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RESERVE ACTIVITY PLAN 2013-2018



Waverley Flora Park

Advice prepared by Tasflora for Clarence City Council May 2013

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1 BACKGROUND

Waverley Flora Park (the Reserve) is located in the suburbs of Bellerive and Mornington on the eastern shore of the Derwent River in Hobart. It is owned and managed by Clarence City Council (Council).

The Reserve is one of the most highly valued natural assets in the Clarence municipality due to its remnant natural grasslands, grassy woodlands and high diversity of native plant species, including numerous orchids. It is renowned for its prolific wildflower displays in spring, and is also home to an increasing number of animals and birds. The Reserve's extensive track network is also valued by locals for recreational activities.

A Waverley Flora Park Landscape Management Plan (the original Management Plan) was prepared for the Reserve in 1990 which aimed to "identify the natural values of the park and its recreation potential and develop a plan of action which reconciles the two" (de Gryse 1990). An updated Waverley Flora Park Management Plan (the 1999 Management Plan) prepared for the Reserve in 1999 noted that most of the original Management Plan's recommendations had been implemented and provided a new five year Action Plan for management activities in the Reserve (de Gryse 1999).

A further Reserve Activity Plan was developed by Council in 2002, and included recommendations for weed control, entrance enhancements and track maintenance. Tasflora has been engaged by Council to review and update the 2002 plan, including the development of an implementation plan identifying immediate and ongoing management priorities for the Reserve to be undertaken during the period 2013-2018.¹

The recommendations contained within this *Waverley Flora Park Reserve Activity Plan 2013-2018* are intended to provide guidance for on ground activities that can be implemented by Council and/or volunteers (eg Waverley Flora Park Landcare Group, local residents). It is acknowledged that it may not be possible to undertake all recommended activities due to resource constraints; rather the intent of this plan is to provide a guide to management concepts and outcomes that could be achieved if sufficient funding can be obtained.

2 OBJECTIVES

The objectives of the Waverley Flora Park Reserve Activity Plan 2013-2018 are to:

- ensure the Reserve is sustainably managed to preserve and enhance its natural, cultural and social values;
- identify priority management activities to be undertaken within the Reserve by Council and/or volunteer groups as resources become available during the period 2013-2018; and

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¹ The Waverley Flora Park Reserve Activity Plan 2013-2018 falls under Council's Clarence Bushland and Coastal Strategy, which summarises plans and strategies relevant to Reserves within the Clarence municipality.

 encourage community engagement through raising awareness of the Reserve's values and encourage participation in activities to minimise threats to these values.

3 SITE DESCRIPTION

The area covered by the *Waverley Flora Park Reserve Activity Plan 2013-2018* is illustrated in Figure 1. The Reserve is zoned as Recreation under the *Clarence Planning Scheme 2007* (Clarence City Council 2011).

The Reserve is predominantly comprised of native bushland. There are 14 main Council managed entrances to the Reserve (E1-13 and the Dr Winfred Curtis Entrance; refer Figure 1), and the Reserve's track network is comprised of several managed service roads and fire trails, as well as a number of foot and mountain bike tracks. Several of these tracks form part of the Charles Darwin Trail which traverses the Reserve from entrance E6 to the Dr Winifred Curtis Entrance. There are two concrete water reservoirs and a communications tower located in the north of the Reserve, while recreational infrastructure is limited to play equipment at Reserve entrance E12 off Waverley Street.

4 SITE VALUES

4.1 Native flora

Typical native vegetation in the Reserve is illustrated in Figures 2-3. Six native vegetation communities occur throughout the Reserve on three geological substrates (AVK Environmental Management 2011a). Three of these communities are of high conservation significance, as summarised at Appendix 1.

The Reserve is renowned for its prolific wildflower displays in spring, and is valued by locals and visitors for its numerous orchid species. A flora species list was last compiled in 1999 (de Gryse 1999), which identified 190 native species occurring in the Reserve. Several of these are of high conservation value, including the tailed spider orchid (*Caladenia caudata*; refer Figure 4), spur velleia (*Velleia paradoxa*) and spreading gnawel (*Scleranthus fasciculatus*). Further information on these threatened species is provided at Appendix 1.

4.2 Native fauna

The native vegetation within the Reserve provides habitat for a range of native animal and bird species, including mammals, birds, reptiles and invertebrates. The endangered swift parrot and eastern barred bandicoot have both been observed in the Reserve (refer Appendix 1). Local residents have reported an increase in numbers of potoroos, wallabies, bandicoots and bettongs in recent years. Birds are prevalent, including honeyeaters, pardalotes, rosellas and thornbills, and BirdLife Tasmania has recently compiled a comprehensive list of birds known to occur in the Reserve (refer Appendix 2). Butterflies are commonly observed, and insects are important pollinators of the Reserve's wildflowers.

The Reserve contains a range of habitats which are important for supporting a diversity of native wildlife. A variety of canopy layers, dead trees and hollow logs



Figure 1: Area covered by the *Waverley Flora Park Reserve Activity Plan 2013-2018*, including Reserve entrances E1-13 and Dr Winifred Curtis Entrance (aerial photograph provided by Clarence City Council).



Figure 2: View of western part of the Reserve showing several vegetation communities



Figure 3: Typical grassland vegetation in the Reserve.

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Figure 4: The threatened tailed spider orchid (Caladenia caudata) which is found in the Reserve.

provide nesting and foraging habitat for birds and mammals. Fallen timber and leaf litter provide important habitat for reptiles and invertebrates, which in turn provide a food source for larger animals.

The presence of wildlife in the Reserve is highly valued by local residents, and ongoing management of a diversity of habitats has been identified as an important management issue.

4.3 Cultural heritage

4.3.1 Aboriginal heritage

No important Aboriginal heritage sites have been previously recorded within the Reserve, although an isolated artefact has been recorded (de Gryse 1990 & 1999). However there are a number of Aboriginal heritage sites in the area, particularly along the nearby Derwent foreshore, and both de Gryse (1999) and Dean (1997) conclude that it is likely that the Reserve was traversed by the Mumirimina band of the Oyster Bay tribe.

Under the Tasmanian Aboriginal Relics Act 1975 (the Aboriginal Relics Act), it is an offence to 'destroy, damage, disfigure, conceal, uncover, expose, excavate or otherwise interfere with a relic' unless a permit has been granted. It is therefore important to ensure that no artefacts or other cultural material are exposed or disturbed without a permit during Reserve management activities. Any artefacts that are inadvertently uncovered should be immediately reported to Aboriginal

Heritage Tasmania and an Aboriginal Heritage Officer engaged to assess the area prior to any further on ground work being undertaken.

4.3.2 Historic heritage

A sandstone quarry site (refer Figure 5) is located south east of Reserve entrance E1. The Kangaroo Point sandstone quarried from this site over a period of approximately 40 years is associated with several nineteenth century Hobart buildings. Dean (1997) provides a detailed history of this quarry.

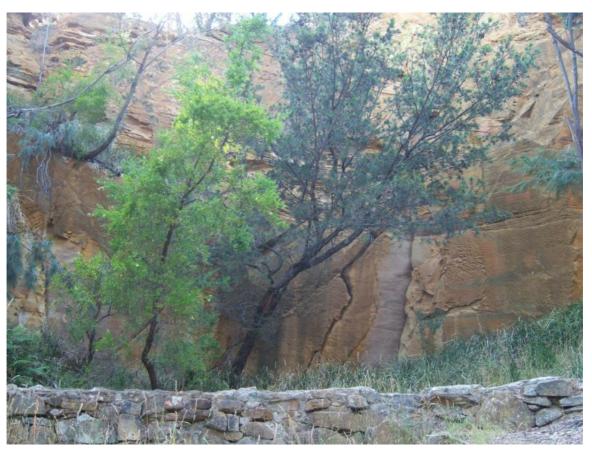


Figure 5: Historical sandstone quarry in the Reserve.

De Gryse (1990) notes that the land below the quarry was used as a rifle range by the Bellerive Rifle Club until the mid 1950s, with a miniature rifle range being established near Reserve entrance E1 at the end of Quarry Road (Phil Watson, Clarence City Council, pers. comm. 2013). There is no longer any significant evidence of the rifle range, although the area remains quite disturbed.

In 1918, the Bellerive Rifle Club planted the Bellerive Soldiers' Avenue in honour of 23 members of the club who served during World War 1. The start of the Avenue is believed to have been just outside the Reserve, near the junction of Quarry Road and Cambridge Road (Phil Watson, Clarence City Council, pers. comm. 2013). Historical details of the planting ceremony are provided at Appendix 3.

4.4 Recreational values

The Reserve is currently used for a range of recreational activities by local

residents and visitors. These include walking, jogging, mountain biking, dog exercise, orienteering and adventure activities. A designated downhill mountain bike track is located in the east of the Reserve. The Reserve is currently a designated off-lead dog exercise area under Council's Dog Management Policy, although dogs must remain under effective control.

4.5 Education values

The Reserve has been used as an outdoor 'classroom' for botanical studies for several decades. Dr Winfred Curtis, a renowned Tasmanian botanist after whom the entrance off Mercedes Place is named, used the Reserve for botanical research and education for many years and it continues to be used for botanical studies and observation today.

There is a long history of community commitment and enthusiasm for caring for the Reserve through the Waverley Flora Park Landcare Group, which is one of the oldest Landcare groups in Australia having been established for more than 20 years. The activities of this group provide an opportunity to share knowledge and promote community education of the Reserve's natural values and potential threats to these. The group is currently active and seeking new membership and support across a range of activities, including working bees, information sharing and monitoring activities.²

A small subset of the group has been focused on micro weeding within the Reserve. This highly specialised technique (which is discussed in further detail in Section 6.5) requires specific skills which the group is willing to share through a mentoring-type program.

