



Land Management Plan (Version 8)

(This revision details off-site native vegetation offsets and includes additional feedback from CFA Gippsland region see sections **7 Native Vegetation** and **9 Landscape Management Plan**)

(DP Plans included herein have been updated as of June 2014 but are not yet approved)

Monash Views & Yallourn Golf Club **Monash Road, Newborough**

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Executive Summary

This Land Management Plan has been prepared in conjunction with the Monash Views Development Plan (MVDP) and together they construct a clear framework for the proposed Yallourn Golf Course Re-development and Residential Development in Newborough.

This Land Management Plan will serve to provide land management guidelines for the development which may be referenced for the preparation of planning permit conditions at the subdivision stage, and for the assessment of detailed documentation prepared as a condition of permit.

This Land Management Plan prescribes guidelines concerning the management of storm water, waterways, native vegetation, rare and threatened species, landscape and noise. The Land Management Plan concludes with a summary of recommendations for detailed documentation required at the subdivision stage, which should be prepared in accordance with the guidelines outlined in this Land Management Plan.

1 Introduction & Background

Millar Merrigan has been engaged by Monash Views Pty Ltd to prepare a Land Management Plan for the proposed Yallourn Golf Course Re-development and Residential Development in Newborough. This Land Management Plan establishes a framework for future site actions and land maintenance practices. This Land Management Plan has been prepared in conjunction with the Monash Views Development Plan (MVDP) and together constructs a clear framework for the future development of the subject land.

1.1 Subject Land

The land known as Lot A on PS701486M and crown allotment 9P1 Parish of Narracan is the subject of this Land Management Plan. The subject area is located on the eastern periphery of the Newborough Township some 140km south-east of Melbourne (Figure 1).

The land is a greenfield site bound by Monash Road, Golf Links Road and Coach Road. It is wedged between the established Newborough residential area to the west and the Yallourn mining land to the east. Fairway Drive and Linkside Court, which are established residential streets, border the east boundary separating much of the site from the mining land.

The Yallourn Bowling Club abuts the south western corner of the subject land and Monash Park, which is a large recreation reserve located on the south western corner of Coach Road.

The Central Gippsland TAFE Institute and local army depot are located to the north of the subject land on Monash Road.

Features of the site include a Golf Course, areas of remnant native vegetation, scattered trees, drainage lines, farm dams, introduced grassland/pasture and planted vegetation.

1.2 Purpose

The Golf Course is to be re-developed and grazing land developed as residential allotments as per the MVDP (Figure 2).

1.3 Recent Land Use

The site has recently been utilised as a Golf Course and for grazing. Large areas of the site have been modified by past disturbances including grazing and the Golf Course.

1.4 Land condition

The site contains a mosaic of disturbed and intact vegetation. Large areas of the study site have been modified by past disturbances, which include the replacement of native vegetation with introduced species as part of the Golf Course landscaping. There are numerous drainage lines and water bodies across the site which are generally degraded or non-functional.

Areas of remnant native vegetation vary in quality and composition, ranging from intact areas which are relatively free of exotic species to areas that have been heavily grazed or planted out with introduced species. Native vegetation varies in quality and significance, a full description of the vegetation and ecological significance is contained in the Flora Fauna and Net Gain Assessment (FFNG), Biosis Research, August 2012 (Appendix 1).

Figure 1: Context Plan

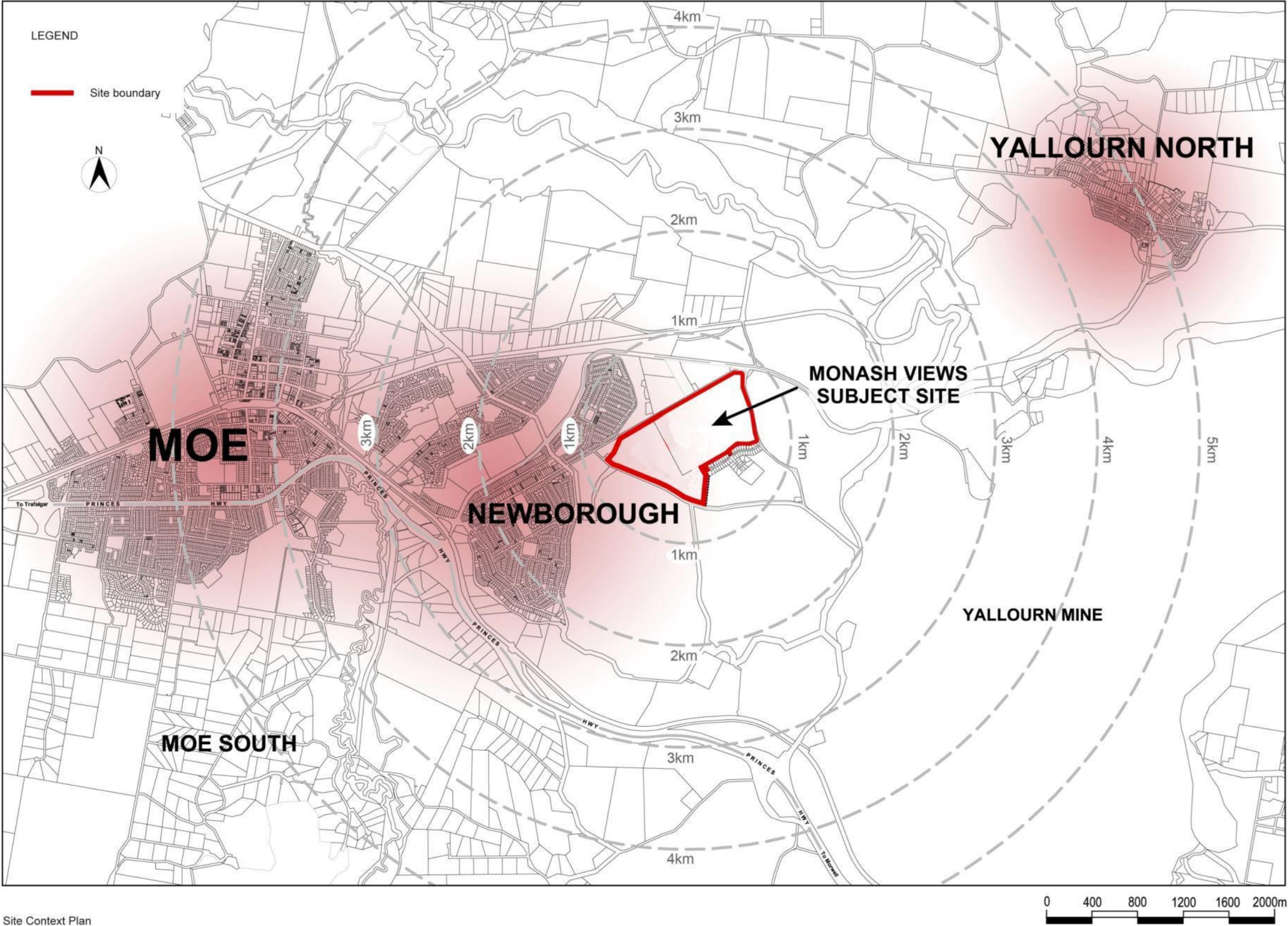


Figure 2: Development Plan



2 Objectives

The key objectives of this Land Management Plan are as follows:

- To provide land management guidelines for the development of the subject land; including management of stormwater, waterways, native vegetation, rare or threatened species and landscape treatments.
- To provide land management guidelines for the ongoing maintenance and improvement of the Yallourn Golf Course landscape.
- To provide a reference document for the preparation of planning permit conditions at the subdivision stage, and assessment of detailed documentation prepared as a condition of permit.

