.
- An assessment of resilience of the vegetation communities (ie the likelihood of natural recruitment occurring) and the recommended works need to maximise (where possible) the in-situ resilience of the site to facilitate its recovery.
- Details of the extent and relative abundance of weed species detailed in relation to individual management zones.

A list of native and invasive species recorded on site should be included as an appendix to the VMP. The species list should include each species present at the site, the scientific name, common name, relative abundance of invasive species in each strata and the conservation or weed status.

Other ecological values and impacts to be included:

- The presence and condition of fauna habitats.
 - An assessment of riparian corridors and other surface water features such as springs and localised water impoundments, runoff/drainage (where applicable) and linkage to regional biodiversity corridors.
 - An assessment of present impacts (eg weed sources, drainage, erosion including consideration of slope and soil type, access, fire and disturbance).
 - Stock and feral herbivore access (deer, rabbits, ducks etc) and associated issues.
3. Provide a map/s of the proposed development site to support the above assessment (see Figures 1 and 2 for examples), showing the following where applicable:
- title, legend, scale bar and north arrow
 - topography
 - waterways
 - environmental constraints
 - environmental features
 - development footprint and/or impact being ameliorated
 - existing asset protection zones only.

Essential thematic layers include:

- vegetation communities
- significant plant locations and fauna habitat features
- weed infestations
- management zones
- location of photo reference points for monitoring and evaluation purposes.

3.4 Identify management zones

The VMP must fully address all identified issues relating to the restoration and maintenance of the area and it is therefore recommended that the study area be divided into management zones in view of the VMP's objectives.



Management zones should reflect site/environmental features and management approaches or aspects of the development. Examples of management zones that may be applicable include, but are not limited to:

- areas requiring conservation, including riparian or wildlife corridors, threatened species, environmentally sensitive or significant vegetation communities and their buffers
- rehabilitation/restoration zones
- reed management zones
- construction zones
- on-site effluent and stormwater disposal areas
- landscaped areas including streetscape/front setback
- groundwater recharge zones and/or overland flow paths.

Each management zone should include:

- a description of the area and the objective for this zone
- descriptions of the issue eg weed species and cover
- management strategies for target weed species and methodology of the works to be implemented
- measurable performance targets.

A description of the management zones should be supported by a map showing the location and extent of the zones.

3.4.1 Asset Protection Zones (APZs)

For privately owned land not intended to be dedicated to Council, APZs would need to be identified and specific management actions detailed.

For VMPs prepared for residual land proposed to be dedicated to Council, APZs within the dedicated lands are generally not acceptable.

For further information please refer [Wollongong City Council Bushfire Prone Residential Development Fact Sheet](#).

3.5 Developing an Action Plan

An action plan detailing specific management actions to achieve the VMP objectives needs to be developed (refer to Appendix 2 for an example of an action plan format). Generally a VMP is implemented as part of a formal project structure and an action plan must describe the scope of works with sufficient detail for each task necessary for the implementation of the plan, where the task is to be carried out (the relevant management zone), delivery priority, how each task will be done, who is responsible for delivering the action and the timeframe and indicative cost for implementation.

The ability to successfully implement the action plan is essential. It must be clearly written, realistic and provide a suitable foundation for land owners and contractors. The plan should allow adequate time for vegetation management to achieve the plan objectives with a minimum maintenance period of five years.

To ensure the success of implementing a VMP on a particular lot, consideration may need to be given to coordinating vegetation management actions with those of the adjoining lot landowner(s)/manager(s).

A sequence of works identifying time periods (with dates or number of weeks) for key stages and target outcomes of the work program needs to be provided. Target outcomes must be measurable and linked to performance criteria or identify definitive outcomes for specific works that will be reported on. Project activities and associated tasks relating to a VMP are outlined further in this section.

