



City of
Wanneroo

**Hardcastle Park
Revegetation Plan
CPS 7860**

39 Hardcastle Avenue, Landsdale

September 2018

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1. Introduction

Hardcastle Park (the Park) encompasses an area of 1.16 hectares and is located at 39 (Lot 3000) Hardcastle Avenue, Landsdale (Figure 1). The park contains Banksia Woodlands of the Swan Coastal Plain threatened ecological community (Banksia Woodlands TEC) and Black Cockatoo foraging habitat (Ecoscape, 2015). The City of Wanneroo (The City) is proposing to clear 0.198 hectares to facilitate the construction of a community playground and turfed area (Figure 2).

The City submitted a Native Vegetation Clearing Permit (NVCP) application to clear 0.30 hectares of vegetation to the Department of Water and Environmental Regulation (DWER) for assessment (CPS 7860). DWER carried out an initial assessment of the proposal and considered the environmental impacts to Banksia Woodlands TEC to be significant. As such, the City revised the proposal and reduced the application area to 0.198 hectares. The reduced application area increases the retained area of Banksia Woodlands TEC to 0.588 hectares, which is above the minimum patch size to be viable. DWER has requested the City prepare a revegetation plan to support the NVCP application.

The City proposes to revegetate 0.25 hectares within the Park. This is in excess of the 0.177 hectares that DWER has requested and is provided to increase native vegetation coverage. The additional 0.075 hectares to be revegetated is within a Western Power easement where a vegetation height limitation of 1m applies. Revegetation in this area is subject to Western Power approvals.

The purpose of the Hardcastle Park Revegetation Plan (the Plan) is to address the environmental impacts associated with clearing of native vegetation for the development of a community playground and turfed area located within the Park.

This plan addresses the residual impacts of the proposal to clear 0.198 hectares of native vegetation by ensuring the Banksia Woodlands TEC is managed and protected within the Park. This plan is intended to guide on-site revegetation of 0.25 hectares of degraded areas within the Park and ongoing maintenance of 0.588 hectares of remnant Banksia Woodland TEC within the undeveloped portion of the Park by the City of Wanneroo in perpetuity (Figure 3).

This plan has been developed by Belinda McCawley who is employed by the City as a Natural Area Assets Officer. Belinda holds a Bachelor of Science in Environmental Management and a Post Graduate Diploma in Sustainable Development. Belinda has previous experience in developing management plans and on ground implementation of revegetation projects. Correspondence relating to the Hardcastle Park Revegetation Plan should be addressed to:

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The City undertakes revegetation projects on an annual basis as part of the Capital Works program and has internal resources providing expertise on completion criteria and onsite revegetation techniques.

2. Existing environment

2.1 Land

The Park is located on Crown Land and is managed by the City under a management order (Appendix A). It is reserved for the purpose of recreation and zoned 'Urban Development' under the City's District Planning Scheme No. 2. The Park is identified as Public Open Space under the East Wanneroo Cell 5 Agreed Structure Plan 7 (City of Wanneroo 2002).

A Western Power easement runs along the southern boundary (Landsdale Rd) of the Park. Revegetation within the easement has height limitations of 1m. The City will obtain authorisation from Western Power to revegetate the easement. In the event that authorisation is not provided, the City will not proceed with the additional revegetation of 0.075 hectares.

The City proposes to amend the purpose of the management order for the Park to include 'Conservation' to ensure the long term security of the revegetation site and protect the remnant Banksia Woodlands TEC from future development.

2.2 Vegetation

A Level 2 Flora and Vegetation Survey was undertaken by Ecoscape in 2015 (Appendix B). A total of 69 locally endemic flora species were recorded within the Park. A single vegetation unit was defined and delineated at the Park, *BaHhMc*, defined as;

Banksia attenuata and *Allocasurina humilis* low, open woodland over *Hibbertia hypericoides*, *Eremaea pauciflora* var. *pauciflora* low, open shrubland over *Mesomelaena pseudostygia* sparse sedgeland and *Amphipogon turbinatus* sparse tussock grassland.

The vegetation unit occupies 0.8ha of the Park, with the remaining area cleared and in completely degraded condition (Ecoscape, 2015). The remnant vegetation within the Park is in either Very Good or Excellent condition (Figure 4), with weeds concentrated around disturbed areas (Figure 5). No threatened or priority flora were recorded during the survey. Ecoscape undertook a Floristic Community Type (FCT) analysis which confirmed that vegetation present at the Park matches the composition of the Banksia Woodlands TEC SCP20a.