4.6 Landscape setting and connectivity

Connectivity between areas of bushland provides an important ecological link for flora and fauna to enable gene flow between populations and allow animals to move across the landscape for foraging, nesting and breeding. While the Reserve is separated from the other bushland areas by residential properties and the South Arm Highway, its close proximity to the Knopwood Hill State Recreation Area provides an important connection for the movement of flora and fauna.

The close proximity of the Reserve to the Meehan Range State Recreation Area and Rosny-Montagu Bay Coastal Reserve also maintains an important visual landscape connection of bushland areas from the foreshore to ridges on Hobart's eastern shore.

This landscape setting and connectivity is important for the long term viability of Clarence's bushland areas and ongoing visual amenity in the municipality. It is important that these linkages be preserved and strengthened though strategic land use planning.

² Details about the Waverley Flora Park Landcare Group's activities can be obtained by emailing hawes717@gmail.com

5 STAKEHOLDER CONSULTATION

A public meeting and community 'walk and talk' session was facilitated by Council and Tasflora on 31 October 2012. The purpose of the session was to seek input from local residents, the Waverley Flora Park Landcare Group and other relevant stakeholders on values and management issues associated with the Reserve. A survey seeking comments on the *Waverley Flora Park Reserve Activity Plan 2013-2018* was also provided to identified stakeholders. A summary of issues raised during this initial stakeholder consultation is provided at Appendix 4.

The draft Waverley Flora Park Reserve Activity Plan 2013-18 was released for community consultation in March – April 2013. A Waverley Flora Park Report Card was developed as a key tool in encouraging stakeholder feedback on the draft plan and was mailed out to residents and other interested stakeholders. Five submissions on the draft plan were received during the consultation period.

Where possible, all relevant community feedback has been considered in the development of this plan. However some issues identified during the consultation process are beyond the scope of the plan or pertain to management issues outside the Reserve. These issues have been noted by Council and will be addressed through other processes where feasible.

6 WEED MANAGEMENT

6.1 Weed species present

Environmental weeds occur throughout the Reserve and are a key management issue affecting its natural values. While much primary weed control work has been undertaken by the Waverley Flora Park Landcare Group and contractors to control large weed infestations, follow-up maintenance activities will be required for many years.

A list of environmental weed species occurring in the Reserve, including their status and recommended control methods, is provided at Appendix 5.³ To assist with identification, a picture of each weed species is also provided. Several weed species found in the Reserve are classified as declared weeds under the Tasmanian *Weed Management Act 1999* (the Weed Management Act) and/or Weeds of National Significance (WONS). Where possible, these weeds will be targeted as a priority to prevent their further spread. The distribution of declared and other environmental weed species is illustrated in Appendices 6-7.

6.2 Recommendations for primary weed control work

Primary weed control work within the Reserve should focus on declared weeds (to fulfil Council's obligations under the Weed Management Act) and other environmental weeds whose distribution is currently limited. It is envisaged that declared weeds could be eradicated from the Reserve if sufficient resources are available to implement an ongoing maintenance program over several years.

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³ A general overview of weed control techniques is available at: http://www.nrmsouth.org.au/uploaded/287/15130842 66weedsbookletfinalweb.pdf

Other non-priority weeds can be controlled at the same time as priority weeds if resources permit.

Initial priority should be given to controlling gorse, pampas grass and Spanish heath due to their presently limited distribution in the Reserve. Control of boneseed and canary broom will require ongoing maintenance over several years due to the likely significant soil seed bank of these species, and the aim should be to control isolated populations of these weeds first before targeting larger infestations.

Weed control undertaken by Council workers and contractors should focus on controlling weed infestations that are beyond the capabilities of the Waverley Flora Park Landcare Group, particularly adjacent to the South Arm Highway.

Recommendation: Priority should be given to controlling gorse, pampas grass, Spanish heath and isolated populations of boneseed and canary broom.

In addition to the above weed control priorities, the Reserve's Bushfire Management Plan (AVK Environmental Management 2011a) notes that weed control activities should be integrated with planned burning activities in the Reserve. Management Procedure 8 (MP8) in Council's bushfire Best Practice Management Guidelines (AVK Environmental Management 2011b) recommends that:

- mature woody weeds in areas to be burnt should be controlled so that rootstocks are dead prior to burning;
- any herbicide treatment (including spot spraying or cut and paste) of weeds in areas to be burnt should be completed at least three months prior to planned burns to ensure that death and desiccation of plants has occurred; and
- following burning, weed seedlings and weeds regenerating from rootstocks should be treated promptly to ensure native seedlings are not outcompeted.

Recommendation: Weed control should be undertaken prior to and following planned burns.

6.3 Non-priority weed species

Following control of priority weed species, the focus should be on controlling other environmental weeds occurring in the Reserve. These include sweet briar, sweet pittosporum, tree lucerne, bluebell creeper, cotoneaster, periwinkle, radiata pines and mainland acacias. Recommended control techniques for these species are provided at Appendix 5. Where possible, these non-priority weeds should be controlled at the same time as priority weeds if working in a designated area (eg in a specified area prior to burning) or if spraying with a herbicide that can be used on several species (eg spot spraying of sweet briar can be undertaken simultaneously with blackberry control).

Recommendation: Control of declared and other environmental weeds should be undertaken simultaneously where possible.

Ongoing follow-up sweeps to control many species (eg sweet pittosporum, tree lucerne) will be required due to the likely soil seed bank of these species.

Broadleaf weeds and exotic grasses are not considered a priority for control except in revegetation areas and where their removal is desirable as part of an ongoing general Reserve maintenance program (eg along track edges).

Recommendation: Control of exotic grasses and broadleaf weeds is only required in revegetation areas and where necessary as part of a general Reserve maintenance program.

6.4 Maintenance of weed control work

Regeneration of weeds in the Reserve is likely to continue for many years due to the existing seed bank in the soil and the fact that some weed species have an inherent ability to resprout following primary control. Planned burns are also likely to encourage germination of new weeds. Weed control activities will not be successful unless a commitment is made to undertaking ongoing follow-up maintenance activities.

Maintenance of primary weed control work should be undertaken annually, preferably in spring and summer when plants are least likely to be dormant. This can be achieved by performing an annual sweep to remove all new germinants of previously targeted weeds and undertake follow-up control on any plants that may have resprouted. Ongoing annual follow-up will be required until the soil seed bank is exhausted.

Recommendation: An annual sweep and follow-up control of all previously targeted weeds should be undertaken.

GPS mapping of all environmental weeds occurring within the Reserve has been undertaken during the development of this plan. In order to monitor the success of the weed control program, follow-up GPS mapping of weeds should be undertaken after five years to assess progress and facilitate planning of future weed control activities. As well, GPS mapping by contractors and volunteers as they control weeds should be encouraged, with data to be provided to Council to enable its database to be updated.

Recommendation: Follow-up GPS mapping of all weeds in the Reserve should be undertaken after five years to monitor progress and inform future weed control priorities.

6.5 Micro weeding

Micro weeding involves the removal of small exotic broadleaf weeds and grasses from small areas (eg 10x10m transects) in order to protect delicate populations of small native plants such as herbs. This technique has previously been used in grassland areas of the Reserve to enhance populations of the threatened species *Velleia paradoxa* and should continue to be implemented carefully in these areas, with micro weeding to only be undertaken by small groups of people under the supervision of experienced Landcare personnel or botanists.

7 REGENERATION AND REVEGETATION

7.1 Regeneration

Where possible, natural regeneration should be encouraged within the Reserve as the most cost effective and natural means of maintaining the structure of vegetation communities, enhancing species diversity and restoring the Reserve's original vegetation in areas where disturbance has occurred.

Council has established four permanent vegetation monitoring plots within the Reserve to monitor annual regrowth following prescribed burns undertaken in late 2012 and early 2013. ⁴ Additional vegetation monitoring plots should be established by Council as new areas are burned under the annual prescribed burning program. Each plot should be assessed annually for regeneration growth and the results analysed to inform ongoing adaptive fire and vegetation management activities.

Recommendation: Vegetation monitoring plots should be established prior to undertaking prescribed burns and monitored annually.

In recent years, Council has been working towards maintaining the open grassland communities at the western end of the Reserve through a planned burning program. In some instances this has resulted in dense sheoak and silver wattle regrowth, and selective clearing of large areas of regrowth has been undertaken to prevent these shrubs from outcompeting grassland species. While the principle behind this activity is sound, it is noted that in many areas sheoak and wattle stems have been cut significantly above ground level and many are reshooting. This is visually unappealing, creates a significant trip hazard and will require ongoing follow-up to prevent prolific regrowth of cut stems. It is recommended that:

- where possible, previously cut sheoak and wattle stems should be recut at ground level and painted with herbicide to prevent reshooting;
- fire management personnel should be trained to cut plants to ground level and immediately paint with herbicide when undertaking future shrub regrowth control activities; and
- that the procedure for manual control of shrub regrowth recommended in the Reserve's Bushfire Management Plan should be updated to specify that stumps should be cut at ground level.

Recommendation: When undertaking manual control of shrub regrowth, stems should be cut at ground level and stems immediately painted with herbicide.