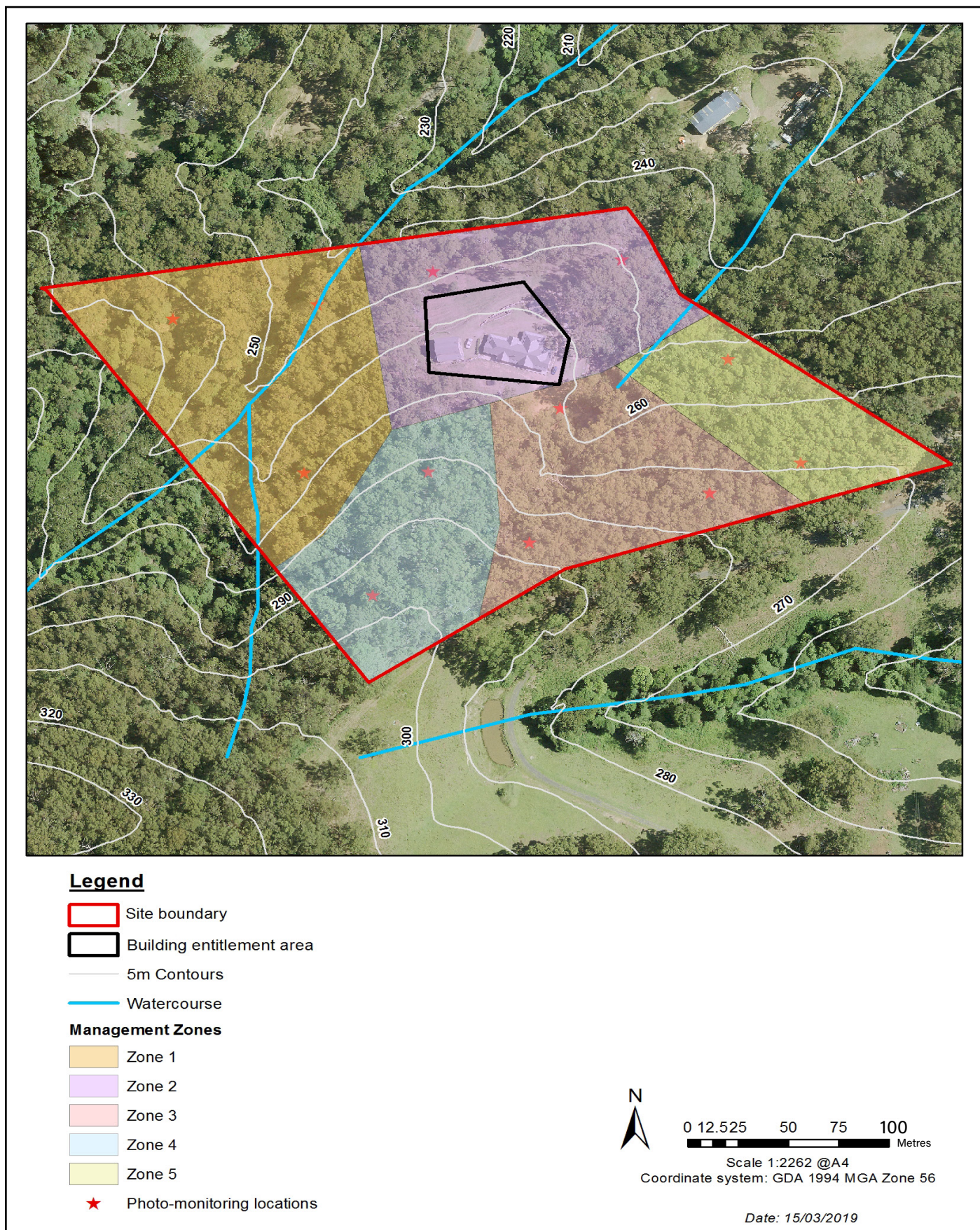
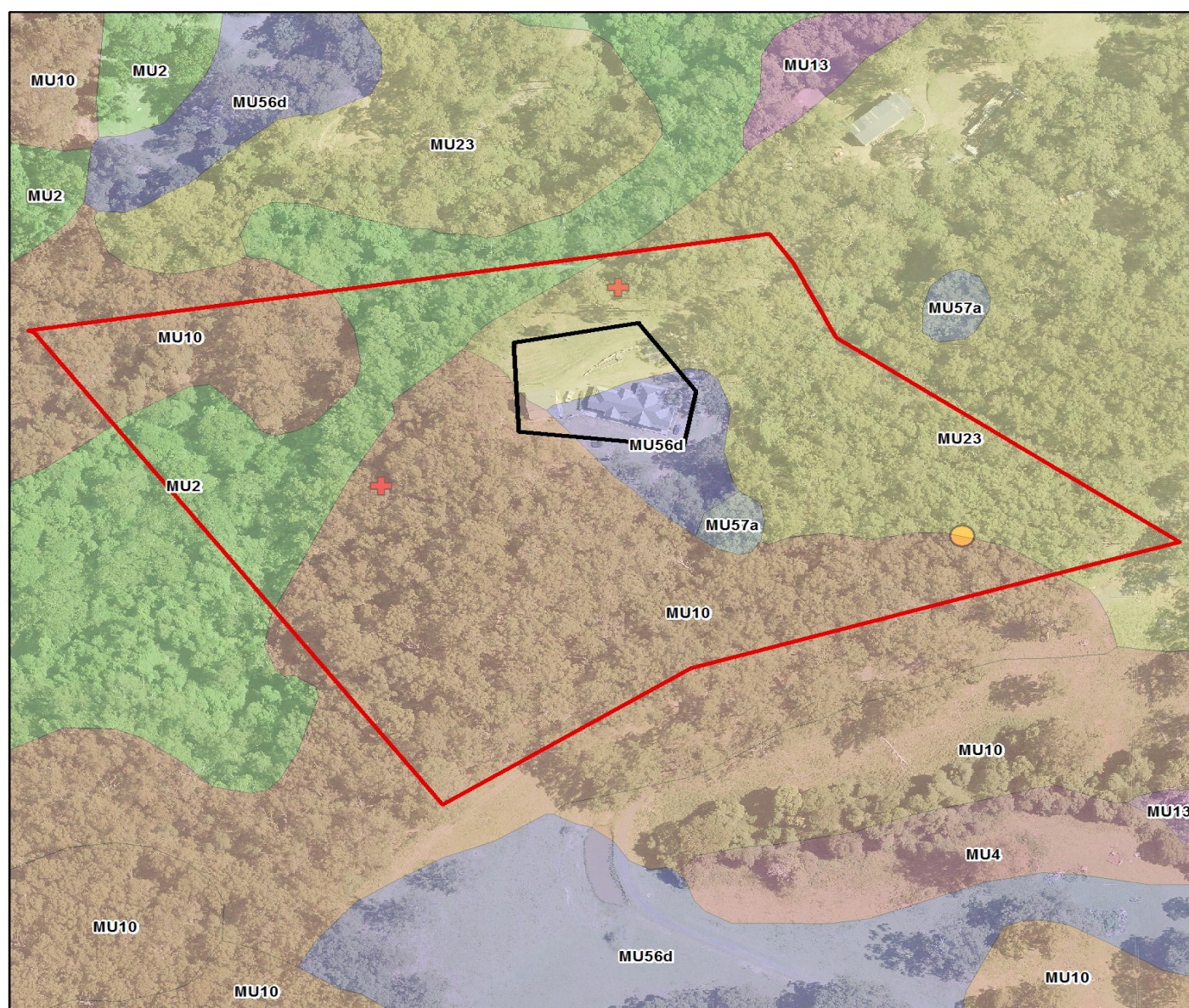


