

Moonee Ponds Creek Corridor Revegetation Guidelines

**Revegetating the
Moonee Ponds Creek Corridor**

08-12-00

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Forward

Historical accounts describe the Moonee Ponds Creek as having "fields rimmed with magenta fire", "gently sloping hills, lightly covered with eucalypts and acacias" and "the whole area heavy with the mingled odours of the golden myrnong flowers and purple fringed lilies."

The landscape was one of gentle hills and open grassy woodlands in the headwaters, flowing through to a blend of Silurian escarpments and the broad expanses of the basalt plains, eventually flowing into the Greater Melbourne Swamp.

To reconstruct the landscape or vegetation community to which these historical accounts allude, seems an impossible task today due to the grossly modified environment that now exists. The once winding chain of ponds will probably never be recreated fully. Due to increases in water flow and the expanding necessity for flood protection, it is unlikely that the engineering treatments carried out on the Creek will ever be fully removed.

So what can be done to restore the Moonee Ponds Creek to a more natural or acceptable state? This document provides practical guidelines on how to reinstate some of the values of the original vegetation communities of the Moonee Ponds Creek, given the now modified environment. These guidelines also define the overriding human influences such as safety, management regimes and recreational constraints that must be considered when undertaking any revegetation activity within the Moonee Ponds Creek Corridor.

The restoration of the Moonee Ponds Creek will be a slow, incremental and evolving process. This document will help ensure that those working on both large and small projects along the creek are guided by common standards, with one common goal in mind: the protection, restoration and expansion of indigenous vegetation along the creek and its tributaries

The Moonee Ponds Creek Coordination Committee

The formation of this document has been initiated by the Moonee Ponds Creek Coordination Committee (MPCCC). The Committee was founded in February 1998 to bring the key management agencies and other concerned groups together to work towards a uniform and coordinated management of the Moonee Ponds Creek Corridor. The Committee has membership from each of the four councils that abut the creek (Hume, Moreland, Moonee Valley and Melbourne), Friends of Upper Moonee Ponds Creek and the Moonee Ponds Creek Association. Melbourne Water is also represented.

In commissioning this document, the MPCCC is that it will be used by all agencies, groups, contractors and individuals as a resource to ensure the creation of a healthy, vibrant and broadly accepted waterway.

1. Purpose

This document has been prepared to give information on the type and historical distribution of indigenous vegetation suitable for revegetation throughout the Moonee Ponds Creek Corridor. This document is not intended to provide definitive direction on what should be where, but rather what may have been where, how to go about putting it back and issues for consideration when revegetating this urban creek land.

The key objectives of this document are to:

- Promote the use of indigenous species in the revegetation of the Moonee Ponds Creek;
- Identify where in the Moonee Ponds Creek landscape species may once have occurred;
- Advise on the suitability, their distribution and planting density of those species for revegetation;
- Discuss the propagation, establishment, maintenance and management implications of revegetation on the Moonee Ponds Creek;
- Discuss how these species might be used in both natural and cultural or contrived landscape applications;
- Identify the design considerations that need to be taken into account when revegetating the Moonee Ponds Creek ; and
- Provide a document that will be used to ensure a coordinated and consistent standard and style, or consensus of approach towards revegetation throughout the Moonee Ponds Creek corridor.

Methodology

Much of the information required to undertake this task has been provided through the background documents to the Moonee Ponds Creek Concept Plan (1991) and numerous other plans, strategies design guidelines and documents relating to the state and management of the Moonee Ponds Creek. Additional visits to remnant sites, literature study, discussions with representatives from the various management agencies and individuals from the wider community (through informal discussions, a facilitated workshop and comment on the draft document) have helped shape and formalise this document.