2.3 Soil and landforms

Soil land systems are uniform across the Park and comprise of Karrakatta Sand Yellow Phase, within the Spearwood system. This is categorised by low hilly to gently undulating terrain. Yellow sand over limestone at 1-2 m. *Banksia* spp. woodland with scattered emergent *E. gomphocephala* and *E. marginata* and a dense shrub layer (Ecoscape, 2015).

The presence of Acid Sulphate Soils within the Park is considered low or no risk (Ecoscape, 2015).

2.4 Hydrology

A review of the wetlands of the Swan Coastal Plain feature maps identified that there are no surface water expressions within the Park. The nearest Conservation Category wetland (name unknown) is located approximately 1km to the east of the Park (WALGA, 2018).

Depth to ground water ranges from between 35-39m below ground level across the site and flows in a south to south west direction (WALGA, 2018). The groundwater salinity levels are considered 'fresh' with TDS levels <500 mg/L (WALGA, 2018).

2.5 Fauna

A Level 1 Fauna Survey was undertaken by Ecoscape in 2015. Results of the survey found that the Park comprises of one habitat type which consists of Banksia Woodland with dense lower mixed shrubs and ground cover. No fauna of conservation significance were recorded in the study area, however the desktop study found that four species have a moderate likelihood of occurring in the Park, these are;

- Southern Brown Bandicoot (*Isoodon obesulus fusciventer*);
- Carnaby's Black-Cockatoo (*Calyptorhynchus latirostris*);
- Forest Red-tailed Black-Cockatoo (*Calyptorhynchus banksii naso*); and
- Rainbow Bee-eater (*Merops ornatus*).

3. Current disturbances and threats

3.1 Site history

Aerial imagery from 1985 shows the Park as uncleared native vegetation with some minor tracks (360 Environmental, 2017). There is evidence of thinning of vegetation between 1985 and 1995. Between 2005 and 2015 the area surrounding the Park was cleared and developed into residential lots. The development immediately to the north of Hardcastle Park commenced in 2011 (Nearmap, 2018). It was during this time that native vegetation on the southern and western boundary appears to have been cleared.

The City received a Management Order for Hardcastle Park, designated for the purposes of 'public recreation', on 13 February 2015. Since 2015, the City has undertaken weed management, pruning and rubbish collection at the Park. Regular inspections are carried out at the Park by City maintenance personnel. Weeds and rubbish are consistently identified as disturbances in the Park. Additional threats that have the potential to impact on the Park include; fire and Phytophthora Dieback.

3.2 Weeds

Introduced species have been recorded within the Park. Ecoscape (2015) observed 18 taxa, two of which are high priority; *Lupinus angustifolius* and *Lupinus cosentinii*. The majority of the weeds are concentrated around the boundary of the Park. Table 1 lists the introduced species and their common name.

The most common weeds recorded were, *Avena barbata*, *Lupinus cosentinii* and *Pelargonium capitatum*; with *Gladiolus caryophyllaceous*, *Patersonia occidentals* and *Ehrharta calycina* more common within the native vegetation (Ecoscape, 2015). No Weeds of National Significance (WON's) have been recorded within the Park.

Table 1: Introduced species recorded at Hardcastle Park (Ecoscape, 2015).

Species	Common name
<i>Arctotheca calendula</i>	Cape Weed
<i>Avena barbata</i>	Bearded Oat
<i>Brassica tournefortii</i>	Wild Turnip
<i>Briza maxima</i>	Blowfly Grass
<i>Bromus diandrus</i>	Great Brome
<i>Ehrharta calycina</i>	Perennial Veldt Grass
<i>Euphorbia terracina</i>	Geraldton Carnation Weed
<i>Gladiolus caryophyllaceus</i>	Wild Gladiolus
<i>Lupinus angustifolius</i>	Narrowleaf Lupin
<i>Lupinus cosentinii</i>	Western Blue Lupin, Sandplain Lupin
<i>Lysimachia arvensis</i>	Pimpernel
<i>Melilotus indicus</i>	King Island Melilot
<i>Oenothera drummondii</i>	Beach Evening Primose
<i>Pelargonium capitatum</i>	Rose Pelargonium
<i>Raphanus raphanistrum</i>	Wild Radish
<i>Sonchus oleraceus</i>	Common Sowthistle
<i>Trifolium arvense</i>	Hare's Foot Clover
<i>Ursinia anthemoides</i> subsp. <i>anthemoides</i>	Ursinia

3.3 Rubbish

Dumping of waste is a common occurrence throughout bushland reserves and parks in residential areas. The dumping of lawn clippings and garden waste can lead to weed infestation and plant disease. Evidence of rubbish dumping was recorded during the Biological survey (Ecoscape, 2015) and has been recorded at the Park during maintenance inspections.