3 Methodology

3.1 Literature Review

Biosis Research Pty Ltd. August 2012. *Flora, fauna and net gain assessment of the Yallourn Golf Course re-development, Newborough.*

Water Technology. 2nd August 2012. *Monash Views - Stage 1 - Scoping Assessment.*

Water Technology. May 2013. *Monash Views - Stage 2 - Surface Water Management Strategy.*

Ogilvy Clayton Correspondence

- Monash Views - Design Notes
- Yallourn Golf Club - letter from Ogilvy Clayton - 16 July 2012

3.2 Definitions

MVDP – Monash Views Development Plan

FFNG – Flora, Fauna and Net Gain Assessment

DSE/DEPI – Department of Sustainability and Environment. We acknowledge that the Department is now referred to as the Department of Environment and Primary Industry (DEPI)

WGCMA – West Gippsland Catchment Management Authority

WSUD – Water Sensitive Urban Design

VHCS – Very High Conservation Significance

SEMP – Site Environmental Management Plan

SCMP – Site Construction Management Plan

Indigenous species – are those plants which are native to, and evolved in the West Gippsland area.

Introduced species – are those plants which have been introduced to the area and otherwise would not naturally occur.

Weedy species – are those plants which aggressively invade natural bushland and may be exotic or ecologically 'out of balance' indigenous species adversely affecting the regeneration of indigenous species.

3.3 Site Investigation

The site was inspected on two occasions for the preparation of this Land Management Plan. The first inspection was undertaken on the 20th February, 2013 in the company of the Monash Views Committee, consultant planning team and Darren Wallace (Enviroworks). The group reviewed the existing site conditions and Golf Course management regimes. From this site meeting a number of proposals were discussed for the improved management of the land with particular regard to the management of high conservation significance vegetation.

The second inspection was undertaken on the 16th April, 2013 in the company of members of the Monash Views Committee, consultant planning team, Darren Wallace (Enviroworks), Debbie Shaw (DSE), Gail Gatt (Latrobe City Council) and Adam Dunn (WGCMA). The inspection clarified the position of the Responsible Authorities on issues of land management and landscape treatment related to waterways, the Golf Course and areas of the land identified as being of high conservation significance.

4 Responsibilities

It is the intention of Monash Views Pty Ltd and the Yallourn Golf Club to manage the subject land in accordance with best practice and as specified in this Land Management Plan. It is intended to subdivide the land and create a number of reserves which will ultimately vest in and be the responsibility of the Latrobe City Council.

5 Stormwater Management Plan

5.1 Authority Requirements/Feedback

A Surface Water Management Strategy is required for the subject site that outlines surface water treatment and storage for the future post-development environment.

5.2 Surface Water Management Strategy

The Surface Water Management Strategy, Water Technology May 2013 (Appendix 2) identifies four sub-catchments. The four sub catchments are referred to as the southern catchment, central catchment, north catchment 1 and north catchment 2 (Figure 3). Each catchment has been allocated appropriate flood attenuation and WSUD strategies to manage flooding and water quality in the post-development environment (Figure 4).

Figure 3: Sub-catchment Plan

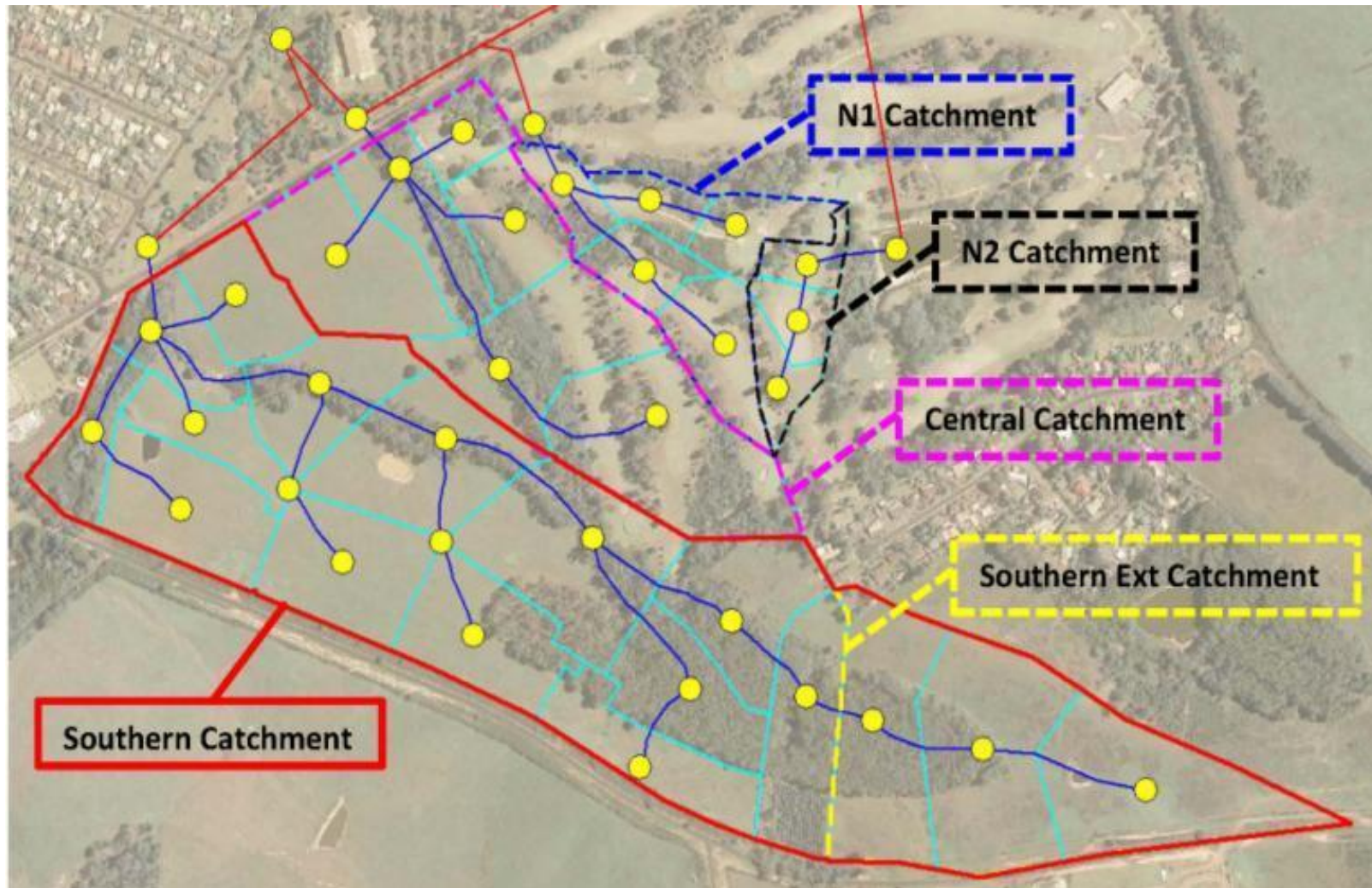
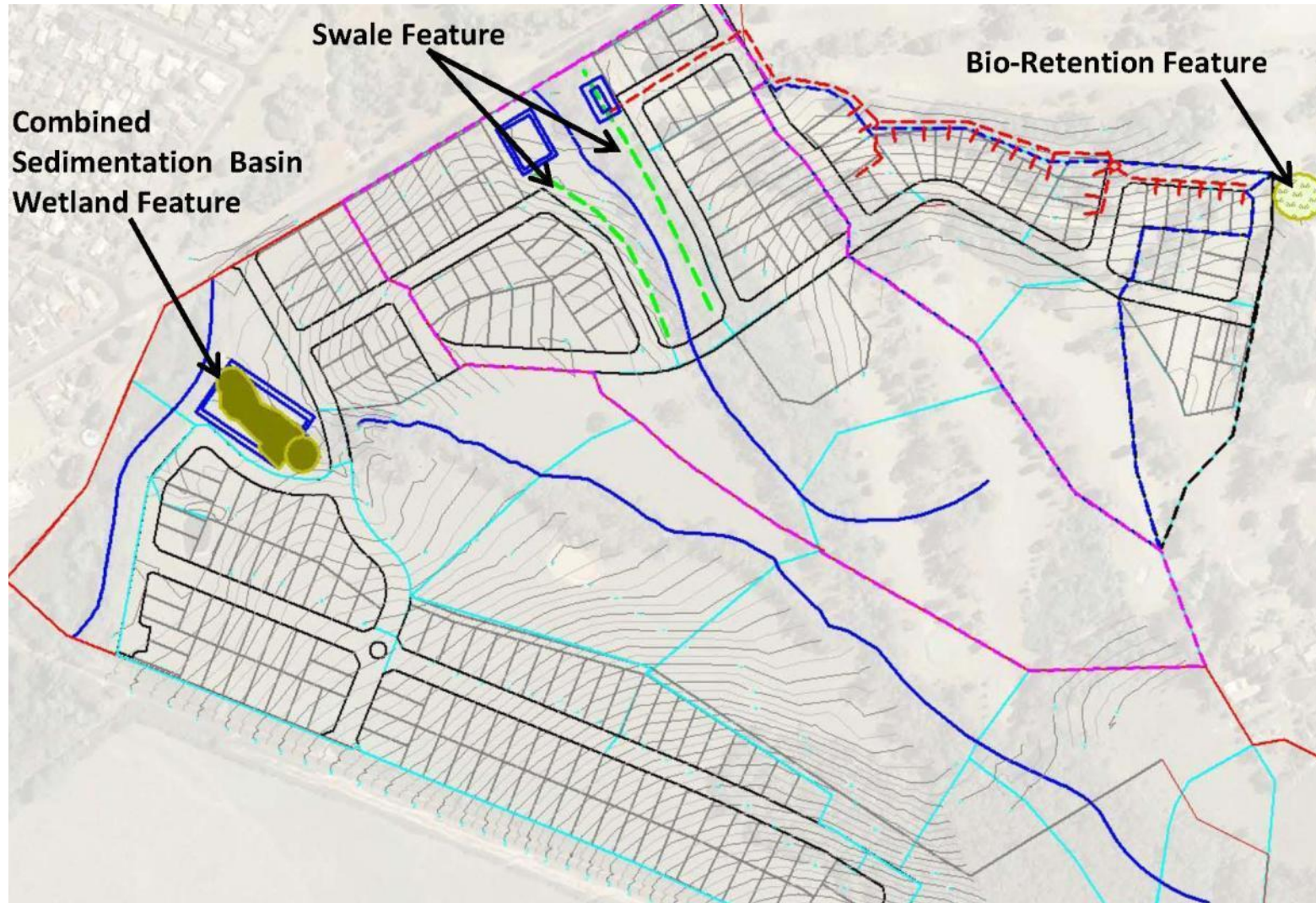