2. Key Management Agencies

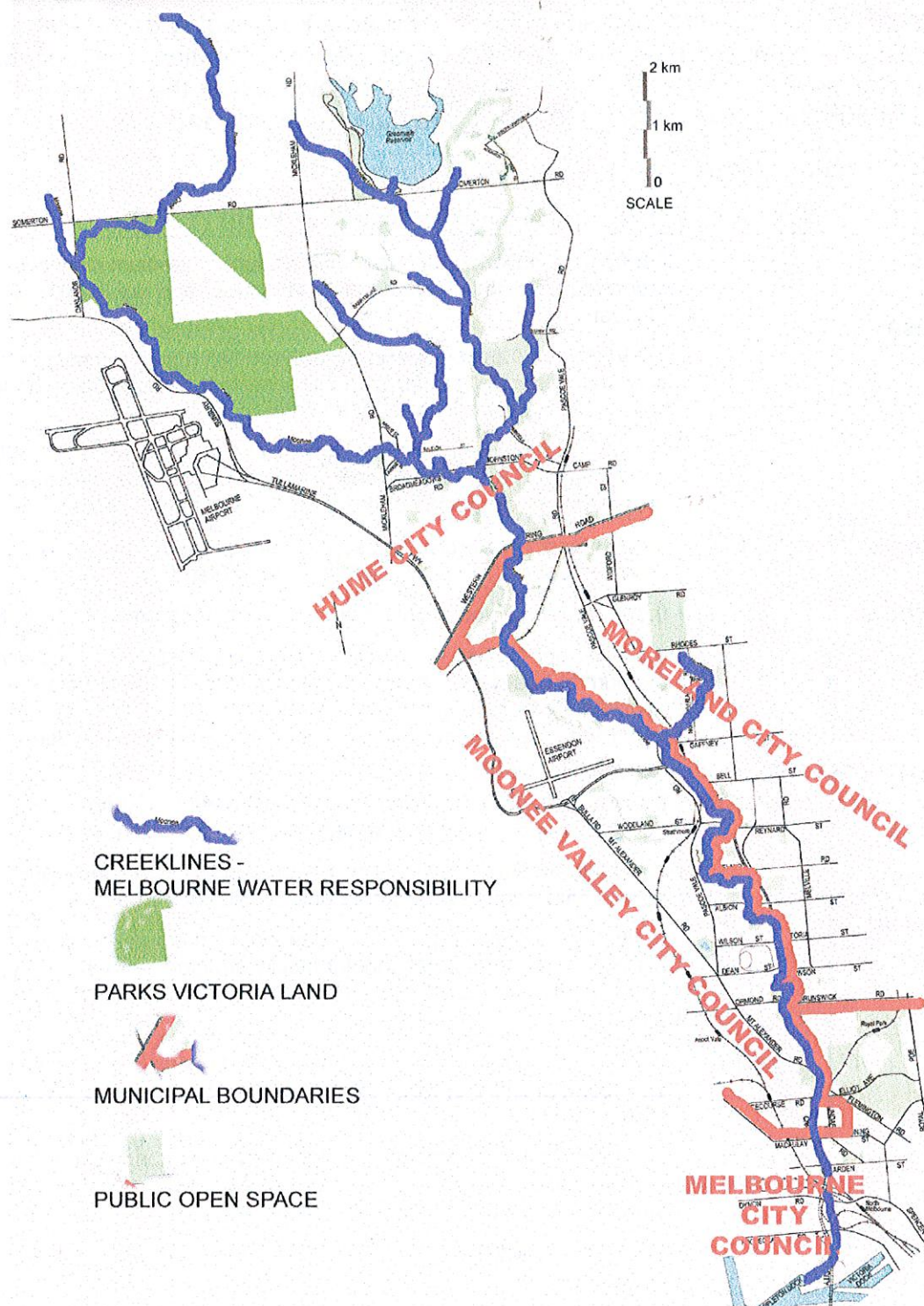
There are six key Management Agencies who are responsible for the public lands within the Moonee Ponds Creek Corridor, these are:

- Parks Victoria
- Melbourne Water
- Hume City Council
- Moreland City Council
- Moonee Valley City Council
- Melbourne City Council

NOTE: The Department of Natural Resources and Environment also play a key role in the management of lands throughout Victoria although they have not land directly under their management within the Moonee Ponds Creek Catchment. A number of other agencies may exist, although those listed are generally responsible for the day to day management of public lands throughout the Creek Corridor.

Figure 1 indicates the geographic areas of responsibility of each key management agency. Additional to these key agencies there are a number of smaller groups which have input into the management and development of the Moonee Ponds Creek Corridor (including VicRoads, Public Transport Authority, power, water and gas distribution and supply companies, the Melbourne Ports and Docklands Authorities and community groups).