3.4 Inappropriate fire regimes

Inappropriate fire regimes have the potential to alter the structure, density and composition of natural areas (WALGA, 2004). Isolated areas of Banksia Woodland that are small in scale are particularly sensitive to fire (DotEE, 2016). There was no evidence of fire within the vegetation quadrats sampled at the Park (Ecoscape, 2015).

3.5 Phytophthora Dieback

Phytophthora Dieback (Dieback) is a plant pathogen that presents a significant threat to the health of ecosystems on the Swan Coastal Plain, including Banksia Woodlands. Dieback infestations can alter species composition and ecosystem functions which has the potential to result in increased invasion of weeds through the opening up of the canopy (DotEE, 2016). Dieback can be spread through various vectors, including; footwear, vehicles, machinery and equipment. The biological survey undertaken in 2015 did not indicate any evidence of Dieback.

4. Revegetation commitments

Vision: The revegetation plan will ensure the viability of the patch of Banksia Woodland TEC at the Park while mitigating residual significant impacts of the clearing of 0.198 hectares for construction of a community park and turfed areas.

Objectives: The main goals of the revegetation plan include;

- Establishment of locally native vegetation that is resilient and self-sustaining;
- Increase coverage of locally native vegetation;
- Provide and maintain foraging habitat for Black Cockatoos;
- Maintain the existing patch of Banksia Woodland TEC in Very Good to Excellent condition; and
- Decrease weed species coverage.

5. Reference site floristic data

One vegetation unit, *BaHhMc* will be revegetated at the Park. Reference site floristic data from quadrats sampled in the Park (Ecoscape, 2015) and opportunistic observations, has been used to establish the targets and completion criteria. The Park was selected as a reference site as it is representative of the site and floristic community. The numbers of species recorded at the Park are characteristic of a 1 hectare patch in good condition (Ecoscape, 2015). Species richness at quadrat 1 is 35; quadrat 2 has a species richness of 29. *Banksia attenuata* provided the greatest percentage of cover in both quadrats. The location of the reference site quadrats are shown in Figure 4. Quadrat 1 is located within the 0.588 hectares of vegetation that will remain onsite for management following clearing.

6. Targets and completion criteria

This revegetation plan will be implemented over a five year period. The targets and completion criteria for the Park are outlined in Table 2 and have been developed to meet the objectives of the revegetation plan.

6.1 Vegetation establishment

Vegetation establishment in the revegetation area will occur by direct seeding onto topsoil and planting of tube stock. Technical specifications detailing vegetation establishment techniques are included within Appendix C- Section 3.

6.2 Seed collection, direct seeding, plant salvage and propagation

Local provenance species will be sourced from reserves suitable for supplying the seed quantities required to meet completion criteria. To ensure sustainable collection practices, seed will be sourced from the following reserves:

- Hardcastle Park, Landsdale;
- Appleby Park, Darch;
- Hepburn Park, Landsdale;
- Landsdale Park, Darch; and
- Middleton Park, Alexander Heights.

The timing of seed collection is detailed in the schedule (Figure 6). The City will engage a Revegetation Industry Association of Western Australia (RIAWA) member contractor to undertake seed collection, direct seeding and propagation works. Seed collection, direct seeding and propagation will be carried out in accordance with the specifications outlined in Sections 1 and 2 of Appendix C. A list of species for seed collection, propagation and direct seeding is provided in Figure 7. The list has been developed using data collected from the biological survey and personnel experienced in developing and implementing revegetation projects.

The City will engage a Revegetation Industry Association of Western Australia (RIAWA) member to salvage plants that are not able to be propagated commercially. The plants will be salvaged from the development area prior to clearing vegetation and taken to a nursery for storage and replanting. The salvaged plants will be planted in the revegetation area in Year 1. A list of species to be salvaged is provided in Figure 7.