As discussed in Section 4.1, a full flora species list for the Reserve was last compiled in 1999 (de Gryse 1999). Fire activity in the Reserve (both planned and unplanned) has significantly altered the vegetation composition in some areas,

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⁴ The permanent vegetation monitoring lots are located within fire management blocks 10, 19 and 28, as defined in the Reserve's Bushfire Management Plan (AVK Environmental Management 2011a).

including the distribution of some populations of threatened species. It would therefore be desirable to work with the University of Tasmania or other suitably qualified person(s) to:

- undertake an in-depth botanical survey of the current species composition of the Reserve;
- update mapped locations of threatened species on DPIPWE's Natural Values Atlas; and
- use vegetation transects in conjunction with Council's planned annual aerial photography program to undertake vegetation composition and condition assessments on an annual basis.

Recommendation: An updated flora survey and annual vegetation composition and condition assessments should be undertaken to further inform on ground management activities.

7.2 Revegetation activities

The primary purpose of undertaking new revegetation activities in the Reserve is to preserve and enhance existing areas of remnant native vegetation, provide habitat for native birds and animals, and improve the visual amenity for users of the Reserve. However, revegetation activities are resource intensive, and may interrupt the natural regeneration process already occurring within the Reserve.

Large scale revegetation activities are not considered necessary in the Reserve as primary weed control activities (outlined in Section 6) are unlikely to create significant bare areas. However, native landscaping to create a natural looking environment is recommended to improve the visual amenity of several entrances (refer Section 8). Where possible, plants should be grown from the seed or cuttings of plants local to the area to ensure local variants of plants are planted.⁵

Recommendation: Revegetation activities should be limited to native landscaping at Reserve entrances.

Revegetation and landscaping activities will not be successful unless a commitment is made to undertake follow-up maintenance activities. In particular, it is important to ensure that sufficient resources are available for ongoing maintenance (eg weeding, watering) before establishing new sites.

Recommendation: New revegetation and landscaping activities should not be committed to unless sufficient resources are available to undertake ongoing regular maintenance of newly planted areas.

8 RESERVE ENTRANCES

There are 14 main entrances to the Reserve managed by Council. Only one of

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⁵ An overview of best practice revegetation and regeneration techniques has been produced by Greening Australia Victoria (2003) and is available at http://live.greeningaustralia.org.au/nativevegetation/pages/pdf/Authors%20C/13 Corr.pdf

these entrances has a formal name – the Dr Winfred Curtis Entrance, off Mercedes Place, which is named after a renowned Tasmanian botanist who used the Reserve for botanical research and education. For the purposes of this plan, the other entrances are referred to as Reserve entrances E1-13, as illustrated in Figure 1.

A survey of the use of several entrances (Dr Winfred Curtis Entrance, E1, E2, E6, E7, E8 and E12) was undertaken in late 2012 and early 2013 to obtain an understanding of the relative use of each entrance. Each entrance was surveyed over a period of seven days using a light beam counter. The survey found that all entrances are used regularly, with E1 (off Quarry Road) being used the most and E6 (Alford Street) and E7 (Ninabah Street) used the least in a seven day period (refer Appendix 8 for full survey results). The results of this survey can be used to help prioritise entrance upgrades and upgrades to the track network.

Key management issues identified for the Reserve's entrance points are summarised in Table 1. All main entrances are located adjacent to public streets and creation of formal parking areas is not considered necessary. No closure of existing entrances is proposed within the next five years.

Recommendation: Reserve entrances should be improved by enhancing signage, installing strategic fencing to prevent unauthorised access by vehicles and trail bikes, and undertaking weed control and native landscaping activities to improve visual amenity.

Table 1: Recommended management activities to be undertaken at Reserve entrances.

Issue	Description	Recommendation		
Signage	Low key, clear signage is needed at each main Reserve entrance, including:	Implement Waverley Flora Park Signage Plan (refer Section 10 and Appendix 9), including:		
	 maps of the track network and Charles Darwin Trail (at E1, E6 & Dr Winifred Curtis Entrance) information on dog walking no trail bike signs 	 Large Reserve information signs to be installed or replaced (as needed) at major entrances to the Reserve (E1, E2, E7, E8, E12) Small signs to be installed at minor entrances (E3, E4, E5, E6, E9, E10, E11, E13) Visitor interpretation signage 		
		Replace old wooden sign at Dr Winifred Curtis entrance with interpretation and Landcare Group information Replace 'dog on lead' symbol to a 'dog off lead' symbol at Dr Winifred Curtis entrance		
		Develop identifying names for Reserve entrances E1 (eg "Lemena" = sheoak in Palawa kani), E2, E6 (eg Charles Darwin Entrance), E7, E8 & E12		

Issue	Description	Recommendation
Vehicle and trail bike	All entrances require gates, fencing and/or strategically	Install pedestrian-only metal gate adjacent to exiting boom gate at E1
access	placed boulders to prevent unauthorised access by vehicles and trail bikes	Install locked metal post-and-rail boom gates and pedestrian gates at E7 & E10
	verticles and trail bines	Repair fences next to gates at E5
		Install metal post-and-rail fence and/or large boulders from E1 along the length of Quarry Road
		Install boom gate and strategically placed boulders at E9 and at the informal entrance off Vadura Place
		Assess cost of moving the existing metal post-and-rail boom gate & pedestrian gate at E12 to replace the boom gate on Waverley Street and installing a metal post-and-rail fence where the Reserve meets Waverley Street
		Monitor whether any trail bike access is occurring via Dr Winifred Curtis entrance, E11 & E13
Pedestrian access	No formed pedestrian access through E11	Remove tree and create formed pedestrian access at E11
Visual amenity	Most entrances would benefit from landscaping activities and/or regular maintenance of long grass and weeds to improve their visual amenity	Enhance the Reserve's existing maintenance program to ensure regular weeding and slashing is undertaken at all Reserve entrances (refer Section 11) Develop a Waverley Street Entrance
		Landscape Plan (including seating, play equipment, landscaping, fencing, aboriginal interpretation and aboriginal 'snake wall' structure)
		Develop a thematic landscaped entrance design for E1, E2 & E8
		Undertake landscaping with native plants at E6 & E7, as per concept landscape plans detailed in Appendices 10 & 11

9 TRACKS AND TRAILS

The Reserve's track network is comprised of several managed service roads and fire trails, as well as a number of informal foot and mountain bike tracks which are maintained through regular usage. Some of these tracks form part of the Charles Darwin Trail. Existing tracks are utilised by a range of users, including fire brigade vehicles, service vehicles, mountain bikes and pedestrians. Most are used regularly by locals and visitors.

Key management issues identified with tracks and trails in the park are summarised in Table 2. Several vehicle trails are considered necessary for

Table 2: Track management issues identified within the Reserve.

Issue	Description	Recommendation
Track condition	Several vehicle trails necessary for bushfire management do not meet their assigned vehicle usage class and are also causing issues for pedestrian access (eg drainage problems, erosion, surface damage)	Implement track upgrades and maintenance activities as per Table 8 of the Reserve's Bushfire Management Plan
	Track linkages from some entrances to the main track network require upgrading to better facilitate recreational access	Develop a five year track upgrade program to maintain linkages to the main trail network from E3, E4 and E7- E11 (in conjunction with upgrades planned under the Bushfire Management Plan)
	Drainage issues and erosion of Charles Darwin Trail adjacent to South Arm Highway near E6	Address drainage issues and resurface track
	Trees overgrowing Charles Darwin Trail adjacent to South Arm Highway near E6	Remove trees which are overgrowing track
	Track widening activities have left piles of dirt and large rocks along track edges (eg fire trail W2 between the reservoir and Reserve entrance E10)	Relocate large loose rocks on track edges to elsewhere in the Reserve (eg use for landscaping entrances) Educate track maintenance workers
	Leakage from the Mornington Hill reservoir is causing poor drainage and erosion issues on tracks	Liaise with Southern Water to address reservoir leakage
Track closures	A minor track heading east from the top of Mornington Hill (located between fire vegetation management units 4 & 26) is very steep	Close track using dead wood/brush as it is no longer required as a fire break
Signage	There is no directional signage at track junctions Directional signs are missing along the Charles Darwin Trail	Implement Waverley Flora Park Signage Plan (refer Section 10 and Appendix 9) which identifies proposed location of directional signage

bushfire management and require maintenance and upgrades (eg installing appropriate drainage measures, repairing track surfaces, repairing erosion damage) to meet their assigned vehicle usage class. These are identified in Table 8 of the Reserve's Bushfire Management Plan (AVK Environmental Management 2011a). Many of these upgrades will also facilitate improved pedestrian access by addressing drainage and surface stability issues that have been reported along several tracks in the Reserve.

Recommendation: Track upgrades and maintenance activities recommended in the Reserve's Bushfire Management Plan should be implemented as a priority.

10 INFRASTRUCTURE

There is currently limited community infrastructure within the Reserve, and the Reserve's natural environment would be enhanced through minimising additional infrastructure installation.

While it is desirable to limit the number of large signs in the Reserve, some signage is considered necessary to help direct visitors who are unfamiliar with the Reserve. A Waverley Flora Park Signage Plan has been developed by Council (refer Appendix 9), which recommends the installation of a number of entrance, directional and interpretation signs to facilitate visitor access and interpretation in the Reserve.

Recommendation: The Waverley Flora Park Signage Plan should be implemented to facilitate visitor access and interpretation.

Trail bike and unauthorised vehicle access is an ongoing problem in the Reserve and was a key issue identified during the community consultation process. Section 8 details enhancements planned at the Reserve's entrances aimed at preventing access through these routes. However, trail bikes have also been observed accessing the Reserve through gaps in fences at various locations around the Reserve's perimeter. An assessment should be undertaken of the Reserve's entre perimeter fencing (including private fencing) and a costed and prioritised fence upgrade program developed. As well, engagement with private landowners should be undertaken where access is suspected via private land.