Figure 1: Locality map and zones of key management agency responsibility



3. Factors influencing the distribution of vegetation within the Moonee Ponds Creek corridor

Plant or vegetation communities are groupings of plants that grow in areas with particular environmental parameters. The development and distribution of these groupings is affected by a wide range of parameters. In order to discuss what plant communities could be reinstated in particular localities it is important to realise the environmental variations of the Moonee Ponds Creek Corridor and the different environmental requirements of each vegetation community.

3.1 Soils of the Moonee Ponds Creek

Lloyd and Tonkinson (1991) use soil classification as a key guiding parameter for the distribution of a number of the vegetation communities they identify. The distribution maps of the seven soil types (brief descriptions below) within the Moonee Ponds Creek Corridor identified by Sargeant (1991) are detailed in **Appendix A**.

Table 1: Soil descriptions

Soil Type	Symbol	Description - taken from Sargeant (1991)
Dark Soils Derived from Basalt	Bc	<p>0-0.05/0.15m Dark grey or dark brown light to medium clay; pH 6-7; moderate to strong medium crumb structure; hard dry, slightly friable to plastic moist</p> <p>0.05/0.15-0.4/0.6m Dark grey to dark reddish brown medium to heavy clay; pH generally greater than 7; moderate to strong coarse angular blocky structure; very hard dry and firm moist</p> <p>0.4/0.6-1.0m Generally mottled brownish grey to brown medium to heavy clay; pH 8-9; nodular and/or soft calcium carbonate generally present; small fragments of basalt to stones of variable size.</p>
Sandy Soils on Granodiorite	Gsl	<p>0-0.1m Dark grey-brown fine sandy loam or sandy loam; pH 6; weak crumb structure; hard dry, slightly friable moist</p> <p>0.1-0.3/0.5m as above but paler in colour and sporadically bleached</p> <p>0.3/0.5-1.0m Mottled grey, yellow-brown and frequently red-brown medium to heavy clay, frequently sandy; pH 6-7. The structure and consistency in the upper part of this horizon is medium blocky and it is very hard when dry and plastic moist. The soils generally become sandier with depth.</p>
Fine Sandy Loam Soils on Silurian Sediments	Sfsl	<p>0-0.1m dark greyish brown or dark grey-brown fine sandy loam; pH 6; weak coarse crumb structure; hard dry, slightly friable moist</p> <p>0.1-0.3/0.4m Dark greyish brown or grey-brown fine sandy loam; sporadically bleached; structure and consistency as above</p> <p>0.3/0.4-1.0m Mottled grey and yellow-brown medium to heavy clay; pH 7-8; moderate coarse angular blocky structure; very hard dry, firm and plastic moist. Decomposing rock generally encountered after 0.8m</p>
Valley Sandy Duplex Soils	Vsd	<p>0-0.3m Dark grey-brown or grey-brown fine sandy loam or fine sandy clay loam; pH 5.5-6.5; weak coarse crumb structure, hard dry, slightly friable moist</p> <p>0.3-0.8m Dark grey brown to mottled grey brown and yellow medium clay, frequently sandy; pH 6-7.5; moderate to strong coarse blocky structure, very hard dry, firm and plastic moist</p> <p>0.8-1.0m Generally clay or sandy clay textures; occasionally with gravel</p>

Valley Clay Soil	Vc	<p>0-0.2/0.3m Dark grey or dark brownish grey cracking medium to heavy clay; pH 6-7; moderate to strong coarse angular blocky structure; hard dry and firm and plastic moist</p> <p>0.2/0.3-1.0m Mottled grey, yellowish grey and yellow brown medium to heavy clay, occasionally silty; pH 7-8.5; often with fine concretions of calcium carbonate. Colours generally become slightly yellower and browner with depth</p>
Estuarine Soils	Ec	Original soils described as silt, silty clay, sandy clay, dark grey, minor peat and shell beds. All original soil has been covered by fill generally containing small basalt rocks, screenings and subsoil clay. PH of both fill and natural materials ranged between 6.5 and 7.5
Disturbed Soils	Dm	<p>The nature of material deposited varies greatly and ranges from large rocks and boulders from quarries and construction sites, rubble from construction sites and clay deposits, generally subsoil clay. Three subsets of this soil type have been mapped as:</p> <p>Dr Deposits mostly comprising large rocks and rubble</p> <p>Ds Deposits mostly comprising stone and rubble</p> <p>Dc Deposits mostly comprising clay</p>