Figure 1 Example of map showing management zones



Legend

Site boundary

Building entitlement area

Vegetation Communities

MU10 Moist Gully Gum Forest

MU13 Moist Box-Red Gum Foothills Forest

MU2 Coachwood Warm Temperate Rainforest

MU23 Coastal Grassy Red Gum Forest

MU4 Lowlands Dry-Subtropical Rainforest

MU56c Weeds and Exotics

MU56d Cleared

MU57a Artificial Wetlands

+ Hollow-bearing tree

● Threatened flora record *Cynanchum elegans*



0 12.525 50 7 100
Metres

Scale 1:2262 @A4
Coordinate system: GDA 1994 MGA Zone 56

Date: 15/03/2019

Figure 2 Example of map showing vegetation mapping zones



3.5.1 Site preparation

Site preparation is crucial to ensuring the success of any regeneration. Be sure to take into consideration the previous land use, impacts on the soil, slope and salinity potential. Actions to prepare the site for ongoing effective management and enhancement may include:

- Soil testing and remediation if the area is on contaminated land or to identify suitability of the substrate for planting.
- Application of herbicide.
- Details of other surface preparation such as levelling.
- Soil remediation techniques and/or surface preparation and/or stabilisation of disturbed areas (scarifying, ripping, mulching (must be weed free), erosion matting, sterile cover crops, binding sprays etc).