Figure 4: WSUD Feature Overview



Southern Catchment Strategy:

- Construct a combined wetland / retarding basin feature in the waterway reserve of the site consisting of 3,600m³ of flood storage and a wetland with a surface area of 4,300m² to mitigate post-development flows back to existing (pre-development) conditions; and treat site flows to best practise target levels.
- To meet water quality targets, the wetland / retarding basin feature should be combined with a sedimentation basin 1.0 metres deep, with surface area of 200m² and a permanent pool volume of 89m³.

Central Catchment Strategy:

- Construct two small retardation basins, one with a volume of 770m³ (1,345m²) on the south western bank of the waterway corridor (offline) and the other 350m³ (1,345m²) on the opposite (north eastern) bank of the waterway to capture and attenuate the 5year piped flows from the North 1 catchment . This combination of features will mitigate post-development flows back to existing (pre-development) conditions.
- Construct a series of catchment swales with a cumulative length of 325m within the waterway reserve of the site to treat site flows to best practise target levels.
- Plant appropriate vegetation in the swale features to achieve water quality treatment refer to section **9.3 Waterways and WSUD** for further information on vegetation composition.

North Catchment 1 Strategy:

- Construct a pit and pipe network to connect developed areas of the catchment to the central waterway drainage reserve. This pipe system would be designed to convey system flows up to the 5 year ARI event (nominally 0.202m³/s). Preliminary analysis suggests that this network could be serviced by a 300mm dia. pipe and require a network with cumulative length of 560m;
- No WSUD feature is recommended for this catchment, instead additional treatment has been delivered in the southern catchment wetland to demonstrate overall best practise treatment levels.

North catchment 2 Strategy:

- Construct a bio-retention feature (approximately 50m² in size) to treat and infiltrate site (low) flows before conveying them to the Golf Course dam. Flows from significant events will bypass the bio retention feature and report directly to the Golf Course dam.
- To achieve water quality treatment of site flows the bio retention feature will be managed as a 50m² rain garden and will be located within the road reserve. Maintenance details will be provided as part of the detailed design.

- Additional bunding or modification to the outlet configuration on the existing Golf Course dam is recommended in order to manage site flows from significant events.

5.3 Recommendations

Detailed design of flood attenuation and WSUD elements will be required at the subdivision stage. The Surface Water Management Strategy provides recommendations that in the event of the development being staged the WSUD features can be implemented progressively to ensure that *best practice water quality treatment targets* are met.

A Functional Layout Plan will be required as a condition of permit and should be undertaken in accordance with the Surface Water Management Strategy prepared by Water Technology in May 2013 and to the satisfaction of the WGCMA and the Latrobe City Council.

6 Waterway Management Plan

6.1 Authority Requirements/Feedback

WGCMA requests that appropriate buffers be defined adjacent to waterways and seek explanation of proposed weed control regimes and the extent of revegetation.

The WGCMA supports the inclusion of appropriate buffers between development areas and waterways. It is emphasised that the possible impacts on the waterway as a result of the removal of any remnant native vegetation associated with the Golf Course realignment must be mitigated through good land management practices.

6.2 Existing conditions

There are three small waterways on the subject land which form part of the Sandy Creek Catchment. The three small waterways feed into Sandy Creek before discharging into Lake Narracan. The three waterways are naturally occurring on the site however have been extensively modified. A large portion of the waterways are not fenced from stock and as a consequence the understorey and ground cover is relatively species poor and dominated by exotic pasture grass.

Sandy Creek contains a heavy infestation of weedy species including: Blackberry, Sweet Pittosporum and weedy Wattles. An opportunity exists to better manage weedy plants and encourage the natural regeneration of indigenous species to benefit the environment, the amenity of the Golf Course and the future residential development.

6.3 Managing a healthy waterway

Waterway management should aspire to a self-sufficient ecology whereby indigenous plant communities naturally regenerate of their own accord. Managing waterways toward this goal requires a 3 tiered approach of protection, weed control and indigenous revegetation.

Protection:

Waterways require protection from the environmental pressures of an urban landscape. The MVDP has responded to this by excluding residential development within proximity

of waterways wherever possible. The Golf Course and development abutment to the waterways are a key management issue.

Historically, the waterways have been encumbered with the pressures of grazing and the operation of the Golf Course. These pressures have conspired seeing weedy species, pollutants, soil disturbance and erosion factoring in the creation of degraded conditions. It is essential to the healthy management of the waterways that an appropriate vegetated buffer be created between the waterway and the development areas including the Golf Course.

Vegetated buffers will alleviate environmental pressures giving the best opportunity for a successful weed control and revegetation program within the waterways. Refer to section **9.3 Waterways and WSUD** for further information on vegetated buffers.

Weed Control:

Weed control is required to facilitate an environment in which indigenous plant species may prosper. Weed infestation within the waterways is caused by seed dispersal from weeds occurring across the subject land and within adjoining land. It would be prudent to ascertain the extent of any weed management programs that may be occurring in the area prior to undertaking weed control within the waterways. The use of herbicides within and surrounding waterways should be limited to products that will not detrimentally affect amphibian wildlife (such as Roundup Biactive). Following waterway revegetation works persisting weed species may require the localised application of herbicide (see section **7.3.2 Weed Species** for further details on weed control).

Indigenous revegetation:

Sections of waterways will require re-vegetation in areas of disturbance. Disturbance may be as a result of development, Golf course re-alignment, weed management or other construction/maintenance activities. It should be emphasised that where soil disturbance is affected weeds have the opportunity to colonise. By revegetating areas of disturbance, indigenous species have the opportunity to colonise and develop communities.

Through a combination of good weed management and indigenous revegetation, opportunity for a self-sufficient native ecology can be created.