6.3 Topsoil and mulch

Topsoil will be taken from the area cleared for the community playground and turfed area where vegetation is in very good to excellent condition by removing the top 100mm. The topsoil will be spread onto the revegetation area along the southern portion of the site at a depth of 100mm. Research by Brundrett et al (2017), on recruitment of species from topsoil from Banksia Woodlands, has shown that 31% of species are expected to be recruited from the soil bank. An additional 14% of species are expected to be disturbance opportunist as the disturbance of the topsoil is likely to trigger germination of dormant seed, thus making the topsoil an important source of plant species for the revegetation site. Table 3 provides a list of species and their growth form expected to emerge from the topsoil taken from the cleared area.

Mulch will be collected from the area cleared for the community playground and turfed area and stored on site. The mulch will be spread over the revegetation area following planting of tube stock.

Areas of weed infestation will be avoided during topsoil collection. The timing of topsoil and mulch spreading is provided in the schedule (Figure 6).

Table 2: Completion criteria, targets and monitoring for Hardcastle Park Banksia Woodland TEC.

Criterion	Baseline floristic data	Completion targets	Completion criteria	Monitoring
1	Species richness of quadrat 1 is 35.	Maintain species richness of existing bushland.	Species richness of quadrat 1 is 35.	Monitoring of quadrat 1 species richness biennially.
2	Species richness of the 10m x 10m quadrats were 35 and 29. Therefore the average number of species/quadrat is 32.	Minimum of 50% of native vegetation species returned based on propagation capacity of species. Therefore revegetation areas shall have a minimum of 16 native species per quadrat (~2 plants / m ²), average as recorded at the reference sites.	2 plants / m ² in the revegetation areas.	After year 2 and year 4 of planting; the species and number of plants / m ² in the revegetation areas will be counted.
3	% cover of weeds in quadrats is less <1%	Weeds are mostly absent from the reference site. Considering external pressures (adjacent to turf and urban location) a target of <5% has been established for the revegetation .	The revegetation areas must have % cover of <5% weeds.	Monitoring of revegetation areas 2 years following initial planting, then biennially.
4	No declared weeds are present	Declared Weeds are managed in accordance with the <i>Biosecurity and Agriculture Management Regulations 2013</i>	Declared weeds are absent from the rehabilitation areas and existing bushland.	Monitoring of quadrat 1 and revegetation areas 2 years following initial planting, then biennially.
5	Survival rate to be achieved	If after year 2 and year 4 of planting, a survival rate of at least 80% is not achieved, all planted tubestock that have not survived must be replanted within 12 months and monitored for a further 2 years.	The revegetation site needs to ensure a survival rate of at least 80% is achieved after five years, and replant any plants within 12 months of dying.	After year 2 and year 4 of planting, the number of surviving plants in the revegetation areas will be counted.
6	Green waste / rubbish are present in bushland.	Green waste and rubbish are absent from the revegetation site.	The revegetation site must be free of green waste and rubbish.	6 monthly during asset inspections and biennially during flora and vegetation monitoring.
7	Vegetation is in Very Good to Excellent Condition	Existing bushland to be maintained in Very Good to Excellent Condition.	Vegetation is in Very Good to Excellent Condition	Vegetation condition to be assessed in Years 1, 3 and 5.

Table 3: List of species expected to emerge from topsoil collected from the cleared area at Hardcastle Park and spread on the adjacent revegetation area (derived from Brundrett, 2017).

Species	Growth form
<i>Amphipogon turbinatus</i>	Grass
<i>Banksia attenuata</i>	Tree
<i>Bossiaea eriocarpa</i>	Shrub
<i>Daviesia triflora</i>	Shrub
<i>Desmocladus flexuosus</i>	Sedge
<i>Gompholobium tomentosum</i>	Shrub
<i>Hibbertia hypericoides</i>	Shrub
<i>Levenhookia stipitata</i>	Herb
<i>Lyginia barbata</i>	Sedge
<i>Patersonia occidentalis</i>	Herb

6.4 Site preparation and protection

Prior to vegetation establishment, site preparation and protection activities will be undertaken in accordance with specifications outlined in Appendix C, Section 3. Weed treatment for the species listed in Table 1 will be undertaken in the Park incorporating the revegetation area and maintenance area. A boundary fence, as per City standards, will be installed prior to vegetation establishment to protect the Banksia Woodland TEC and revegetation area. Additional activities to mitigate threats to the Park and ensure success of the vegetation establishment will include signage and hygiene protocols. The timing of site preparation activities are provided in the schedule (Figure 6).