3.5.2 Site management

Site management actions include:

- Provision of temporary or permanent fencing of features to be protected, including specifications of fence type and location.
- Decommissioning, soil stabilisation and vegetative rehabilitation areas affected by temporary erosion and sedimentation controls.
- Protection of existing native vegetation and key habitat features at all stages of construction and during the life of the development (including indirect impacts) such as the installation of tree guards to protect plants from fauna predation.
- Educational signage may also be warranted in sites where large areas are fenced off and/or public access is impacted, to promote awareness of the significance of the area and the management actions.

3.5.3 Weed management

Methods of weed removal and control (proposed techniques and priority sequence of removal) in accordance with current guidelines and standards must be detailed and should include removal strategies, timing of control, constraints, herbicides to be used and waste disposal and where relevant the recommended qualifications and/or licences to undertake the work. This should also include follow up control techniques and priorities.

Weed management actions include:

- Herbicide treatment and mechanical removal are the most effective methods for management of dense weed cover and should be conducted at least two to three months prior to planting.
- Manual or hand removal for small scale projects can be the most efficient and environmentally sensitive option. It is preferred for works within ecologically sensitive areas.
- Scalping the soil as a means of weed control or site preparation is generally not supported within the Wollongong LGA except in highly degraded/modified areas as it can result in removal of the seed bank from the soil profile.
- Staged removal of weeds, particularly if those weeds are providing habitat value for wildlife or are serving a role in ground stabilisation.





3.5.4 Regeneration/revegetation

In most instances only species endemic to the local area and vegetation community should be used for revegetation activities. Seedlings should be propagated from locally collected seeds where possible or purchased from reliable nurseries who stock endemic plants. A species list of plants to be used at the site including planting densities and location on the site plan and details of the methods of plant establishment such as direct seeding or tube stock must be given.

Details of actions to be given include:

- Restore a vegetation community or revegetate buffer zones around ecologically sensitive vegetation through selective planting, including identifying seed/plant sources, proposed species schedule and planting densities.
- Restore and/or enhance fauna habitat and/or corridor connectivity by reinstatement of absent stratum elements (canopy, mid-storey and/or groundcover).
- Specify activities designed to enhance a site's recovery potential (eg brush matting, direct seeding, fertiliser, water retaining crystals and bushland regeneration techniques to stimulate spontaneous recovery).
- Specify methods to protect naturally regenerating plants and new plantings from herbivory (eg provision of tree guards, fencing).
- Use vegetative waste/woody material to provide animal habitat and to help prevent soil erosion and suppress weeds.
- Describe ameliorative measures to limit impacts on threatened, endangered, vulnerable or locally significant flora and fauna species and ecological communities.
- If necessary, measures for controlling long term access and encroachments (eg bollards, fences) into regenerating areas should be identified.

3.5.5 Habitat supplementation

Where the development will or may have the potential to impact upon significant fauna habitat features, actions to supplement fauna habitat should be included.

Actions include:

- Provision of nest/roost boxes (include the number, target species, design and location of installation).
- Placement of fallen timber or removed tree hollows on the ground.
- Creation of watering points.
- Creation of artificial refuge sites.
- Provision of food sources such as planting of food trees.

3.5.6 Stormwater, wastewater and hydrological function

Actions include:

- Erosion and sediment controls - include type, location and maintenance, where relevant.
- Undertaking revegetation of WSUD stormwater quantity and quality treatments or on-site effluent disposal areas, including selection of nutrient tolerant native species and plant establishment densities for optimum performance.
- Restoration of appropriately sized riparian zones, detailing stabilisation measures and planting of locally indigenous species.