6.4 Recommendations

A Landscape and Maintenance Plan will be required as a condition of permit for all waterways to detail buffer planting, weed control and revegetation works (representative of the appropriate Ecological Vegetation Class) in accordance with the Waterway Management Plan. The Landscape Plan should be prepared in accordance with section **9 Landscape Management Plan** and, amongst other things, will require where appropriate the use of suitable indigenous species for revegetation. The Maintenance Plan should detail short, medium and long term management of the waterways.

7 Native Vegetation

7.1 Authority Requirements/Feedback

This Land Management Plan has been prepared during a transition phase for Victoria's permitted clearing regulations. *Victoria's Native Vegetation Management – A Framework For Action* was the guiding policy superseded in December 2013 by the *Biodiversity Assessment Guidelines* and associated documents (reforms package). The reforms package changed the Victorian Planning Provisions (VPP) and adopted a 'no net loss' approach rather than the previous 'net gain' approach with an emphasis on the protection of biodiversity across the landscape. The primary goal of the superseded framework was to see:

A reversal, across the entire landscape, of long-term decline in the extent and quality of native vegetation, leading to a Net Gain.

The framework applied a three step approach of: avoid, minimise and offset for native vegetation removal. The native vegetation and biodiversity reforms package was released in December 2013 and seeks:

To ensure that permitted clearing of native vegetation results in no net loss in the contribution made by native vegetation to Victoria's biodiversity.

Authority feedback predating the native vegetation and biodiversity reforms package advised that Ministerial sign off would be required for the removal of native vegetation with a conservation significance of 'Very High'. Justification of why avoidance of VHCS vegetation could not be achieved was required with an explanation of steps taken to explore alternatives.

In May 2014 CFA Gippsland Region confirmed that the southern patch of vegetation on the MVDP will be subject to the Bushfire Management Overlay. Once the Bushfire Management Overlay applies, a setback of 76 metres from future dwellings will be necessary and any vegetation within the prescribed setback will require appropriate management.

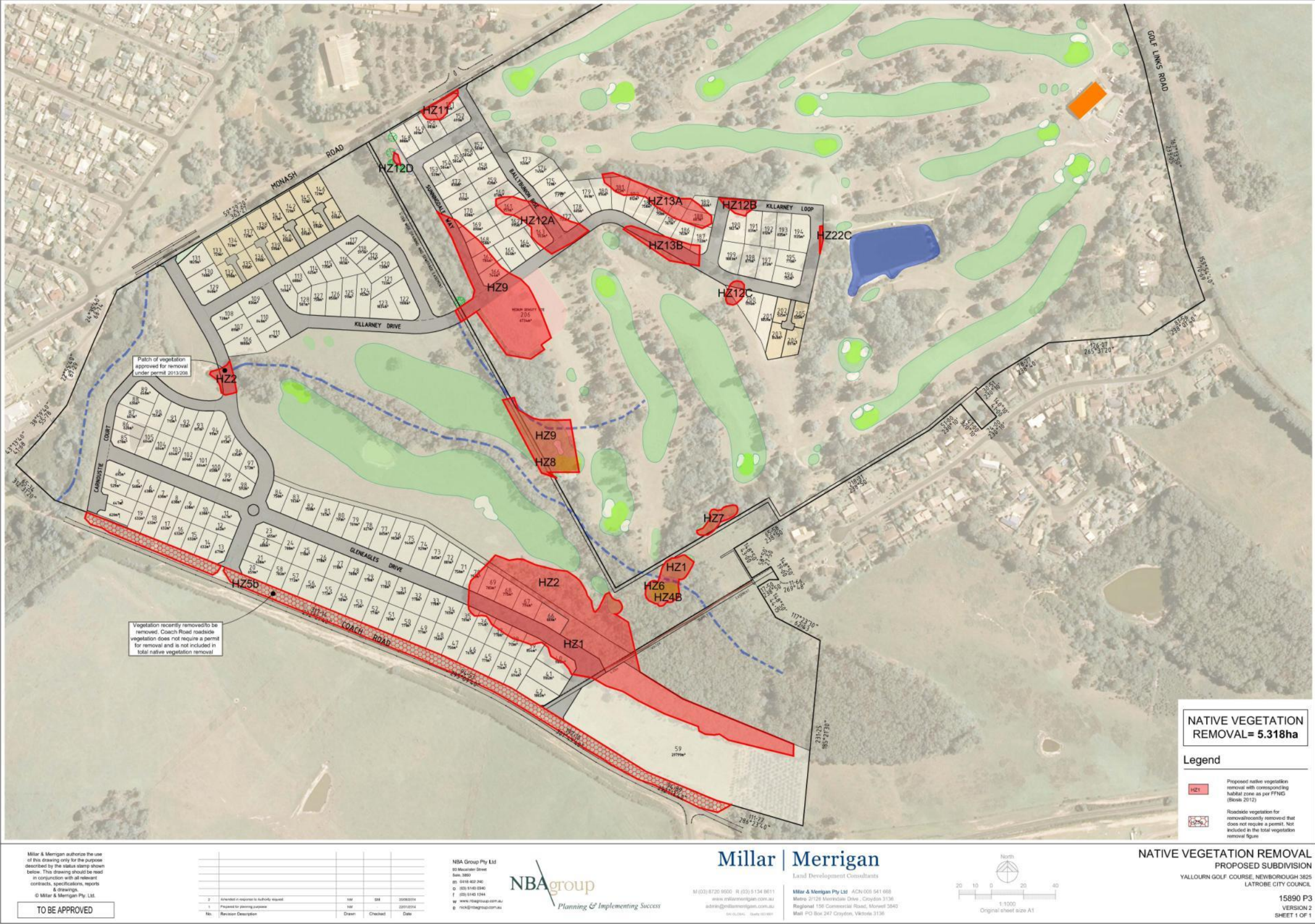
It is noted that section **7 Native Vegetation** provides consideration to both the previous and current native vegetation legislation given that department feedback was received during a period of policy transition.

7.2 Net Gain Assessment / Biodiversity Impact & Offset Requirements Report

The FFNG was prepared by Biosis Research in August 2012 (Appendix 1). The FFNG mapped a total of **18.88 hectares** of native vegetation within the study area inclusive of road side vegetation of which the MVDP proposes to remove **5.318ha** (Figure 5).

Since the preparation of the MVDP the native vegetation and biodiversity reforms package has been implemented (December 2013). As determined by department mapping released under the biodiversity reforms package the proposed native vegetation removal must be assessed under the 'high risk-based application pathway'. In accordance with the 'moderate' and 'high risk-based pathway' application requirements the site assessment data for proposed native vegetation removal detailed in the FFNG was provided to DEPI Transition Support to facilitate a *Biodiversity impact and offset requirements report* (BIORR). The offset requirements detailed within the BIORR (Appendix 9) are for **0.491 general biodiversity equivalence units**, with a minimum strategic biodiversity score of 0.149, within the West Gippsland Catchment or the Local Municipal District where clearing takes place.

Figure 5: Native Vegetation Removal Plan (May 2014)



7.3 Vegetation Removal

7.3.1 Native Vegetation

Native vegetation across the site has been marked for removal as part of the MVDP and assessed as part of the FFNG. The FFNG concludes that approximately **5.91ha** of vegetation is proposed for removal. Since the preparation of the FFNG (August 2012), the MVDP and the extent of proposed native vegetation removal has been revised in accordance with the principles of avoid, minimise, offset and to provide defensible space in accordance with CFA feedback. Additionally the status of road side vegetation along Coach Road assessed as degraded treeless vegetation in the FFNG has been confirmed. Degraded treeless vegetation/regrowth vegetation does not require a permit for removal and has not been considered as native vegetation for the purpose of calculating native vegetation losses. As such total native vegetation removal has been revised to **5.318ha** (Figure 5).