3.2 Disturbed Soils

An attempt at defining what vegetation communities may have occurred on the various soil types is given in Table 2. Within the Moonee Ponds Creek Corridor there are numerous sites that present altered soil types and profiles (i.e. reclaimed land, landfill sites etc). Where such conditions exist it is recommended that efforts to define suitable species for revegetation be based on

1. The surrounding undisturbed / original geomorphology;
2. Available water;
3. Place within the landscape; and
4. Experimentation or past experience and successes.

3.3 Water

Available water is another major factor in the ability of plant species to establish or extend their range. As rainfall varies only marginally within the Moonee Ponds Creek Corridor. Drainage processes and aspect are more likely to impact upon distribution of vegetation communities. For example the distribution of Marsh Club Rush (*Bolboschoenus medianus*) is restricted to wetland or drainage line areas as it requires ample moisture to survive.

4. Main vegetation communities in the Moonee Ponds Creek corridor

For the purposes of this document nine main vegetation communities* (with associated blends of ecotones and sub communities) will be discussed. These are based on remnant plant communities. Potentially they are also "character" or "reference" communities which may drive the restoration objectives with due consideration of the site changes. These nine communities are:

- 1 Woodlands (*Eucalyptus camaldulensis*)
- 2 Woodlands (*Eucalyptus melliodora* – *E. microcarpa*)
- 3 Riparian Woodland/Open Forest (*E. camaldulensis* – *E. viminalis*)
- 4 Grassland Complexes (*Themeda*, *Austrostipa*, *Danthonia* spp)
- 5 Swamp Grassland (*Poa labillardierei*)
- 6 Riparian Scrub (*Acacia paradoxa* – *Bursaria*)
- 7 Escarpment Vegetation (*Bursaria* – *Acacia implexa*)

8 Saltmarsh Complex

9 Aquatic/ Amphibious complex

NOTE: Lloyd and Tonkinson (1991) identified 12 vegetation communities within the Moonsee Ponds Creek Corridor. For the purposes of this document the Dry Grassland Communities (4, 5 & 6) have been combined, and Unclassified Exotic Vegetation (Community 12) has been excluded due to it being an undesirable or inappropriate vegetation type for revegetation objectives of this document.

Table 2: Soil type/vegetation community relationships as identified by Sargeant (1991) and Lloyd and Tonkinson (1991)

NOTE: Disturbed Soils excluded, see comments re altered soil profiles in Section 3 – Disturbed Soils.

Vegetation Community		Dark Soils Derived from Basalt	Sandy Soils on Granodiorite	Fine Sandy Loam Soils on Silurian Sediments	Valley Sandy Duplex Soils	Valley Clay Soil	Estuarine Soils	Dominant Plant species (An expanded listing of species in each vegetation community is detailed in Appendix A.)
1	Woodlands (<i>E. camaldulensis</i>)		X			X		<i>Austrostipa</i> spp. <i>Austrodanthonia</i> spp. <i>Brachyscome</i> spp. <i>E. camaldulensis</i> <i>Themeda triandra</i>
2	Woodlands (<i>E. melliodora</i> – <i>E. microcarpa</i>)		X	X	X	X		<i>E. melliodora</i> <i>E. microcarpa</i> <i>Acacia implexa</i> <i>Ac. mearnsii</i> <i>Ac. melanoxylon</i> <i>Ac. paradoxa</i> <i>Ac. pycnantha</i> <i>Austrodanthonia</i> spp.
3	Riparian Woodland/ Open Forest					X		<i>Ac. mearnsii</i> <i>Ac. melanoxylon</i> <i>E. camaldulensis</i> <i>E. viminalis</i> <i>Poa labillardierei</i> <i>Lomandra longifolia</i>
4	Grassland Complexes	X				X		<i>Austrodanthonia</i> spp. <i>Austrostipa</i> spp. <i>Brachyscome</i> spp. <i>Eryngium ovinum</i> <i>Stackhousia monogyna</i> <i>Themeda triandra</i>
5	Swamp Grassland	X			X	X	X	<i>Agrostis aemula</i> <i>Eleocharis acuta</i> <i>Poa labillardierei</i> <i>Schoenus apogon</i>