3.5.7 Maintenance

A maintenance program is required to ensure viability of the project and to specify who will be undertaking the maintenance. Irrespective of any requirements for controlled activity approval under the *Water Management Act 2000* management actions outlined in the VMP shall be maintained for a minimum period of five years, or ongoing until Council is satisfied the site has been restored to its natural state. Timing for the maintenance period commences once final primary works specified under the VMP have been completed (eg weeding and planting) irrespective of staging of works.

The maintenance program must specify the frequency of visits, duration and activities to be undertaken during the maintenance period. For clarity the maintenance program can be presented as a table. The program must at minimum include:

- watering to ensure plant survival
- weed control
- erosion control
- replacement of plant losses
- methods to minimise ongoing disturbances such as pest species or weed invasion
- fire management
- details of how other parts of the site and adjacent areas can be managed to complement the VMP (eg weed control, tracks, pest management and drainage)
- measurable performance criteria where possible for key actions (eg percentage of survival of new plantings, percentage of weed cover) and identification of definitive outcomes to provide accountability (eg Progress Reports submitted to Council).

3.5.8 Project planning and costings

For each task/management action to be completed a table of costs is required that gives an estimation of the costs associated with implementation of the recommended management actions. For large scale projects a works schedule in the form of a Gantt chart is appropriate to reflect the staging of works. It should detail the duration, sequence of sub-projects/activities/tasks and milestones necessary for the implementation of the VMP. This should also include frequency of visits and number of hours required for each action.

4 Monitoring, Evaluation and Reporting

4.1 Developing performance criteria

Performance criteria should be identified for each objective and must be specific and measurable. Performance criteria are expressed as either qualitative or quantitative statements that define how the success of the VMP in achieving the stated objectives will be determined.

Specific and measurable performance criteria are required for the completion of the primary work stage, completion of the maintenance period and for hand over (where the VMP area is intended to be dedicated to Council).

Performance criteria for a VMP may include, but are not limited to:

- The percentage of survival rate of plantings 12 months after establishment.
- The percentage of weed species cover decreased.
- The percentage that native species diversity and density has increased following 12 months of bushland regeneration management actions.
- The specific number, location and condition of rare or threatened plant species that are to remain following the completion of site works, where sites contain such species.



4.2 Monitoring and reporting

Monitoring of the key performance criteria and reporting on their effectiveness is required. Monitoring is to determine whether all priorities for restoration are being completed appropriately, to review the progress of any restoration tasks and to identify whether contingency actions are required to enhance the native vegetation composition and/or control weed infestations. Monitoring and reporting of progress and success is to be provided to Council on a six monthly basis for the first two years and a 12 monthly basis for the remainder of the project, including the maintenance period.

The methods for evaluating the achievement of the performance criteria must be specified in the VMP and be applied consistently over every management zone and each monitoring survey. A description of the monitoring techniques being utilised should be specified, including location and frequency of photo points and details of the best practice flora and fauna monitoring methods (including nest box monitoring) being used.

Monitoring is to include, but is not limited to:

- Repeatable before and after photographs – take the photo from the same point in the same direction using the same equipment and a minimum of one photo-point per management zone. These must be recorded on a map and GPS coordinates provided.
- Vegetation condition maps showing boundaries of weed infestations and assessed condition of areas based on weed densities.
- Permanent quadrats and/or transects to enable quantitative recording of factors such as species densities and diversity and extent of cover.
- Recording any new techniques or approaches being trialled.
- Recording hours and categories of work.
- Preparation of reports.

Six monthly and annual reports required by Council as a minimum must provide:

- A summary and review of the management actions outlined in the VMP and Action Plan.
- The date and time spent on each management action.
- Evaluation of the performance criteria of the VMP and fauna and flora monitoring results.
- Photo-monitoring images from established reference points from each management zone that highlight changes of these areas over consecutive surveys.
- Provide a summary on the status of any threatened species should these be located.
- Recommend and justify variation to works if this is required to meet objectives of the VMP.

Where any actions have been amended, not undertaken or timeframes not met, this should be discussed in the report with a justifiable explanation. Where the VMP requires significant adjustment and/or works can no longer be undertaken, Council should be notified immediately and a management response negotiated.