The MVDP has sought to avoid vegetation removal wherever possible throughout the design evolution of the residential development and Golf Course re-development. Preliminary designs for the residential development and Golf Course were prepared with reference to the Flora and Fauna assessment and Net Gain investigations undertaken by Ecology and Heritage Partners in 2005. In response to the report the design of the residential development and Golf Course were informed as follows:

- Where possible the areas of highest quality vegetation were retained with regard to issues of patch size and connectivity.
- Waterways and associated buffers were retained as per WGCMA requirements to provide for vegetation/habitat corridors.
- A significant percentage of the development site was earmarked for vegetation reserves. This facilitated areas large enough to preserve ecological values and promote connectivity within the site and beyond.
- Areas of poorer quality vegetation were earmarked for removal, higher quality vegetation was largely avoided and minimised to the extent of only requiring removal to satisfy requirements relating to the provision of an economical design and servicing imposed by various authorities.

Figures 6 to 7 below demonstrate how the plan has progressed in response to the Flora and fauna assessments undertaken by Ecology and Heritage Partners in 2005.

Figure 6: Development Plan 1 (circa August 2005) – this plan did not respond to native vegetation in the south east corner appropriately.

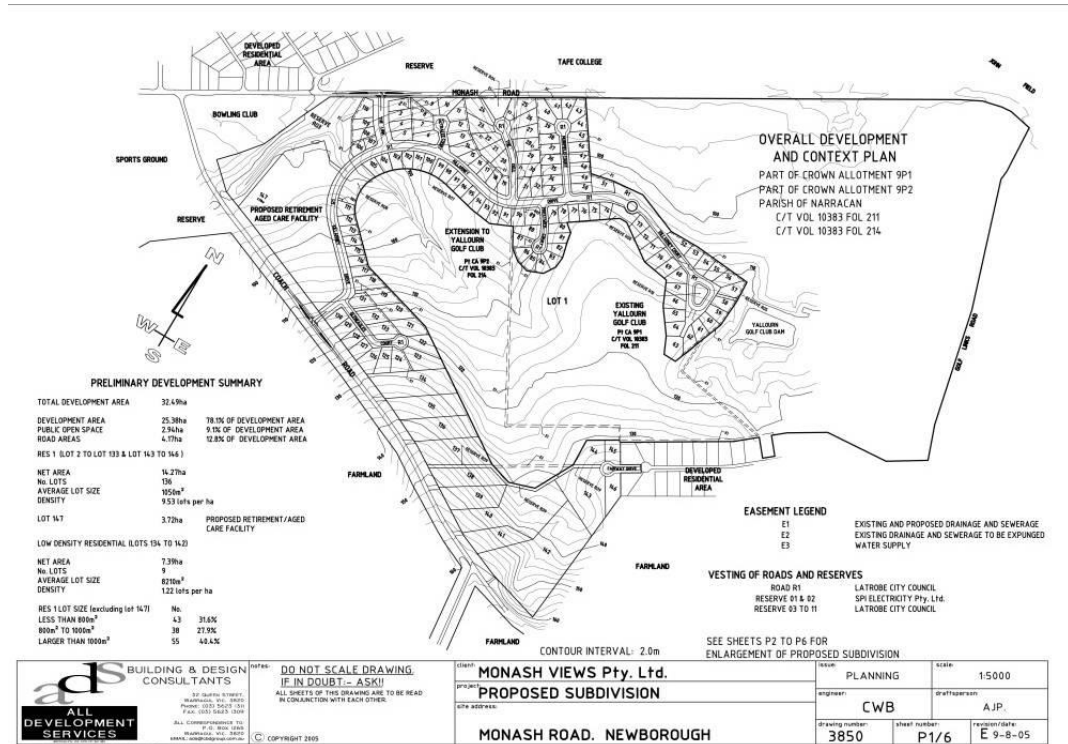


Figure 7: Development Plan 2 (circa July 2011) – this plan responded to the Flora and Fauna assessment through the creation of generous reserves for vegetation protection and avoids vegetation in the south east corner of the site.



Following the Ecology and Heritage Partners assessment and investigations, Biosis Research were commissioned to undertake a review of the Flora and Fauna assessment and provide an assessment of the Development Plan which would guide the future development and management of the proposed Golf Course, residential development and reserves. Biosis completed their assessment in August 2012 and issued the FFNG.

The redesign of the golf course with respect to the 2nd hole exemplifies the way in which the design process was informed by the principles of avoiding and minimising vegetation removal. Golf Course Architects Ogilvy Clayton originally designed the 2nd hole as a short par 3 to limit vegetation removal so as the green would nestle within the surrounding bushland. Minimal vegetation removal was required to accommodate the green. Following the preparation of the FFNG and a detailed site survey, the 2nd hole was further revised and the green was shifted approximately 20 metres to the right (North) and down the hill. The design revision managed to reduce the area of vegetation impact by 32% from the original proposal.

The Development Plan has sought throughout the design process to avoid and minimise native vegetation removal. Where vegetation removal has been unavoidable it is for the purpose of providing an economical design and for servicing requirements imposed by various authorities. All vegetation removal can and will be offset in accordance with section **7.4 Offset Strategy**. Where vegetation removal is unavoidable effort has been made to minimise impact to significant vegetation categorised as VHCS in the FFNG. Table 7.2 provides clarification to the extent of VHCS vegetation being removed, why it is unavoidable and how its removal has been minimised.

Table 7.2 Removal of VHCS Vegetation

Habitat Zone	Extent of removal	Reasons for not avoiding	Minimising impacts
4b	0.04 HHa	Vegetation removal is required to accommodate the proposed 2nd hole green. As part of the design review process moving the green forward of the vegetation was explored but the hole could not be made long enough to constitute a golf hole. Additionally to position a green forward of the vegetation would require a significant amount of earthworks including rerouting of the creek.	The design of the 2nd hole was revised following expert advice from Biosis and the green was shifted approximately 20 metres to the right (North) and down the hill. The design revision managed to reduce the area of vegetation impact by 32% from the original proposal. By shifting the green, the gully low point can be incorporated into the design as a natural hazard and revegetated to represent its natural state. Revegetating the gully low point will allow for a continuous habitat link.
8	0.01 HHa	Vegetation removal is required to facilitate a road connection requested by Council as a design amendment to the original plan	The road connection has been located through an area of Burgan devoid of any canopy trees.
8	0.04 HHa	Vegetation removal is required to accommodate the proposed 4 th hole. The Golf Course architects advise that to avoid vegetation removal the 4 th hole green would need to be at least 20 metres forward of the vegetation. This would only allow enough length for a long par three. With short holes at the 2 nd , 5 th and 8 th another short hole would severely compromise the course.	Revegetation works will provide a habitat link around the back of the 4th hole green. Buffer vegetation will be utilized adjacent to the waterway to offer protection from environmental pressures associated with the Golf Course. The green has been situated such that it does not dissect a waterway.

7.3.2 Weed Species

All land owners and land occupiers (public and private) are responsible for managing noxious weeds on their land under the Catchment and Land Protection Act (CaLP) and any local laws:

Ecology and Heritage Partners recorded the flora on site in June 2005 (Appendix 3) and tabled introduced species. Of the introduced species recorded the following species were listed in the FFNG as noxious weeds and as such will need to be eradicated as part of ongoing land management under the CaLP Act:

- Blackberry *Rubus fruticosus* sp. agg.
- Montpellier Broom *Genista monspessulana*
- Ragwort *Jacobaea vulgaris*
- Spear Thistle *Cirsium vulgare*

Details for methods, timing and actions of weed control for noxious species recorded on site are tabled below (Table 7.3).

Introduced species across the Golf Course site will be phased out over time through a process of selective removal and ensuring future planting utilises indigenous species. In addition to the introduced flora species recorded in June 2005 the following introduced species were identified during a site inspection on the 20th of February 2013:

- Capeweed *Arctotheca calendula*
- Cedar Wattle *Acacia elata*
- Cocksfoot *Dactylis glomerata*
- Freesia *Freesia* sp.
- Kikuyu *Pennisetum clandestinum*
- Large quaking grass *Briza maxima*
- Paspalum *Paspalum dilatatum*.
- Southern mahogany *Eucalyptus botryoides*
- Swamp mahogany *Eucalyptus robusta*
- Sydney blue gum *Eucalyptus saligna*
- Wattle (hybrid) *Acacia elata x dealbata*
- Weeping willow *Salix babylonica*
- Willow species *Salix* sp.