Recommendation: A costed and prioritised fence upgrade program should be developed to prevent access by trail bikes and unauthorised vehicles.

The Reserve is a popular destination for dog walkers, and installation of dog waste bins and bag dispensers is recommended at all main entrances to encourage responsible behaviour by dog owners. All dog waste bins in the Reserve should be regularly maintained.

Recommendation: Dog waste bag dispensers and bins should be installed at each main entrance to the Reserve.

The protective fence above the quarry is in disrepair, with wires missing and no signage indicating these is a steep drop below. This should be repaired or replaced as a priority to ensure safety of visitors to the Reserve who are unaware of the quarry's presence.

Recommendation: The fence above the quarry should be repaired or replaced and a small safety warning sign erected.

There is currently limited seating within the Reserve for recreational walkers using the track network. It is recommended that new outdoor seats be installed at

strategic positions within the Reserve to encourage contemplation of the views and natural environment. Depending on the level of funding available, the following locations are suggested:

- the lookout to the north of the quarry;
- the main track junction south of the quarry where the track from Reserve entrance E1 meets the Charles Darwin Trail;
- along the main trail from the Dr Winifred Curtis entrance near the middle of the grasslands (where there is a view of Mt Wellington and Hobart);
- Dr Winifred Curtis Entrance (to replace the existing seat made from a fallen tree); and
- near the play equipment at Reserve entrance E12 off Waverley Street.

Where possible seats should be constructed from stone from the Reserve (as has been done at the lookout above the quarry along the Charles Darwin Trail) to create a natural look and deter vandalism. Alternatively, metal seats set into a concrete foundation and coloured to blend into the environment (ie seat painted green, natural looking material for the foundation surface such as rock, shell aggregate or coloured concrete) could be used.

Recommendation: New outdoor seats should be installed at several locations in the Reserve.

The playground facilities off Waverley Street at Reserve entrance E12 are old and limited, consisting only of a swing and a slide. However, community feedback indicates that this play equipment and the open area surrounding it is used by families, play groups, schools and the Landcare group. Enhancement of the existing play equipment should be considered as part of the proposed Waverley Street Entrance Landscape Plan (as detailed in Table 1).

Recommendation: Enhancement of the play equipment at Reserve entrance E12 should be considered as part of the proposed Waverley Street Entrance Landscape Plan.

Any installation of new infrastructure will be subject to funding. With this in mind, no additional infrastructure beyond that discussed above is recommended within the next five years unless significant funding becomes available. A further review of the infrastructure requirements of the Reserve should be undertaken in 2018.

Recommendation: A review of the infrastructure requirements of the Reserve should be undertaken in 2018.

11 OTHER MANAGEMENT ACTIVITIES

11.1 Reserve maintenance

The Reserve's Bushfire Management Plan contains recommendations for ongoing maintenance activities to be undertaken in the Reserve (eg vegetation management, monitoring of track conditions etc). In additional to these recommendations, the Reserve's existing maintenance program should be

enhanced to include regular spot spraying and slashing of track edges at all Reserve entrances to maintain the track width and visual amenity.

Recommendation: The existing Reserve maintenance program should be enhanced to incorporate ongoing maintenance activities recommended by the Reserve's Fire Management Plan and to ensure Reserve entrances are regularly maintained.

A variety of canopy layers, dead trees, hollow logs, fallen timber and leaf litter are required to provide important habitat for wildlife, including mammals, birds, reptiles and invertebrates. Leaf litter and dead wood are often viewed as a fire risk in bushland reserves located in urban areas. However, it is important that fauna habitat requirements are considered when planning future bushfire management activities in the Reserve.

Recommendation: Fauna habitat requirements should be considered when planning bushfire management activities in the Reserve.

Education of Council staff undertaking maintenance activities (including bushfire management measures) within the Reserve would be desirable to ensure that all work is undertaken in a manner that minimises inadvertent damage to threatened flora species, particularly along track edges.

11.2 Habitat monitoring

An increase in wildlife in the Reserve has been observed in recent years, and it is expected that this will continue with appropriate vegetation management practices and effective control of cats and dogs by local residents and dog walkers. Fauna surveys (including mammal, bird, reptile and invertebrate surveys) and habitat assessments to confirm the species present in the Reserve are recommended to be undertaken now and in five years (ie 2013 and 2018) as a basis for monitoring the success of management activities. Bird surveys should be undertaken in conjunction with BirdLife Tasmania using standard BirdLife Australia monitoring techniques.

Recommendation: Fauna and bird surveys of the Reserve should be undertaken in 2013 and 2018 to further inform on ground management activities.

11.3 Soldiers' Memorial Park Master Plan

In recognition of the Bellerive Soldiers' Avenue (refer Section 4.3.2), Council is proposing to create a Soldiers' Memorial Park incorporating an Avenue of Honour at the approximate location of the former miniature rifle range in the Reserve (currently degraded land at 60 Quarry Road). It is recommended that a Master Plan for the Soldiers' Memorial Park be developed and implemented based on historic research and consultation with relevant community groups and individuals. Elements of the project could include replanting of the avenue, dedication of trees to particular soldiers as well as installation of passive recreation amenities such as seats and interpretation signage.

Recommendation: A Master Plan should be developed and implemented for the proposed Soldiers' Memorial Park and Avenue of Honour at 60 Quarry Road, based on historical research and extensive community consultation.

11.4 Quarry

There is a low stone wall constructed at the base of the quarry (refer Figure 5) which was repaired using cement several years ago. In order to enhance the cultural heritage of this site, the cement in this wall could be chipped out and the rocks relaid to create a dry stone wall.

Recommendation: The stone wall at the base of the quarry should be rebuilt as a dry stone wall.

11.5 Mountain bike park

A bike jump area previously endorsed by Council exists in the south eastern part of the Reserve. However, given the close proximity of the Clarence Mountain Bike Park in Mornington, the value of this area to mountain bikers is currently unclear. An assessment should be made of the area's current and potential future usage to determine whether the area should be upgraded to a national standard or closed.

Recommendation: An assessment of the mountain bike park should be made to determine whether it should be upgraded or closed.

11.6 Dog and cat management

The Reserve is currently a designated off-lead exercise area (with dogs to remain under effective control) under Council's Dog Management Policy. While community consultation has indicated a general desire for this arrangement to continue, some concerns have been raised regarding unleashed and uncontrolled dogs chasing wildlife in the Reserve and harassing other users. While additional signage (refer Signage Plan) and community education (refer Section 12) are proposed, the next review of Council's Dog Management Policy should include consideration of the dog management issues raised during this consultation process.

Recommendation: The next review of Council's Dog Management Policy should include consideration of the dog management issues raised in the Waverley Flora Park Reserve Activity Plan 2013-2018 community consultation process

Council promotes responsible cat ownership, and will continue to encourage local residents to meet their obligations under the *Cat Management Act 2009* through having their cats microchipped, desexed and under effective control (eg indoors at night).

12 COMMUNITY PARTICIPATION AND AWARENESS

Community participation and awareness has an important role to play in protecting the natural, cultural and recreational values of the Reserve. In particular,

education of residents living adjacent to the Reserve is desirable to foster behavioural change and encourage community ownership and appreciation of the Reserve's values.

Recommendation: Community education should be undertaken to facilitate behavioural change and encourage ownership and appreciation of the values of the Reserve.

Key issues requiring community awareness are summarised in Table 3. A letterbox drop to adjacent landowners with information on each of these issues is recommended as a first step to achieving community awareness and understanding of these issues. However, engagement with individual property owners may be required in instances of ongoing inappropriate activity (eg to manage encroachment). Formal Council enforcement procedures will be instigated in instances of illegal activity or persistent inappropriate activity within the Reserve to ensure that its values are protected.

Table 3: Management issues requiring community education and awareness within the Reserve.

Issue	Description
Garden waste dumping	Dumping of garden waste in the Reserve encourages the spread of weeds and is visually unattractive for all users.
Removal of native vegetation	Removal of native vegetation in the Reserve (eg to improve views, reduce bushfire risk, collect fire wood) is illegal. It encourages the establishment of weeds and reduces species diversity and animal habitat. Seed collection should only be undertaken with Council approval.
Encroachment	Some properties adjacent to the Reserve have 'adopted' the area in front of their property (eg by extending gardens into the Reserve)
Environmental weeds	Weeds in adjacent gardens pose a threat to existing native vegetation within the Reserve.
Inappropriate activities	Vandalism, trail bike riding, rubbish dumping, wood cutting and fire arms are prohibited in the Reserve. Instances of these activities should be reported to Council.
Bushfire management	Local residents should take action to reduce the bushfire risk of the vegetation on their properties
Wildlife	Trapping and relocation of native wildlife is not permitted.
Cats and dogs	Cats and dogs can kill native wildlife. Cats should be microchipped, desexed and kept indoors at night. Dogs should remain under effective control at all times.

Recommendation: Formal Council enforcement procedures will be instigated in instances of illegal or persistent inappropriate activity within the Reserve.