For VMP areas intended to be handed over to Council, provision should be made for the person implementing the VMP to arrange a joint site inspection with relevant Council officers shortly after the submission of each monitoring report to ensure the reporting is consistent with on ground works.

4.2.1 Threatened flora species monitoring

For threatened flora and fauna, species-specific recovery plans provide information on relevant monitoring requirements. For threatened flora, at minimum, information would need to be collected on population details (eg number of adult clumps, number of seedlings and area covered by population), breeding status (eg buds, flowering or fruiting), population health, threat and habitat management and management actions undertaken.



4.3 Progress inspections

Council will monitor the satisfactory completion of specified targets in the VMP through critical stage inspections and/or other times, including those prior to the issue of an Occupation or Subdivision Certificate. The parties responsible for implementing the VMP must contact Council to organise inspections associated with critical stages/milestones as outlined in the Action Plan. This will be detailed for specific stages of development consent (ie before construction, after construction and prior to issue of the Subdivision Certificate). The successful implementation of the VMP may affect the release of the Occupation Certificate or the release of any required bonds as required under a Controlled Activity Approval. Council will need to be satisfied with the achievement of restoration tasks prior to transfer of land to Council ownership.

5 Further Information and Advice

For further information and advice on VMPs, when they are required, how to prepare one, implementation and monitoring contact Council's Environment Planning Team on (02) 4227 7111 or email council@wollongong.nsw.gov.au. Further resources include:

- AABR (Australian Association of Bush Regenerators) www.aabr.org.au
- Australian Network for Plant Conservation www.anpc.asn.au
- Australian Pesticides and Veterinary Medicines Authority www.apvma.gov.au
- Australian Plant Name Index www.anbg.gov.au/apni
- Ecological Consultants Association of NSW www.ecansw.org.au
- Greening Australia www.greeningaustralia.org.au
- Illawarra District Weeds Authority www.idnwa.com.au
- Invasive Plants and Animal Committee www.environment.gov.au/biodiversity/invasive/weeds/government/awc.html
- Local Land Services www.lls.nsw.gov.au
- Natural Resources Access Regulator www.industry.nsw.gov.au/natural-resources-access-regulator
- NSW Bionet www.bionet.nsw.gov.au
- NSW Rural Fire Service www.rfs.nsw.gov.au
- Office of Environment and Heritage www.environment.nsw.gov.au
- OEH threatened species www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species
- PlantNET (NSW Flora Online) plantnet.rbgsyd.nsw.gov.au
- Water in NSW www.industry.nsw.gov.au/water
- Wollongong City Council Bushfire Prone Residential Development Fact Sheet [here](#)





6 References

- Bureau of Rural Sciences (2008). A field manual for surveying and mapping nationally significant weeds. 2nd Edition. Bureau of Rural Sciences, Canberra.
- Campbelltown City Council (2016). Guide to preparing a Vegetation Management Plan within the Campbelltown Local Government Area.
- Lake Macquarie City Council (2013). Vegetation Management Plan Guideline.
- Lismore City Council (2010). Guidelines for the preparation of Vegetation Management Plans.
- Natural Resources Access Regulator (2018). Guidelines for controlled activities on waterfront land – Riparian corridors.
- NSW Office of Environment and Heritage (2016). NSW Guide to Surveying Threatened Plants.
- Office of Water (2012) Guidelines for Vegetation Management Plans on Waterfront Land.
- Shire of Mundaring (2015). Landscape and Revegetation Guidelines.
- The Hills Shire Council (2015). Vegetation Management Plan Guideline.





Appendix 1: Checklist for VMP Contents

The information provided in the table below is presented as a checklist to assist with the preparation of a VMP and also to provide an indication of how the VMP will be evaluated by Council.