Table 7.3 Noxious Weed Control

Botanical name	Common Name	Status	Flowering time	Method of control	Time of control
<i>Cirsium vulgare</i>	Spear thistle	Noxious weed (Annual/biennial)	Spring - Autumn	Manual/herbicide spray	Spring
<i>Genista monspessulana</i>	Montpellier Broom	Noxious weed (Perennial)	Winter – Spring	Manual/cut & paint	Spring
<i>Jacobaea vulgaris</i>	Ragwort	Noxious weed (Biennial)	Summer	Manual/herbicide spray	Spring / Summer
<i>Rubus fruticosus</i> sp. agg.	Blackberry	Noxious weed (Perennial)	Summer	Manual/herbicide spray	Spring

Weed control measures are specific to the particular weed being controlled. Pasture weeds typically have a shallow root system and can be starved of nutrients and water should good quality revegetation occur. Seasonal slashing will be required in conjunction with a program of soil disturbance and indigenous revegetation which will control most pasture weeds.

Persistent and aggressive weeds will require control by either manual removal or the application of appropriate herbicides. The use of herbicides is a hazardous application and must be undertaken by a qualified person who has all the required expertise and safety equipment including (but not limited to) boots, clothing, eye protection, skin protection and breathing masks.

Weed removal should begin at the highest point of the land. Weeds are spread by movement of their seeds or other plant parts moving downhill and along waterways. By commencing a weed program upstream it will help to reduce the risk of weeds reinfesting treated sites further down slope or downstream.

Regular weed assessments should be undertaken to record the cover and diversity of persisting weeds and any future weed outbreaks. Seasonal weed assessments are essential in identifying the success of weed control techniques. Regular assessment may identify the need to modify weed control techniques for persisting weed species.

7.4 Offset Strategy

In order to offset native vegetation removal associated with the proposed subdivision and golf course re-development, the proponent will be required to offset **0.491 general biodiversity equivalence units**, with a minimum strategic biodiversity score of 0.149, within the West Gippsland Catchment or the Local Municipal District where clearing takes place as detailed in the BIORR (Appendix 9). The offset strategy proposed is for a third party arrangement. Native vegetation credit extracts will be sourced through an accredited offset broker to satisfy offsets prescribed in the BIORR.

7.5 Recommendations

This Land Management Plan considers native vegetation removal within the context of the MVDP. The MVDP has been revised in consultation with expert reports and authority feedback to limit the impact of the proposed subdivision and golf course redevelopment on native vegetation. It is assumed that offsets will be achieved through the sourcing of native vegetation credit extracts, which will be enacted as a requirement of permit for native vegetation removal in accordance with section **7.4 Offset Strategy**.

8 Rare and Threatened Species Management Plan

8.1 Authority Requirements/Feedback

The Department requires measures be identified to protect rare or threatened species. The FFNG reported that the vegetated areas of the subject site provide habitat to various bird and mammal species and discusses the low likelihood of many threatened species being present on site due to the modified conditions. It did however identify the Grey Goshawk, Black Falcon, Powerful Owl and Swamp Skink as being the most likely significant species to occur in the study area. Other species of note were the Glossy Grass Skink which is listed as near threatened within Victoria. The assessment reported that:

This species has a medium likelihood of occurring within drainage lines of the study area.

It also states that Terrestrial crayfish *Engaeus spp.* are common throughout Gippsland and that:

The burrows of Engaeus sp. were observed within the drainage lines of the study area. Several threatened species of terrestrial crayfish are known from the region such as the Narracan, Strzelecki and Warragul Burrowing Crayfish.

A Site Environmental Management Plan (SEMP) and Site Construction Management Plan (SCMP) will be prepared at the subdivision stage as a condition of permit and will detail the protection of rare or threatened species with reference to the EVC's identified in the FFNG (appendix 1) and Table 8.1 which summarise the most likely locations for potential habitats.

Table 8.1 Significant Species

Species name	Area most likely to occur (EVC)
EPBC Act listed species	
Dwarf Galaxias	Drainage Lines and wet depressions
DSE Advisory Listed Species	
<u>Flora</u>	
Orange-tip Finger-orchid	Lowland Forest
Slender Pink-fingers	Lowland Forest
Mountain Bird-orchid	Lowland Forest and Swampy Woodland
Slender Tick-trefoil	Lowland Forest and Swampy Woodland
Green Scentbark	Forest
<u>Fauna</u>	
Grey Goshawk	Forest
Black Falcon	Woodlands and open pasture
Powerful Owl	Woodlands and Forest
Swamp Skink	Drainage lines with indigenous swamp scrub understory

8.2 Site Environmental Management Plan (SEMP)

- a.) Consideration to the occurrence of significant species that may occur on site as identified in the FFNG.
- b.) The person responsible for implementing the SEMP
- c.) A notation that habitat connectivity must be protected and enhanced where practical.
- d.) A notation that during the months of September – November vegetation must be checked for wild life prior to removal by a suitably qualified contractor. Should wildlife be found within hollows tree removal must cease and appropriate salvage and translocation undertaken.
- e.) A notation that vegetated buffers be implemented to the perimeter of potential habitat zones for rare or threatened species adjacent to the development and/or Golf Course particularly along drainage lines.
- f.) A site plan or plans identifying the above measures.

8.3 Site Construction Management Plan (SCMP)

- a.) The person responsible for implementing the SCMP.
- b.) Measures for identifying vegetation prior to removal and how it will be removed.
- c.) A notation that trees lopped or felled may only be dropped where clearance is such that tree fall will not cause impact to adjacent trees. Where dropped trees do not interfere with the safe operation of the Golf Course they are to be left to decompose over time. Tree removal likely to impact other trees must be removed limb by limb using a cherry picker or similar sensitive technique.
- d.) Measures to identify and protect rare and threatened species and/or potential habitat including but not limited to:
 - A notation that during the months of September – November vegetation must be checked for wildlife prior to removal by a suitably qualified contractor.
 - A notation that if wildlife is discovered vegetation removal must cease and appropriate salvage and translocation undertaken.
- e.) Erosion and sediment control measures to ensure no polluted and/or sediment laden run off is discharged directly or indirectly into drains or water courses.
- f.) Details of vehicle and equipment hygiene measures to be used to prevent the spread of weeds and pathogens to and from the site.
- g.) A site plan or plans identifying the above measures.

9 Landscape Management Plan

9.1 Authority Requirements/Feedback

The CFA request explanation as to how interfaces between vegetation and residential allotments will be managed to address bush fire risk.

In May 2014 CFA Gippsland Region confirmed that the southern patch of vegetation on the MVDP will be subject to the Bushfire Management Overlay. Once the Bushfire Management Overlay applies, a setback of 76 metres from future dwellings will be necessary and any vegetation within the prescribed setback will require appropriate management.

9.2 Residential interfaces

The treatment of interfaces between residential allotments and the Golf Course, public reserves and the abutting road reserves will be the subject of detailed design at the subdivision stage. The Indicative Interface Treatment Plan (Appendix 4) suggests typical treatments and should inform detailed design at the subdivision stage. Interface treatment will be required to consider fencing styles in accordance with the following:

- a) 1.5m high powder coated black chain wire mesh fence to the interface of the residential development with the Golf Course.
- b) Encourage no fence or a visually open fence for allotments fronting the Pedestrian/Bicycle network to maintain a sense of openness within the landscape.

9.3 Waterways and WSUD

Buffering waterways from the Golf Course and development is a key component of the Waterway Management Plan. Vegetated buffers combined appropriately with WSUD elements will alleviate environmental pressures giving the best opportunity for a successful weed control and revegetation program within the waterways. Vegetated buffers and WSUD elements will be implemented within each of the four catchments identified in the Surface Water Management Strategy (Appendix 2). The extent of vegetated buffers and WSUD elements within each catchment will be the subject of

detailed design at the subdivision stage. Vegetation utilized within buffers and WSUD elements needs to fulfil the following criteria:

- Indigenous species;
- Contribute to the aesthetics of the Golf Course and residential development;
- Provide a deterrent to pedestrians/Golf Course patrons entering the waterway;
- Capable of high nutrient uptake;
- Tolerant of periodic inundation;
- Erosion/bank stabilisation;

Planting within vegetated buffers is to be representative of the appropriate Ecological Vegetation Class and be in accordance with section **6 Waterway Management Plan**. A list of appropriate plants for vegetated buffers can be referenced at (Appendix 5).