Interpretation signs provide an important opportunity to display information on the Reserve's natural values, cultural heritage and the impact inappropriate activities

can have on these. As recommended in the Waverley Flora Park Signage Plan (refer Appendix 9), interpretation signs are proposed at the following locations:

- Dr Winifred Curtis entrance flora and fauna values, Charles Darwin trail map, short biography of Dr Winifred Curtis, Waverley Flora Park Landcare Group activities;⁶
- E1 cultural heritage, including quarry location and history, rifle range,
 Soldiers Avenue;
- E6 brief description and map showing the Charles Darwin Trail;
- E12 Aboriginal interpretation;
- base of quarry small interpretation sign; and
- top of quarry new Charles Darwin Trail interpretation sign (to replace one that has been removed).

Another opportunity to promote the Reserve to locals and visitors is through the establishment of a dedicated Waverley Flora Park page on Council's website.

Recommendation: A dedicated Waverley Flora Park page should be established on Council's website

Much of the maintenance of the Reserve, particularly weed control activities, has to date been undertaken on a voluntary basis by members of the community through the Waverley Flora Park Landcare Group. The installation of interpretation signs will provide the opportunity to promote the activities of the group. As well, individuals wanting to become involved in management activities outside of this group should be encouraged to contact Council directly.

13 IMPLEMENTATION PLAN

A map illustrating the location of on ground management activities recommended within the Reserve is provided at Figure 6. This is based on the key recommendations contained within this plan, which are summarised in detail at Appendix 12.

Based on these recommendations, an Implementation Plan with associated performance measures has been developed and is provided at Table 4. It identifies three stages of management activities to be undertaken within the Reserve:

- Priority 1 immediate (6-12 months) management activities.
- Priority 2 medium term (1-3 years) management priorities.
- Priority 3 long term (5 years) management priorities.

The intent of the Implementation Plan is to provide a guide to outcomes that could be achieved within the Reserve by Clarence City Council, contractors and/or volunteer groups within the period 2013-2018 if sufficient resources are available.

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⁶ An example of the recommended standard of interpretation sign is located at the main entrance to Cremorne Beach, where the Pipe Clay Lagoon Coastcare Group has displayed information about the Reserve and their Group's current and planned activities.

While it would be desirable to undertake all the recommended activities, it is acknowledged that this may not be possible due to resource constraints, and implementation will ultimately be guided by what is achievable with resources as they become available. Federal, State and Local Government grants programs may provide an opportunity to obtain resources to implement many of the recommendations contained within this report.

A review of progress against all performance measures should be undertaken annually during the period 2013-2018 to help prioritise available resources.

Recommendation: Progress against all performance measures identified in the Implementation Plan should be reviewed annually.

14 FUTURE PRIORITIES

A review of the *Waverley Flora Park Reserve Activity Plan* should be undertaken in 2018. The purpose of this review should be to:

- assess progress towards achieving the objectives of the Waverley Flora Park Reserve Activity Plan 2013-2018;
- assess progress against all performance measures;
- analyse all completed flora surveys, vegetation composition assessments and fauna surveys to determine trends and implications for ongoing vegetation management; and
- determine ongoing management priorities for the Reserve for the next five years.

Recommendation: The Waverley Flora Park Reserve Activity Plan 2013-2018 should be reviewed in 2018 to assess progress and determine ongoing management priorities for the Reserve.

Reserve Activity Plan 2013-2018

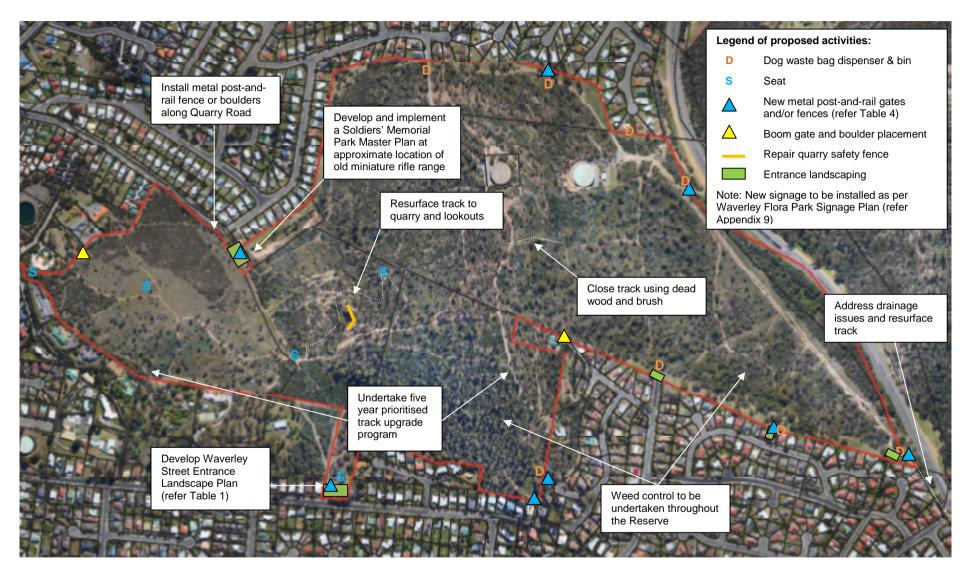


Figure 6: Overview of key proposed on ground management activities (base image provided by Clarence City Council)

Table 4: Implementation Plan for undertaking recommended management activities within the Reserve.

Priority	Action	Seasonal timing	Performance measure	Responsibility	Estimated funding ⁷
Weed co	ontrol				
1	Undertake primary control of blackberry, gorse, pampas grass and Spanish heath	Spring – summer for spot spraying; all year round for other techniques	Primary control of blackberry, gorse, pampas grass and Spanish heath completed	Council, contractor and/or volunteer groups	
1,2&3	Undertake primary control of boneseed and canary broom	Spring – summer for spot spraying; all year round for other techniques	Primary control of boneseed and canary broom completed	Council, contractor and/or volunteer groups	}
1,2&3	Control other environmental weeds identified in Appendix 5	Spring – summer for spot spraying; all year round for other techniques	Primary control of targeted environmental weeds completed	Council, contractor and/or volunteer groups	\$5,000 per annum
1,2&3	Control environmental weeds before and after planned burns	Spring – summer for spot spraying; all year round for other techniques	Areas of planned burns remain weed free following burning	Council, contractor and/or volunteer groups	
2&3	Undertake annual sweep and follow-up control of all targeted weeds	Ongoing on an annual basis	All targeted weeds are eradicated from the Reserve	Council, contractor and/or volunteer groups	\$3,000 per annum
3	Undertake follow-up GPS mapping of all weeds	Spring - summer	Weed maps and Council database are updated within five years	Council, contractor and/or volunteer groups	\$1,000

⁷ Funding estimate is based on total costs required to undertake all recommended activities over the period 2012-13 to 2017-18.

Priority	Action	Seasonal timing	Performance measure	Responsibility	Estimated funding ⁷
Regener	ation and revegetation				
1,2,3	Formalise vegetation monitoring plots prior to undertaking planned burns	N/A	Vegetation monitoring plots established and photos taken on an annual basis	Council	N/A
Reserve	entrances				
1	Develop identifying names for E1, E2, E6, E7, E8 & E12	N/A	Identifying names developed for E1, E2, E6, E7, E8 & E12	Council	N/A
1	Develop Waverley Street Entrance Landscape Plan (including enhanced play equipment, seating, landscaping, aboriginal interpretation and 'snake wall')	N/A	Community consultation completed Final Waverley Street Entrance Plan developed	Council	N/A
1	Develop thematic design and concept landscape plans for Reserve entrances E1, E2 and E8	N/A	Concept landscape designs completed for E1, E2 & E8	Council	N/A
1	Implement Waverley Flora Park Signage Plan	N/A	Signage Plan implemented	Council	TBA
1	Undertake native landscaping at Reserve entrances E6 & E7 (as per Appendices 10 & 11)	Autumn - winter	Landscaping completed at E6 & E7	Council, contractor or volunteers	\$1,500 per entrance
2,3	Implement Waverley Street Entrance Landscape Plan (including enhanced play equipment, seating, landscaping, aboriginal interpretation and 'snake wall')	Undertake planting in Autumn/winter	Waverley Street Entrance Landscape Plan fully implemented	Council	\$30,000
2,3	Implement concept landscape plans at Reserve entrances E1, E2 and E8	N/A	Landscaping completed at E1, E2 & E8	Council	\$2,500 per entrance
1,2&3	Undertake regular maintenance of all landscaped sites	Ongoing	Maintenance of all existing landscaped sites undertaken within the last six months	Council, contractor and/or volunteers	\$1,500 per annum

Priority	Action	Seasonal timing	Performance measure	Responsibility	Estimated funding ⁷
1,2&3	Develop and implement five year budget and timetable for installing new metal post-and-rail gates and fences at entrances as detailed in Table 1	N/A	Budget and five year timetable developed Work program completed by end of 2017	Council	\$15,000 per annum
Tracks a	and trails				
1	Liaise with Southern Water to address reservoir leakage at Mornington Hill	N/A	No leakage from Mornington Hill reservoir	Council	N/A
1	Address drainage issues and resurface Charles Darwin Trail near E6	N/A	No erosion occurring on Charles Darwin Trail near E6	Council	\$1,500
1	Remove trees overgrowing Charles Darwin Trail near E6	N/A	No trees impeding pedestrian access on Charles Darwin Trail near E6	Council or contractor	\$600
2	Close track heading east from the top of Mornington Hill (located between fire vegetation management units 4 & 26)	N/A	Track closed and no pedestrian/bike usage observed	Council or contractor	N/A
2	Relocate large loose rocks beside fire trail W2 to elsewhere in the Reserve	N/A	Large loose rocks relocated from beside fire trail W2	Council	N/A
1,2&3	Develop and implement 5 year track upgrade program to maintain track linkages to main trail network from E3, E4 and E7-E11	N/A	5 year track upgrade program developed and implemented	Council	\$5,000 per annum
1,2 &3	Undertake track maintenance and upgrades as identified in the Reserve's Bushfire Management Plan	N/A	All tracks upgraded to standard specified in Bushfire Management Plan	Council or contractor	\$15,000
Infrastru	cture				
1	Install dog waste bag dispensers and bins at main Reserve entrances	N/A	Dog waste bag dispensers and bins installed at main Reserve entrances	Council or contractor	\$3,000
3	Develop a costed and prioritised perimeter fence upgrade program	N/A	Perimeter fence upgrade program developed/implemented	Council or contractor	\$5,000