1. Site Assessment

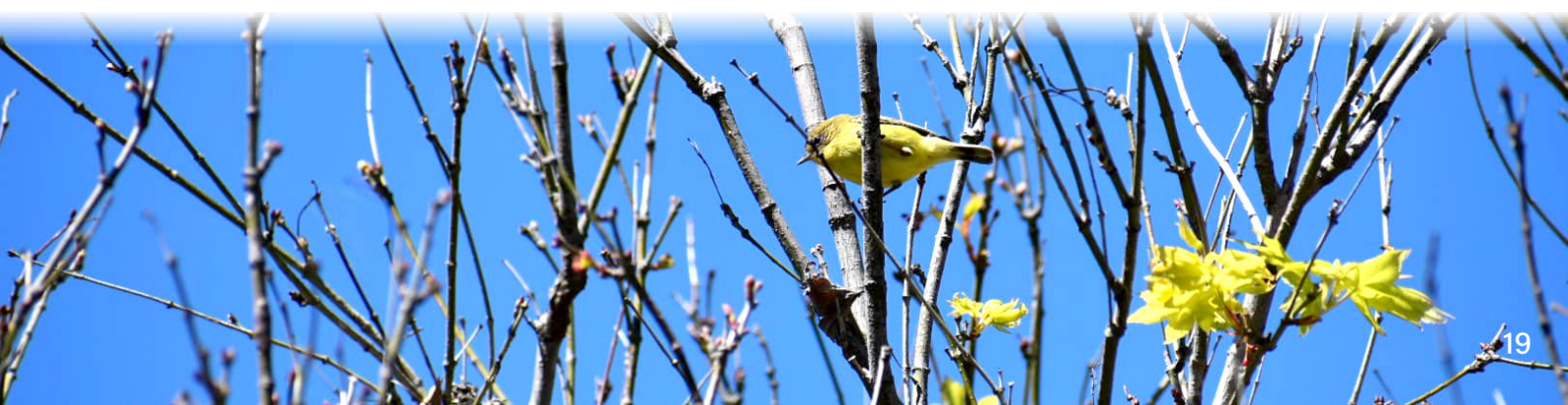
VMP component	Information recommended to be included	Addressed
1.1 General details	<ul style="list-style-type: none">• scheduled date for implementation to commence• proposed date for plan completion• details of persons preparing plan, including qualifications• details of persons implementing plan, including qualifications• selection of a permanent, legally binding mechanism and funding arrangement to enable the management of the VMP area in perpetuity	
1.2 Site description	<ul style="list-style-type: none">• site location (street name, lot and DP, suburb)• site description (total area, perimeter, length, width)• land use zoning• waterways• riparian corridors• topography – slope, aspect, erosion and safety risks• substrate, geology, soil structure• contamination• drainage• any environmental constraints• any significant or sensitive environmental features of the subject site, including threatened species sightings and hollow-bearing trees	
1.3 Existing infrastructure	<ul style="list-style-type: none">• buildings• fencing• lawn• paths• taps• access gates• health and safety• identify public risks• actions to mitigate public risk	
1.4 Site access	<ul style="list-style-type: none">• licence, lease or land use agreement (all property owners must agree to all aspects of the plan)• site access for vehicles• restrictions/consideration to any existing plans of management, other reports or conditions affecting the site	



VMP component	Information recommended to be included	Addressed
1.5 Flora and fauna	<ul style="list-style-type: none"> • details of the flora and fauna assessment (if undertaken), including date and name of consultant • existing native vegetation types, diversity, health and resilience • presence or evidence of threatened species and/or ecological communities • weed species present • fauna habitats • pest species • presence of biodiversity or riparian corridors on site 	
1.6 APZ	<ul style="list-style-type: none"> • widths required under Planning for Bush Fire Protection • any clearing proposed under the 10/50 Vegetation Clearing Code of Practice 	
1.7 Site map	<ul style="list-style-type: none"> • legend, scale bar and north arrow • site boundaries • land use • topography • waterways • existing vegetation and natural features, their type and condition • environmental constraints • development footprint and/or impact being ameliorated • location, type and extent of weed infestation • 'Dial Before You Dig' information, if relevant • APZs – existing or proposed • areas of clearing proposed under the 10/50 Vegetation Clearing Code of Practice • location of photo reference points, for monitoring and evaluation purposes 	

2. Guiding Principles

VMP component	Information recommended to be included	Addressed
2.1 Legislation and policy	<ul style="list-style-type: none"> • a list of requirements under government legislation and policy 	
2.2 Aims and objectives	<ul style="list-style-type: none"> • overall aim of the VMP • list of management issues on site • objectives to address each of the management issues 	
2.3 Licences	<ul style="list-style-type: none"> • licences that are required to undertake the actions in the VMP 	





3. Action Plan

The Action Plan must describe in detail the methodology of the proposed tasks. A summary Action Plan table (Appendix 2) must also be provided that summarises the management actions, sequence of works for key stages (with years/dates/or number of weeks) to corresponding performance criteria.