9.4 Public Open Space and Streetscape

The MVDP provides public open spaces that cater for passive and active recreation through a series of interlinked pedestrian walkways. It is important to provide a variety of public reserve typologies. There is opportunity within the proposed residential development for active public space in proximity to the proposed wetlands and retarding basins, passive spaces will be provided in the form of vegetated reserves.

Active open spaces will be maintained as mown grass and surrounding trees will be managed as amenity trees with formative pruning undertaken as necessary. Passive open spaces will be managed as vegetation reserves for the purpose of ecological function. Of particular importance are the reserves located within two gullies off Monash Road, which provide a good opportunity for riparian revegetation and rehabilitation.

Future dwellings will be orientated to overlook public open space to maximise surveillance and create a sense of safety throughout the development. Public open spaces will be required to consider passive surveillance which incorporates appropriate sight lines through the use of:

- Low growing shrubs, tufting plants and ground covers which abut dwellings and pedestrian links.
- Trees with clear trunks adjacent to dwellings and pedestrian links.

Typical landscape treatments which allow for effective passive surveillance are exemplified in Figures 8 and 9.

Figure 8.

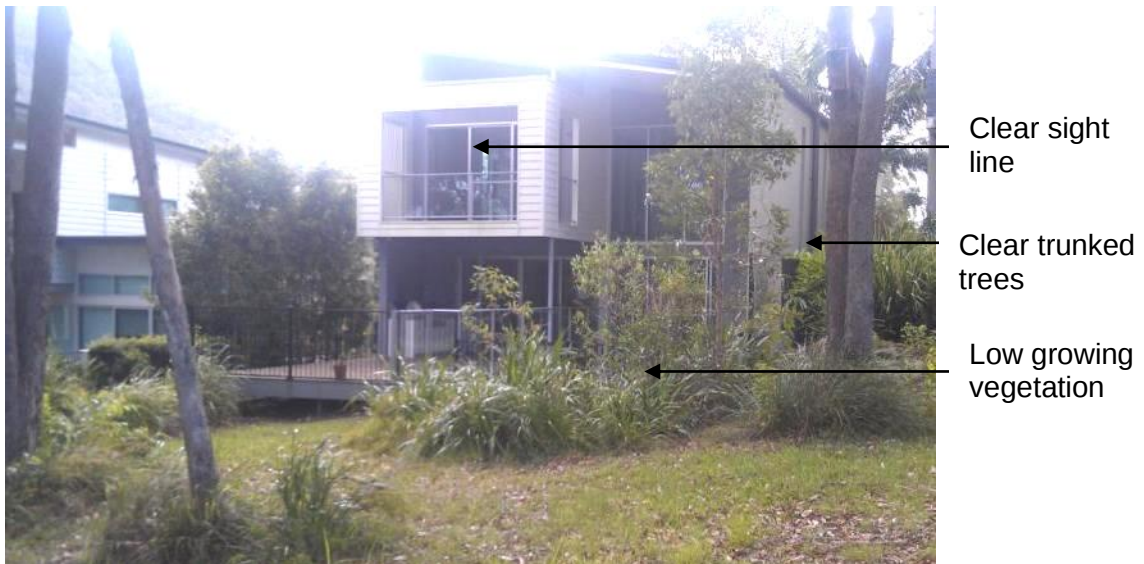
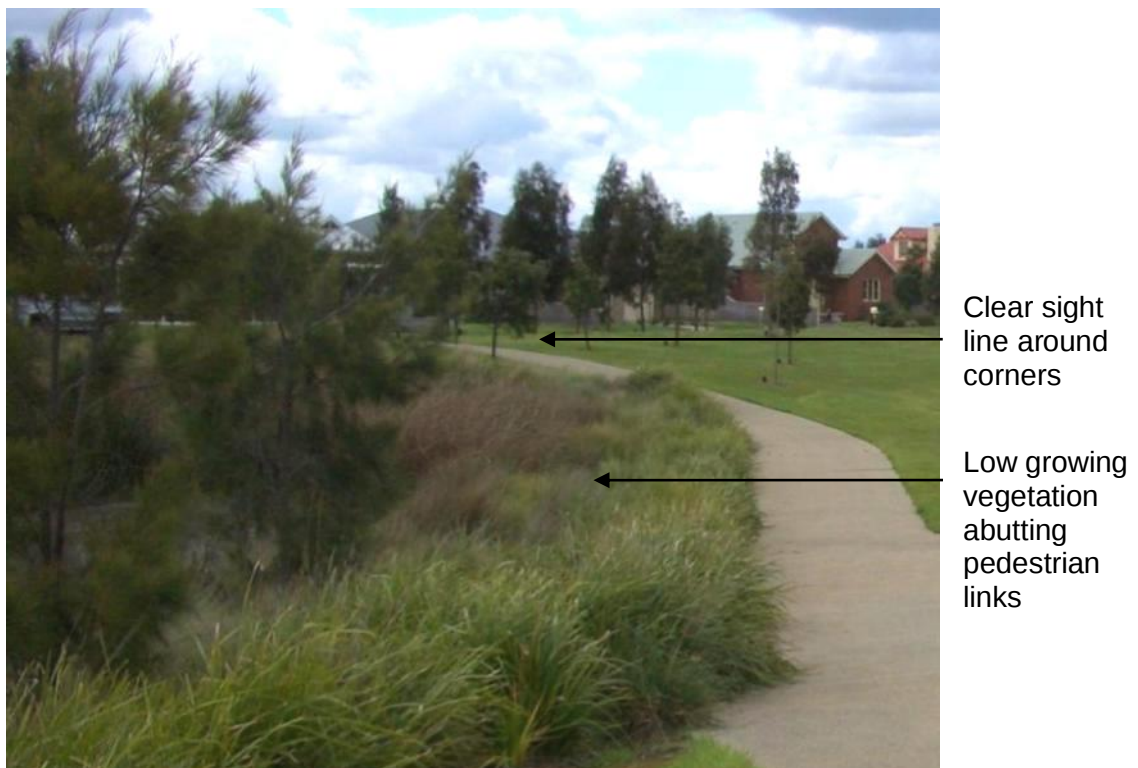


Figure 9.



A Landscape and Maintenance Plan generally in accordance with the Landscape Concept Plan (Appendix 6) will be required as a condition of permit to detail treatment

of public reserves, streetscapes, path networks, buffers, interfaces, weed control and other maintenance actions that may be required in accordance with section **7 Native Vegetation**.

9.4.1 Managing Fire Risk

The subject land is within a designated bushfire prone area and as such bushfire construction requirements apply to the development of future dwellings.

To enable acceptable BAL's (Bushfire Attack Level) for the proposed allotments, additional vegetation management may be required. A combination of shared paths and management access tracks between allotments and vegetated reserves/Golf Course vegetation may provide an opportunity to establish a non-flammable surface to serve as a fire break.

The main threat from bushfire is presented from the large patch of vegetation in the southern corner of the site. The southern patch of vegetation shown on MVDP will be subject to the Bushfire Management Overlay, in addition to the current Bushfire Prone Area (Building Regulation). Once the Bushfire Management Overlay applies, a setback of 76 metres from future dwellings will be required (comprising 53 metres inner zone defensible space, and 23 metres of outer zone defensible space).

The MVDP nominates a super lot within proximity the southern patch of vegetation. Further consultation with the CFA will be required prior to an application to subdivide to determine an acceptable subdivision layout for this lot. The detail of any interface treatments and fire risk responses will need to be considered at the time of subdivision.

A Landscape and Maintenance Plan will be required as a condition of permit to detail any required management of vegetation located adjacent to residential allotments.