Priority	Action	Seasonal timing	Performance measure	Responsibility	Estimated funding ⁷
3	Install seats at various location in the Reserve	N/A	Three new seats installed	Council or contractor	\$6,000
Other ma	anagement issues				
1,2&3	Enhance the existing Reserve maintenance schedule to incorporate	Ongoing	Reserve maintenance as recommended in the Reserve's Bushfire Management Plan	Council	N/A
	ongoing maintenance activities recommended by the Reserve's Fire Management Plan and to ensure entrances are regularly maintained		Reserve entrances have been maintained within the last three months		
1	Develop a master plan for a Soldiers' Memorial Park incorporating an Avenue of Honour based on historical research and extensive community consultation	N/A	Community consultation completed Soldiers' Memorial Park Master Plan developed	Council or contractor	\$10,000
1	Repair or replace the fence above the quarry	N/A	Fence above quarry repaired or replaced Safety sign erected	Council or contractor	\$2,000
2	Ensure the next review of Council's Dog Management Policy includes consideration of the dog management issues raised in the Waverley Flora Park Reserve Activity Plan 2013-2018 community consultation process	N/A	Dog management issues raised in the Waverley Flora Park Bay Reserve Activity Plan 2013-2018 community consultation process are considered in the next review of Council's Dog Management Policy	Council	N/A
2	Undertake assessment of the mountain bike park to determine whether it should be upgraded or closed	N/A	Mountain bike usage assessment complete	Contractor	\$2,000
3	Rebuild the stone wall at the base of the quarry as a dry stone wall	N/A	Dry stone wall completed	Council or contractor	\$1,500
2,3	Implement Soldiers' Memorial Park Master Plan (in stages)	N/A	Soldiers' Memorial Park completed	Council and/or contractor	\$20,000

Priority	Action	Seasonal timing	Performance measure	Responsibility	Estimated funding ⁷
1,2,3	Undertake surveys to update the flora and fauna record of the Reserve	To coincide with peak flowering periods / threatened bird nesting seasons	Flora survey completed in 2013 & 2018 Fauna surveys completed 2013 & 2018 Bird surveys completed in 2013 & 2018 Annual vegetation condition assessment using aerial imagery completed	Council, contractor and/or BirdLife Tasmania	\$12,000
Commu	nity participation and awareness				
1	Undertake letterbox drops to local residents with information on inappropriate Reserve activities	N/A	No garden dumpings, encroachment or illegal vegetation removal reported	Council	N/A
1	Establish a dedicated Waverley Flora Park page on Council's website	N/A	Web page completed	Council	N/A
Impleme	entation plan				
3	Undertake a full review of the Waverley Flora Park Reserve Activity Plan 2013-2018	N/A	Waverley Flora Park Reserve Activity Plan 2013-2018 reviewed within five years	Council and/or contractor	\$10,000

15 REFERENCES

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APPENDIX 1: CONSERVATION SIGNIFICANCE OF THE RESERVE'S NATIVE FLORA AND FAUNA

Waverley Flora Park contains six native vegetation communities, three of which are listed as threatened vegetation communities under the Tasmanian *Nature Conservation Act 2005*. These are summarised in Table A1.1.

Table A1.1: Conservation status of native vegetation communities occurring within the Reserve.

Community name	TASVEG code	Conservation status
Eucalyptus ovata forest and woodland	DOV	Endangered
Lowland Themeda grassland	GTL	Endangered
Eucalyptus amygdalina forest and woodland on sandstone	DAS	Vulnerable
Eucalyptus viminalis grassy forest and woodland	DVG	Not threatened
Bursaria – Acacia woodland and scrub	NBA	Not threatened
Allocasuarina verticillata forest	NAV	Not threatened

Several flora species occurring in the Reserve are listed as threatened species under the Tasmanian *Threatened Species Protection Act 1995* (the TSP Act) and/or Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act). These are summarised in Table A1.2.

Table A1.2: Flora species of conservation significance recorded within the Reserve.

Flora species	Common name	Conservation		Habitat / Comments
Caladenia caudata	Tailed spider orchid	Rare	Vulnerable	Scattered populations at several locations. Mainly known from grassland areas to the east of Dr Winifred Curtis entrance
Scleranthus fasciculatus	Spreading gnawel	Vulnerable	-	Scattered plants occur in the west and centre of the Reserve
Velleia paradoxa	Spur velleia	Vulnerable	-	Localised population to the east of Dr Winifred Curtis entrance
Arthropodium strictum	Chocolate lily	Rare	-	Single extensive population recorded in 2003

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Flora species	Common name		ation status EPBC Act	Habitat / Comments
Austrodanthonia induta	Tall wallaby grass	Rare	-	Populations recorded near Reserve entrance E1 and along the transmission easement in the east of the Reserve
Haloragis heterophyllus	Variable raspwort	Rare	-	Single anonymous record
Juncus amabilis	Gentle rush	Rare	-	Single anonymous record
Lepidium pseudotasmanicum	Shade peppercress	Rare	-	Several observations scattered across the Reserve
Senecio squarrosus	Rigid grassland groundsel	Rare	-	Occurs in grassy areas to the east of Dr Winifred Curtis entrance

The Reserve contains suitable habitat also for several threatened fauna species listed under the TSP and/or EPBC Acts, including the endangered swift parrot and eastern barred bandicoot which have been previously observed in the Reserve (refer Table A1.3).

Table A1.3: Fauna species of conservation significance for which suitable habitat exists within the Reserve.

Fauna species	Common name	Conservation TSP Act EP		Habitat / Comments
Lathamus discolor	swift parrot	Endangered	Endangered	Nesting habitat is hollows in mature eucalypts with stem diameter >70cm at breast height. Forages in mature <i>Eucalyptus globulus</i> and <i>E. ovata</i> trees. Has been previously recorded in the Reserve.
Perameles gunnii	eastern barred bandicoot	-	Endangered	Inhabits grassy woodlands, native grasslands and mosaics of pasture and shrubby ground cover. Observed by local residents in recent years.

Fauna species	Common name	Conservation status TSP Act EPBC Act	Habitat / Comments
Tyto novaehollandiae subsp. castanops	masked owl (Tasmanian)	Endangered -	Inhabits dry eucalypt forest and woodland with old growth eucalypts containing hollows. Suitable nesting habitat exists within the Reserve.

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APPENDIX 2: BIRD SPECIES RECORDED IN WAVERLEY FLORA PARK

(compiled by BirdLife Tasmania in January 2013)

Australasian Pipit Grey Currawong
Australian Hobby Grey Fantail
Australian Magpie Grey Goshawk
Blackbird Grey Shrike-thrush
Black Currawong House Sparrow
Black-faced Cuckoo Shrike Kookaburra

Black-headed Honeyeater Little Wattlebird Masked Lapwing

Bluewinged Parrot Musk Lorikeet

Brown Falcon New Holland Honeyeater

Brown Goshawk

Brown Thornbill

Common Bronzewing

Common Starling

Noisy Miner

Pallid Cuckoo

Satin Flycatcher

Scarlet Robin

Crescent Honeyeater Shining Bronze-cuckoo

Dusky Robin Silvereye

Dusky Woodswallow Spotted Pardalote Eastern Rosella Striated Pardalote

Eastern Spinebill Sulphur-crested Cockatoo

European Goldfinch Superb Blue Wren

Fantailed Cuckoo Tree Martin

Flame Robin Wedge-tailed Eagle
Galah White-breasted Sea Eagle

Golden Whistler
Greenfinch
Green Rosella
Grey Butcherbird

Welcome Swallow
Yellow-rumped Thornbill
Yellow-tailed Black Cockatoo
Yellow-throated Honeyeater

Overflying: Kelp, Silver and Pacific Gulls, White-faced Heron, White-throated Needletail (large numbers overhead sometimes in updraught).

APPENDIX 3: BELLERIVE SOLDIERS' AVENUE OF HONOUR

The following articles are reproduced from their original publications and describe the tree planting ceremony for the Bellerive Soldiers' Avenue of Honour.

Bellerive Soldiers Avenue Tree Planting Ceremony

There was a large gathering on Saturday afternoon at the Bellerive rifle range to witness the planting of trees to form an avenue of honour of those members of the club who have volunteered for active service during the present war. The Inspector of rifle Clubs (Lieut. Sanders) and Mrs Sanders were mongst those who went over from Hobart, and evinced a lively interest in the proceedings. Mr H H Facy, captain of the club, asked Major A Morrisby to address the gathering before the actual work began. Major Morrisby said the trees to be planted would represent the members of the club who were now or had been at the front in this great war, and now numbered 23 men out of a total of 60 members. This constituted more than a third of the membership, a percentage, he believed that had not been exceeded by any country rifle club in Tasmania. Of the 23, two Private Herbert Lazenby and Private A Edwards, had made the supreme sacrifice. In planting the avenue they were helping to mark an event that would form no mean portion of the history of Tasmania, and show to future generations the part their boys had taken in the affairs of the Empire, and in assisting to vindicate the rights of the weak and small nations. He urged them to continue to do all they could to assist in the prosecution of the war, which they could do in many ways. The visitors were then invited to the entrance of the rifle range, where the first tree was planted. All the holes had been previously prepared, and the trees (Macrocarpa) placed beside them. The trees were marked with the names of the soldiers in whose honour they were planted. Many of the relatives of the men were present and themselves planted the trees. Other trees were planted by the president of the club (Dr Haywood), the captain (Mr H Facy), members of the club, and visitors.