VMP component	Information recommended to be included	Addressed
3.1 Management zones	<ul style="list-style-type: none"> identify management zones map of management zones 	
3.2 Site preparation	<ul style="list-style-type: none"> soil testing and remediation, if the area is on contaminated land or to identify suitability of substrate for planting application of herbicide details of other surface preparation such as levelling soil remediation techniques and/or surface preparation and/or stabilisation of disturbed areas 	
3.3 Site management	<ul style="list-style-type: none"> fencing specifications and locations staging of works and decommissioning of areas erosion and sedimentation controls location and description protection of existing vegetation and key habitat features educational and deterrent signage 	
3.4 Weed treatment	<ul style="list-style-type: none"> identify areas of weed infestation to be treated and managed outline methodology, frequency and staging of works specify follow-up treatments 	
3.5 Stormwater, wastewater and hydrological function	<ul style="list-style-type: none"> on-site effluent disposal infrastructure and wastewater disposal areas stormwater management devices such as water tanks, detention basins, water sensitive urban design irrigation systems 	
3.6 Bush fire management	<ul style="list-style-type: none"> extent and location of APZ details of any proposed clearing under the 10/50, Vegetation Clearing Code of Practice 	
3.7 Planting program	<ul style="list-style-type: none"> species, density, number and areas for revegetation type of revegetation to be undertaken (eg tube stock planting, direct seeding) source of plants/seeds methodology and staging of works plant protection devices (such as tree guards and weed mats) 	





4. Site Maintenance

The maintenance program must plan for five year maintenance period, unless otherwise decided by Council

VMP component	Information recommended to be included	Addressed
4.1 Maintenance schedule	<ul style="list-style-type: none"> • details of weed follow up treatments • sediment and erosion control • methods to ensure plant survival (watering/mulching) • replacement of plant losses • methods to minimise ongoing disturbances such as pest species or weed invasion • methods of performance evaluation • replenishment of mulch (where present) 	

5. Monitoring, Evaluation and Reporting

VMP component	Information recommended to be included	Addressed
5.1 Monitoring and evaluation	<ul style="list-style-type: none"> • performance criteria developed to identify how the success of the plan will be measured • comparison with baseline data established in the planning phase • specify the methods, frequency and responsibility for assessing progress against performance criteria 	
5.2 Reporting	<ul style="list-style-type: none"> • include a reporting schedule, with a minimum of annual reporting required • records for reporting purposes identified • 'before and after' photographs and/or maps of vegetation quadrat descriptions 	
5.3 Costings	<ul style="list-style-type: none"> • costing for the implementation of all components and stages of the work including materials, labour, watering, maintenance (including plant replacement), monitoring and reporting 	



Appendix 2: Action Plan Format Example

Management Issue	Management Objective	Zone	Action/Tasks	Responsibility	Timing	Performance Criteria	Estimated Cost
Loss of remnant native vegetation	To revegetate area to expand the existing remnant vegetation	MZ1 and MZ3	1. Planting lists and schedule developed	Contractor	Aug 2019	Planting schedule representative of vegetation community	\$X
			2. Tubestock propagated from locally sourced seed stock	Contractor	Sept 2019 – Feb 2020	X numbers of tube stock propagated	\$X
			3. Site prepared for planting, including ripping and mulching	Contractor	Mar 2020	X ha of site prepared for planting	\$X
			4. Tubestock planted	Contractor	Mar – Apr 2020	Establishment of minimum of 4 total plants/m ² X ha revegetated	\$X
			5. Undertake maintenance of plantings	Contractor / Landholder	May 2020 – 2025	80% of survival of each species planted	\$X