9.5 Golf Course

The current Golf Course landscape features a mix of indigenous, introduced and weedy plant species which will require management complimentary to the management of native vegetation as detailed in section **7 Native Vegetation**. The Golf Course presents a number of land management challenges notably interfaces to waterways, habitat links

and the management of Golf Course vegetation including introduced and weedy species.

Where the Golf Course abuts a waterway the interface will need to be managed effectively to prevent the spread of exotic fairway grasses into the waterway. Waterways will be buffered from the Golf Course in accordance with section **6 Waterway Management Plan**.

Maintaining and enhancing habitat links across the site will improve overall biodiversity. Habitat links afford fauna the opportunity to move throughout the site encouraging greater species diversity and a healthy ecology. Existing habitat links will need to be managed to ensure the protection of canopy and understorey connectivity. Habitat links should be enhanced where practical with bridging vegetation connecting previously unconnected tracts of vegetation. In an effort to enhance biodiversity across the site introduced and weedy species will need to be controlled on the Golf Course. Weeds should be controlled with reference to section **7.3.2 Weed Species**.

The management of Golf Course vegetation must consider the aesthetics and playability of the course. Ideally, vegetation between fairways should aspire to an understorey layer, canopy layer and middle storey. In areas where *Kunzea* is becoming invasive the middle storey may need to be managed. Figure 10 and 11 typify ideal vegetation composition between fairways.

Figure 10.



Figure 11.



Ogilvy Clayton prepared the re-design of the Yallourn Golf Course and state:

Of high importance will be a re-vegetation plan in order to ensure the new holes feel much like the rest of the Golf Course and this should include low, middle and high storey plants which are indigenous to the region.

It is anticipated that a Landscape and Maintenance Plan for the Golf Course will be required as a condition of permit detailing the following:

- The location and extent of buffers between the Golf Course and waterways.
- Identification of potential habitat links and measures to enhance links where possible.
- A maintenance plan for the Golf Course.

10 Noise Management

10.1 Noise Assessment

Two separate noise assessments have been undertaken for the Gippsland Car Club and Blue Rock Motorcycle Club. The Gippsland Car Club operates from the Hill Climb Track at 170 Coach Road Yallourn with access off Bill Schulz Drive. The site is subject to planning permit 06050/A & B. The Blue Rock Motorcycle Club has a facility located on Coach Road Yallourn.

Marshall Day Acoustics completed a Noise Assessment on behalf of the Car Club in 2005, this is titled *Gippsland Car Club Hill Climb Track measured and Predicted Noise Levels September 2005* and is provided at Attachment 5. The report concluded that the impact of noise from this facility is not considered to be a significant issue to potential new residents in the area.

An environmental noise assessment was undertaken by Hazcon Pty Ltd on behalf of Blue Rock Motorcycle Club in October 2000. The report titled *Environmental Noise Assessment For Motor Cross Circuit October 2000* concluded that there was no notable increase in noise levels at the nearest residence as a result of motorcycle activity on the testing day.

The closest current existing residence (in Linkside Court) from which testing was conducted for both reports is located approximately 340 metres from the Blue Rock Motorcycle Club. The closest lot on the proposed Monash Views Development Plan would be located approximately 360 metres from the Blue Rock Motorcycle Club. This lot is also adjacent to planted vegetation which may assist in acting as a buffer to the lot.

Events are held at the Car Club Hill Climb Track approximately 30 weekends each year and the Blue Rock Motor Cycle Club is open most weekends of the year. To date no known complaints have been made to Council from nearby residents in relation to noise. Both facilities operate under a planning permit which restricts periods of operation with consideration to the protection of amenity for nearby residents.

10.2 Recommendations

Given that the use of the facilities in question are generally limited to weekends, that Council have received no known noise complaints from nearby residents and that past noise assessments found negligible noise impacts to nearby residents, it is not considered that the impact of noise is a significant issue for the proposed Monash Views Development Plan. Furthermore it would be expected that any residents considering moving to the area would be aware of the existing facilities. In responding to the noise assessments the MVDP has retained a large area of vegetation as a buffer to the southern extremity of the site. This buffer vegetation may offer protection.

11 Conclusion & Recommendations

This Land Management Plan outlines guidelines for the management of storm water, waterways, native vegetation, rare and threatened species, landscape and noise. In order to achieve effective management of each, future actions are required at the development stage as a condition of permit and/or as a requirement for further detailed documentation. Future actions required may be summarised as follows:

Functional Layout Plan

- A Functional Layout Plan is required as a condition of permit to detail stormwater treatment and WSUD features. The Functional Layout Plan should be undertaken in accordance with the Surface Water Management Strategy prepared by Water Technology in May 2013 and to the satisfaction of the WGCMA and the Latrobe City Council.

Landscape and Maintenance Plan

- A Landscape and Maintenance Plan will be required as a condition of permit for public reserves and streetscapes to detail path networks, buffers, interfaces, weed control, revegetation and maintenance actions. The landscape plan must be prepared in accordance with sections **6 Waterway Management**, **7 Native Vegetation** and **9 Landscape Management**.
- A Landscape and Maintenance Plan will be required as a condition of permit for the Golf Course to detail the location and extent of buffers between the waterways and the Golf Course, identification of potential habitat links, measures to enhance habitat links where possible and maintenance actions. The Landscape and Maintenance Plan must be prepared in accordance with sections **6 Waterway Management Plan**, **7 Native Vegetation** and **9 Landscape Management Plan**.

Site Environmental Management Plan (SEMP)

- A SEMP is required as a condition of permit to ensure appropriate environmental management and the protection of any rare or threatened species that may occur on site.

Site Construction Management Plan (SCMP)

- A SCMP is required as a condition of permit to ensure appropriate environmental management and the protection of any rare or threatened species that may occur on site during construction.

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Appendix 1 – FFNG, Biosis Research, August 2012

Appendix 3 - Flora Survey, Ecology and Heritage Partners, June 2005

Appendix 4 - Interface Treatment Plan

Appendix 5 - Plants for Riparian Buffer Establishment

Trees

Botanical name	Common name
<i>Acacia dealbata</i>	Silver Wattle
<i>Acacia melanoxylon</i>	Blackwood
<i>Eucalyptus radiata</i>	Narrow-leaf Peppermint
<i>Leptospermum lanigerum</i>	Woolly Tea-tree
<i>Melaleuca ericifolia</i>	Swamp Paperbark

Shrubs

Botanical name	Common name
<i>Banksia marginata</i>	Silver Banksia
<i>Cassinia longifolia</i>	Shiny Cassinia
<i>Coprosma quadrifida</i>	Prickly Current Bush
<i>Correa lawrenceana</i>	Mountain Correa
<i>Goodenia ovata</i>	Hop Goodenia
<i>Leptospermum continentale</i>	Prickly Tea-tree
<i>Leptospermum myrsinoides</i>	Heath Tea-tree
<i>Melaleuca squarrosa</i>	Scented Paperbark
<i>Olearia lirata</i>	Snow Daisy Bush
<i>Solanum aviculare</i>	Kangaroo Apple

Tufting plants & ground covers

Botanical name	Common name
<i>Carex appressa</i>	Tall Sedge
<i>Carex breviculmis</i>	Short-stem sedge
<i>Dichondra repens</i>	Kidney Weed
<i>Eleocharis acuta</i>	Common Spike-sedge
<i>Juncus pauciflorus</i>	Loose-flower Rush
<i>Juncus procerus</i>	Tall Rush
<i>Lomandra longifolia</i>	Spiny-headed Mat-rush
<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Grass
<i>Persicaria praetermissa</i>	Spotted Knotweed
<i>Poa australis</i> spp. agg.	Tussock Grass
<i>Schoenus apogon</i>	Common Bog-sedge
<i>Themeda triandra</i>	Kangaroo Grass

Appendix 6 - Landscape Concept Plan

Appendix 7 - Gippsland Car Club Hill Climb Track measured and Predicted Noise Levels, Marshall Day Acoustic, September 2005

Appendix 8: Environmental Noise Assessment For Motor Cross Circuit, Hazcon Pty Ltd, October 2000

Appendix 9: Biodiversity impact and offset requirements report, DEPI, May 2014