The members of the club (who turned out well) set to work with a will, and while the planting was going on others pt up guards, a quantity of sawn timber having been provided, while others fastened wire around the guards, the more effectively to protect the trees. Splendid work was done by Mr James O'May and his son, Mr E W O'May (secretary of the club). The former was the practical man, and mainly attended to all the details of the tree-planting, while the latter was everywhere when there was work to be done. After the trees had been planted, the ladies, who had mustered in great force, dispensed afternoon tea. Work was then resumed, and all the trees were guarded and wired, and the names added. In the evening an entertainment was given in the Bellerive Institute, when the trophies won during the past year were presented by the president (Dr Haywood) and Major Morrisby. The room was crowded. Several songs and recitations were given by Messrs McVilly, N Ford and others, after which dancing was indulged in. Supper was provided by the ladies. The proceeds of the entertainment were in aid of the funds of the Miniature Rifle Club range, which is in course of construction.

Source: *The Mercury*, 9 September 1918 (page 7)

A Letter from Bellerive By Lurline

Avenue of Honour

The planting of an avenue of trees at the rifle range, which ceremony was postponed from the previous Saturday on account of heavy rain, took place on the 7th in the presence of a large number of people. The avenue was in honour of members of the club who had gone to the front, 23 out of a total of 60 members had gone, two of whom had been killed. Mr H H Facy, captain of the club, asked Major Morrisby to address the gathering before the planting began. The major made a very good speech, which was appreciated by all present. The holes for the trees had previously been prepared and the trees placed ready for planting; they were marked with the names of the solders in whose honour they were planted. Many relatives were present, and planted trees themselves, others being planted by Dr Hayward, Mr Facy, and some of the visitors. Guards have been put up to protect the trees. Great credit is due to the club members for the work they have put into the range. The ladies provided afternoon tea. In the evening an entertainment was given, when the trophies won during the past year were presented by the president (Dr Hayward) and Major Morrisby. The hall was crowded. Songs and recitations were give and supper was served by the ladies. The proceeds of the entertainment are to go towards the funds of the miniature rifle range at Bellerive, which is now being constructed.

Source: Weekly Courier, 12 September 1918 (page 32)



APPENDIX 4: SUMMARY OF STAKEHOLDER CONSULTATION

During October - November 2012, identified stakeholders were invited to provide comments relevant to the development of the *Waverley Flora Park Reserve Activity Plan 2013-2018*.

A public meeting and community 'walk and talk' session was facilitated by Council and Tasflora on 31 October 2012. The purpose of the session was to seek input from local residents, the Waverley Flora Park Landcare Group and other relevant stakeholders on values and management issues associated with the Reserve. Seven stakeholders attended the meeting. Feedback was also sought from participants in the annual wildflower walk which was held in the Reserve on the same day.

Key issues raised during the walk and talk included:

- the natural values of the Reserve, including observations about orchids and native animals and birds:
- illegal access by trail bikes at several locations;
- weed management;
- dumping of garden waste and rubbish;
- negative issues pertaining to off-lead dogs not being under effective control;
- concern about native species being destroyed during track maintenance activities; and
- fire management (outside the scope of this plan).

Following the community session, a feedback form seeking input to the *Waverley Flora Park Reserve Activity Plan 2013-2018* was provided to stakeholders. Fourteen written and telephone responses were received, which are summarised in Table A4.1.

Where possible, all relevant community feedback has been considered in the development of the *Waverley Flora Park Reserve Activity Plan 2013-2018*. However some issues identified during the consultation process are beyond the scope of this plan or pertain to management issues outside the Reserve. These issues have been noted by Council and will be addressed through other processes where feasible.

Table A4.1: Summary of written responses received in October – November 2012.

Management issue	Number of respondents
Weed control	
Weeds are overgrowing the Charles Darwin Trail adjacent to South Arm Highway	1
Regeneration and revegetation	
Is too much Velleia paradoxa seed being collected each year?	1
Reserve entrances	
Install a dog waste bin at Nankoor Crecent entrance (E8)	1
Dedicate Waverley Street entrance to aboriginal interpretation and 'snake wall' structure	1
Name the Quarry Road entrance "Lemena" (sheoak in Palawa kani)	1
Adequate parking needed at all entrances	1
Tracks and trails	
Track signage could be improved	1
Part of the Charles Darwin Trail has washed away near Reserve entrance E6	1
Infrastructure	
Install interpretation signs about the quarry / rifle range/ vegetation / management issues	2
Upgrade Waverley Street play ground	1
Install a memorial to Aborigines that died in the 'Black War' during early colonisation	1
Fence along Quarry Road needs replacing	1
Fence at the quarry lookout needs replacing	1
Other Reserve management issues	
Current recreation activities (walking, dog walking, mountain biking) should be allowed to continue	1
Vehicles / trail bikes should not be allowed	3
Trail and pedal bikes do not give way to pedestrians	1
Undertake more flora walks	2
Dogs should be on lead only	1
Dogs have been seen chasing wildlife	2
Stop rubbish dumping / remove rubbish	5
Develop brochure for the Park's track network	1

Management issue	Number of respondents
Prevent feral cats	1
Regular maintenance needed (eg grass mowing)	2
Adjacent residents have been planting exotic species in the Reserve	1
Adjacent residents have been removing vegetation (eg to improve views)	1
Firearms are being been used to target wildlife	1
Hens are running loose in the Reserve near Aruma Street	1
Wood is being taken from the Reserve at certain points	1
Camping should not be permitted in the Reserve	1
Some residents are trapping and relocating wildlife	1
Graffiti art should be encouraged on the reservoirs	1
Neighbouring residents should ensure cats are microchipped and desexed	1
Consider rehabilitating the mountain bike/BMX area	1
Management issues outside the scope of the Waverley Flora Park R	Reserve Activity
Fire management issues	3
Houses are being burgled via gates in back fences	1

APPENDIX 5: WEED SPECIES PRESENT AND RECOMMENDED CONTROL TECHNIQUES

Common name	Species	Status	Picture	Recommended control technique
DECLARED WEEDS				
Blackberry	Rubus fruticosus aggregate	Declared WONS		Large stands - spot spray larger using an appropriate herbicide (as per the DPIPWE Control Guide) in non-fruiting periods Isolated patches - spot spray or cut and paste
Boneseed	Chrysanthemoides monilifera	Declared WONS		Hand pull seedlings. Cut and paste larger plants. Fruit should be bagged and disposed of responsibly.
Canary broom	Genista monspessulana	Declared		Hand pull seedlings. Cut and paste larger plants. Spot spraying may be appropriate for larger infestations.

Common name	Species	Status	Picture	Recommended control technique
Gorse	Ulex europaeus	Declared WONS		Hand pull small plants. Cut and paste larger plants. Spot spraying may be appropriate for larger infestations.
Pampas grass	<i>Cortaderia</i> sp.	Declared		Spot spray in spring, ensuring complete coverage of foliage with herbicide
Spanish heath	Erica lusitanica	Declared		Hand pull, cut and paste or spot spray

Common name	Species	Status	Picture	Recommended control technique		
OTHER ENVIRONME	OTHER ENVIRONMENTAL WEEDS					
Agapanthus	Agapanthus praecox subsp. orientalis			Hand dig clumps and roots. Dispose of flower heads before they set seed.		
Blue periwinkle	Vinca major			Brushcut followed by spot spraying. Repeated follow-up spot spraying required.		
Bluebell creeper	Billardiera heterophylla			Hand pull or cut and paste seedlings and small plants. Remove as much of the root system as possible. Cut and paste larger plants with straight glyphosate		

Common name	Species	Status	Picture	Recommended control technique
Cape wattle	Paraserianthes Iophantha			Hand pull seedlings. Cut and paste larger plants.
Cotoneaster	Cotoneaster sp.			Hand pull seedlings. Cut and paste larger plants.
Mirror bush	Coprosma repens			Hand pull seedlings. Cut and paste larger plants.

Common name	Species	Status	Picture	Recommended control technique
Radiata pine	Pinus radiata			Hand pull small plants. Cut and paste larger plants (mature trees should be removed by a qualified arborist). The drill and fill technique can be used for isolated mature trees located away from tracks.
Sweet briar	Rosa rubiginosa			Cut and paste or spot spray
Sweet pittosporum	Pittosporum undulatum			Hand pull small plants. Cut and paste larger plants.

Common name	Species	Status	Picture	Recommended control technique
Tree lucerne	Chamaecytisus palmensis			Hand pull seedlings. Cut and paste larger plants.