7. Maintenance and contingency measures

Maintenance activities will be undertaken following vegetation establishment and site protection activities to ensure measures are effective in managing the disturbances and threats at the revegetation site and criteria are on target for meeting completion criteria. Post planting weed control will be undertaken in accordance with specifications outlined in Appendix C, Section 3. Where criteria listed in Table 2 are identified as 'at risk' of meeting targets, contingency measures such as remedial planting and watering will be implemented. Maintenance activities will be undertaken where required over the five year period as outlined in Appendix C, Section 3.

8. Schedule and budget

A preliminary schedule (Figure 6) has been developed for site preparation, vegetation establishment, monitoring, maintenance and reporting for the Banksia Woodland TEC and revegetation area. The City is responsible for implementing the actions and will resource the Plan with existing personnel and contractors. Timing of some actions may be dependent on project approval and schedules (i.e. spreading of topsoil). The schedule will be revised in accordance with project approvals and construction schedules.

A cost estimate for the revegetation of the Park and maintenance of the existing bushland is provided in Figure 8. The works will be funded through the City's capital works planning process using municipal funds. When preparing the cost estimate, some assumptions have been made which include;

- Increase of CPI of 2.5% pa;
- Topsoil and mulch to be supplied free of charge, costs to spread only; and
- That funding will be available to commence seed collection in FY 2018/19.

9. Monitoring and analysis

Monitoring will be undertaken as outlined in Table 2 to ensure the criteria are on target to meet completion criteria and will inform contingency measures where required. The City will engage an environmental specialist experienced in surveying and analysing flora and vegetation on the Swan Coastal Plain. The specialist will be required to collect flora and vegetation data for analysis of species richness, vegetation condition, number of surviving plants, weed coverage, presence of weeds and threats. Vegetation within quadrat 2 is proposed to be cleared; as such quadrat 2 will not be included in ongoing monitoring. A report shall be prepared in accordance with Appendix B of '*A Guide to Preparing Revegetation Plans for Clearing Permits*' and provided to DWER on an annual basis (DWER, 2018).

City of Wanneroo personnel will undertake an inspection of the revegetation site (asset inspection) every 6 months to ensure site protection measures are providing the relevant functions to the revegetation site and identify any issues that require maintenance. Actions to rectify issues within the revegetation site will be implemented in a timely manner by raising work orders and/or engaging a contractor.

Timing for monitoring and reporting are outlined in the project schedule provided in Figure 6.

10. References

360 Environmental, 2017. *Hardcastle Park, Landsdale - Application for Native Vegetation Clearing Permit – Purpose Permit*.

Ecoscape, 2015. *Hardcastle Park Biological Survey*.

Brundrett. M, Collins M, Clarke K, Longman V, Wisolith A, 2017. *Flora and Vegetation Completion Criteria*. Department of Biodiversity, Conservation and Attractions: Perth.

City of Wanneroo, 2002. *East Wanneroo Cell 5 (Landsdale) Agreed Structure Plan 7 (ASP7)*. Government of Western Australia.

Department of the Environment and Energy (DotEE), 2016. *Approved Conservation Advice for the Banksia Woodlands of the Swan Coastal Plain ecological community*. Commonwealth of Australia.

Western Australian Local Government Association (WALGA), 2018. Environmental Planning Tool.

Nearmap, 2018. <http://maps.au.nearmap.com/>

Stevens, JC, Rockich, DP, Newton, VJ, Barrett, RL and Dixon, KW 2016. *Banksia woodlands: a restoration guide for the Swan Coastal Plain*. University of Western Australia Publishing, Perth.

Western Australian Local Government Association (WALGA), 2004. *Perth Biodiversity Project - Planning a Future for Perth's Local Bushland, Wetlands and Other Natural Areas*.

Figures



Figure 1: Location Plan



Figure 2: Concept plan



Figure 3: Clearing and rehabilitation areas



Figure 4: Vegetation community and condition

Figure 5: Site Photos



a) Central track, revegetation area.



b) Southern boundary to be revegetated, looking west.



c) Southern boundary to be revegetated, looking east.



d) Western boundary, foreground proposed to be developed, background to be revegetated.



e) Eastern boundary to be revegetated.



h) Northern boundary to be revegetated, western side of existing stairs (looking east).



i) Northern boundary to be revegetated, eastern side of existing stairs (looking east).



f) North east corner, to be revegetated.



g) Northern boundary to be revegetated, eastern side of existing stairs (looking west).