APPENDIX 6: LOCATION OF DECLARED WEEDS



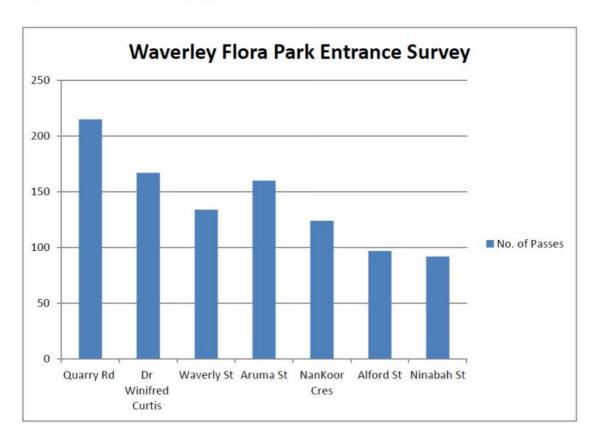
APPENDIX 7: LOCATION OF NON-DECLARED ENVIRONMENTAL WEEDS



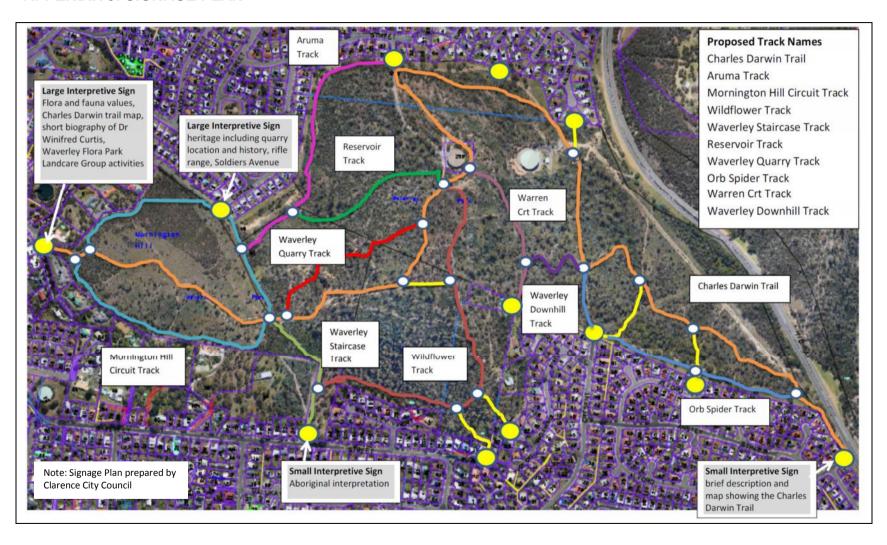
APPENDIX 8: ENTRANCE SURVEY RESULTS

Surveys were done over one full seven day period. the dates and locations are as follows.

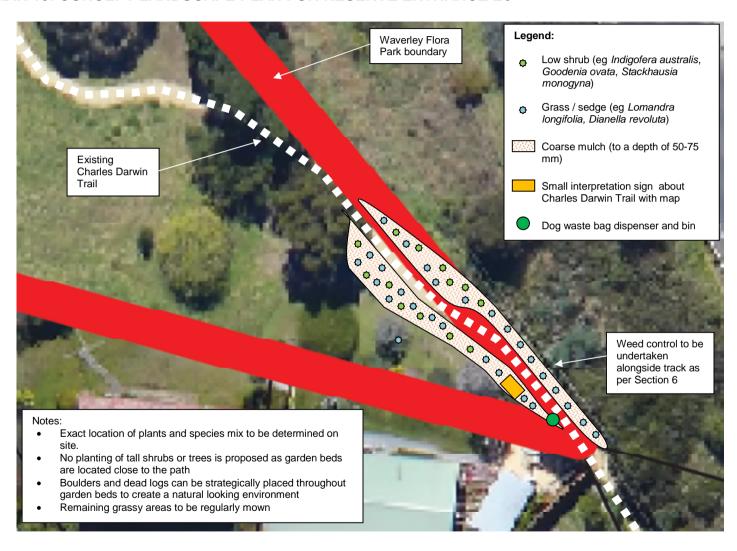
Entrance	Survey Period	No. of Passes
Quarry Rd	5 - 12/11/2012	215
Dr Winifred Curtis	12 - 19/11/2012	167
Waverly St	20 - 27/11/2012	134
Aruma St	27/11 - 5/12/2012	160
NanKoor Cres	5 - 12/12/2012	124
Alford St	17 - 24/12/2012	97
Ninabah St	9 - 16/01/2013	92



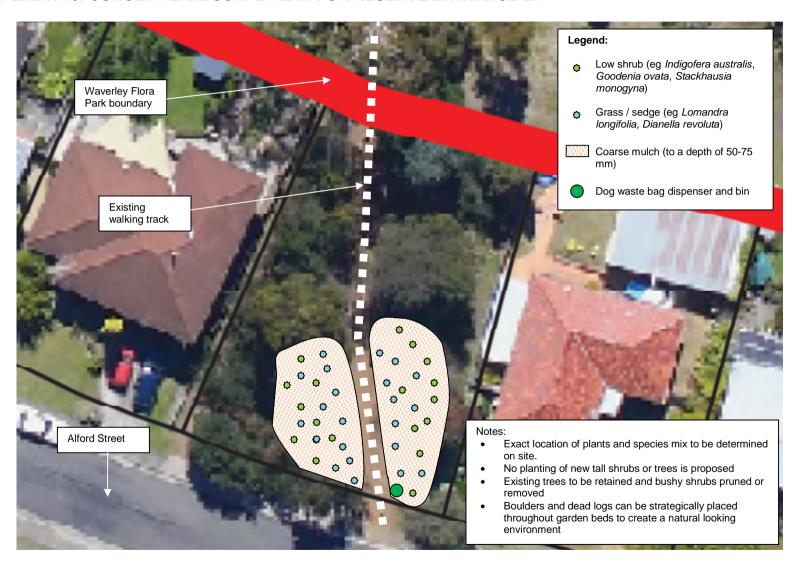
APPENDIX 9: SIGNAGE PLAN



APPENDIX 10: CONCEPT LANDSCAPE PLAN FOR RESERVE ENTRANCE E6



APPENDIX 10: CONCEPT LANDSCAPE PLAN FOR RESERVE ENTRANCE E7



APPENDIX 12: SUMMARY OF ON GROUND MANAGEMENT RECOMMENDATIONS

Weed management

- Priority should be given to controlling gorse, pampas grass, Spanish heath and isolated populations of boneseed and canary broom.
- Weed control should be undertaken prior to and following planned burns.
- Control of declared and other environmental weeds should be undertaken simultaneously where possible.
- Control of exotic grasses and broadleaf weeds is only required in revegetation areas and where necessary as part of a general Reserve maintenance program.
- An annual sweep and follow-up control of all targeted weeds should be undertaken.
- Follow-up GPS mapping of all weeds in the Reserve should be undertaken after five years to monitor progress and inform future weed control priorities.

Revegetation and regeneration

- Vegetation monitoring plots should be established prior to undertaking prescribed burns and monitored annually.
- An updated flora survey and annual vegetation composition and condition assessments should be undertaken to further inform on ground management activities.
- When undertaking manual control of shrub regrowth, stems should be cut at ground level and stems immediately painted with herbicide.
- Revegetation activities should be limited to landscaping at Reserve entrances.
- New revegetation and landscaping activities should not be committed to unless sufficient resources are available to undertake ongoing regular maintenance of newly planted areas.

Reserve Entrances

Reserve entrances should be improved by enhancing signage, installing strategic fencing to
prevent unauthorised access by vehicles and trail bikes, and undertaking weed control and
native landscaping activities to improve visual amenity.

Tracks and trails

 Track upgrades and maintenance activities recommended in the Reserve's Bushfire Management Plan should be implemented as a priority.

Infrastructure

- The Waverley Flora Park Signage Plan should be implemented to facilitate visitor access and interpretation.
- A costed and prioritised fence upgrade program should be developed to prevent access by trail bikes and unauthorised vehicles.
- Dog waste bag dispensers and bins should be installed at each main entrance to the Reserve.
- The fence above the quarry should be repaired or replaced and a small safety warning sign erected.
- New outdoor seats should be installed at several locations in the Reserve.
- Enhancement of the play equipment at Reserve entrance E12 should be considered as part of the proposed Waverley Street Entrance Landscape Plan.

• A review of the infrastructure requirements of the Reserve should be undertaken in 2018.

Other management activities

- The existing Reserve maintenance program should be enhanced to incorporate ongoing maintenance activities recommended by the Reserve's Fire Management Plan and to ensure Reserve entrances are regularly maintained.
- Fauna habitat requirements should be considered when planning bushfire management activities in the Reserve.
- Fauna and bird surveys of the Reserve should be undertaken in 2013 and 2018 to further inform on ground management activities.
- A Master Plan should be developed and implemented for the proposed Soldiers' Memorial Park and Avenue of Honour at 60 Quarry Road, based on historical research and extensive community consultation.
- The stone wall at the base of the quarry should be rebuilt as a dry stone wall.
- An assessment of the mountain bike park should be made to determine whether it should be upgraded or closed.
- The next review of Council's Dog Management Policy should include consideration of the dog management issues raised in the *Waverley Flora Park Reserve Activity Plan 2013-2018* community consultation process.

Community participation and awareness

- Community education should be undertaken to facilitate behavioural change and encourage ownership and appreciation of the values of the Reserve.
- Formal Council enforcement procedures will be instigated in instances of illegal or persistent inappropriate activity within the Reserve.
- A dedicated Waverley Flora Park page should be established on Council's website.

Implementation Plan

- Progress against all performance measures identified in the Implementation Plan should be reviewed annually.
- The Waverley Flora Park Reserve Activity Plan 2013-2018 should be reviewed in 2018 to assess progress and determine ongoing management priorities for the Reserve.