SPECIES	TOTAL Plants requiring Propagation	Plants suitable for Western Power easement
<i>Allocasuarina humilis</i>	200	
<i>Amphipogon turbinatus</i>	350	x
<i>Anigozanthos humilis</i>	300	
<i>Anigozanthos manglesii</i>	350	x
<i>Banksia attenuata</i>	500	
<i>Banksia menziesii</i>	50	
<i>Bossiaea eriocarpa</i>	250	x
<i>Calectasia narragara</i>	200	x
<i>Calothamnus quadrifidus</i>	100	
<i>Conostylis aurea</i>	250	x
<i>Conostylis setigera</i>	150	x
<i>Dampiera linearis</i>	600	x
<i>Daviesia divaricata</i>	50	
<i>Daviesia nudiflora</i>	300	x
<i>Daviesia triflora</i>	200	
<i>Desmocladus asper</i>	Salvage	x
<i>Desmocladus flexuosus</i>	Salvage	x
<i>Eremaea pauciflora</i> var. <i>pauciflora</i>	450	x
<i>Eucalyptus marginata</i>	20	
<i>Gastrolobium capitatum</i>	50	
<i>Gompholobium tomentosum</i>	350	x
<i>Haemodorum laxum</i>	200	x
<i>Hakea ruscifolia</i>	100	
<i>Hibbertia huegelii</i>	100	
<i>Hibbertia hypericoides</i>	600	x
<i>Hybanthus calycinus</i>	150	x
<i>Hypocalymma robustum</i>	250	x
<i>Isotropis cuneifolia</i> subsp. <i>Cuneifolia</i>	300	x
<i>Jacksonia floribunda</i>	200	
<i>Jacksonia sericea</i>	300	x
<i>Lepidosperma leptostachyum</i>	Salvage	x
<i>Lepidosperma scabrum</i>	Salvage	x
<i>Lyginia barbata</i>	Salvage	x
<i>Mesomelaena graciliceps</i>	Salvage	x
<i>Mesomelaena pseudostygia</i>	Salvage	x
<i>Patersonia occidentalis</i>	250	x
<i>Stylidium piliferum</i>	50	
<i>Stylidium repens</i>	50	
<i>Stirlingia latifolia</i>	150	
<i>Xanthorrhoea preissii</i>	250	x

Figure 7: Species list

Actions	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Weed management	\$ 6,510	\$ 10,845	\$ 10,845	\$ 10,845	\$ 10,845	\$ 10,845	\$ 60,735.00
Spread Topsoil / Mulch	\$ -	\$ 5,000	\$ -	\$ -	\$ -	\$ -	\$ 5,000.00
Fencing and gates	\$ -	\$ 32,000	\$ -	\$ -	\$ -	\$ -	\$ 32,000.00
Initial Rubbish Removal	\$ -	\$ 1,000	\$ -	\$ -	\$ -	\$ -	\$ 1,000.00
Seed collection	\$ 8,000	\$ 3,000	\$ 2,000	\$ 2,000	\$ 1,500	\$ 1,500	\$ 18,000.00
Salvage of plants	\$ 2,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,500.00
Direct seeding (labour)	\$ -	\$ 780	\$ -	\$ -	\$ -	\$ -	\$ 780.00
Plant supply	\$ -	\$ 13,039	\$ 5,250	\$ 3,540	\$ 1,850	\$ 1,850	\$ 25,529.00
Planting of tube stock and salvaged plants	\$ -	\$ 14,808	\$ 5,250	\$ 3,540	\$ 1,850	\$ 1,850	\$ 27,298.00
Watering	\$ -	\$ 16,225	\$ 6,363	\$ 4,242	\$ 2,121	\$ 2,121	\$ 31,072.00
Monitoring of revegetation site	\$ -	\$ -	\$ 4,000	\$ -	\$ 4,000		\$ 8,000.00
Monitoring of quadrat 1 and site	\$ -	\$ 3,500	\$ -	\$ 3,500	\$ -	\$ 3,500	\$ 10,500.00
Maintenance of rubbish, fencing, signage and gates	\$ -	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 25,000.00
	\$ 17,010	\$ 105,197	\$ 38,708	\$ 32,667	\$ 27,166	\$ 26,666	\$ 247,414.00

Figure 8: Budget and Costings

Appendices

Appendix A Management Order

Appendix B Hardcastle Park Biological Survey

Appendix C Specifications