6	Riparian Scrub		X		X	X		<i>Ac. mearnsii</i> <i>Ac. Melanoxylon</i> <i>Ac. paradoxa</i> <i>Bursaria spinosa</i> <i>Goodenia ovata</i> <i>Poa sieberiana</i> <i>Solanum laciniatum</i>
7	Escarpment Scrub			X				<i>Ac. implexa</i> <i>Allocasuarina verticillata</i> <i>Bursaria spinosa</i> <i>Cassinia arcuata</i> <i>Correa glabra</i> <i>Dodonaea viscosa</i> <i>Hymenanthera dentata</i> <i>Myoporum viscosum</i>
8	Saltmarsh Complex						X	<i>Bolboschoenus caldwellii</i> <i>Disphyma crassifolium</i> <i>Isolepis nodosa</i> <i>Sarcocornia quinqueflora</i>
9	Aquatic/ Amphibious complex	X			X	X		<i>Bolboschoenus medianus</i> <i>Carex appressa</i> <i>Crassula helmsii</i> <i>Triglochin procera</i>

5. Remnant Vegetation

There are a number of remnant vegetation sites throughout the Moonee Ponds Creek Corridor, including the escarpment community at Union Street, West Brunswick, the Mitchell Parade escarpment, Strathnaver Grasslands, Woodlands Historic Park and numerous individual Red Gums throughout the Cambridge Gardens Estate development in the north of the catchment. It is not the intention of this document to discuss the management of remnant vegetation directly, although revegetation works, when undertaken in accordance with this document, will assist the health and viability of these isolated remnants. The future viability of all remnants is very important to the process of revegetating the Moonee Ponds Creek Corridor as these sites provide a point of reference for future revegetation and the most appropriate seed and propagation material sources for those activities.

The provision of indigenous vegetation buffers around remnant sites can effectively reduce the edge to area ratio of the remnant. This will create a zone of revegetation, aiding weed management within the remnant vegetation. The reduction of this ratio is important to management practices as the lower the ratio the less opportunity weed have to invade from the boundaries (see Figure 2 – edge to area ratios). The enhancement of remnant vegetation areas through revegetation is also important in building links and joining isolated remnants. This will effectively increase the habitat and ecological value of the remnant "node" by increasing its connectivity with other areas.

Recommendation

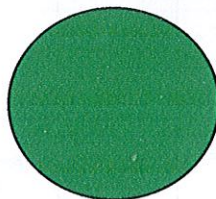
Existing remnants be expanded and fortified through revegetation activities along the boundaries of those remnant areas

Figure 2: Edge to area ratios

Edge (sum of all sides) : Area (length X width)



Narrow, linear beds provide more opportunity for weeds to invade from the edges



Optimal shapes include larger blocks such as squares or circles

6. The revegetation of the Moonee Ponds Creek corridor

On first impression the broad concept of revegetation:- to find out what vegetation was once present, and where possible or appropriate, to attempt to reestablish it; sounds an easy enough task. However, revegetation in the long term can become extremely complex when all the cultural as well as environmental issues are considered. The highly modified nature of much of the creek will also complicate efforts.

Thorough planning is recommended for any planting project. This should involve site selection, indigenous species selection, design of ecologically sympathetic plantings, collection of local seed for plant production, obtaining good quality planting stock, site preparation including weed control and options of protective fencing, vermin control and ongoing maintenance.

There are a number of key points that need to be approached when undertaking a revegetation activity. These are :

Table 3 - Key points to address when planning your revegetation activity

	Questions to be asked	Relevant section of this document
Land Managers & Key Stakeholders	Who is the land Manager that needs to permit works? Are there any other stakeholders that need to be consulted?	Section 2

Site assessment	Is the site appropriate for a revegetation activity? What landscape approach should be taken? Are there any social/management constraints to consider?	Section 6.1, 6.2 & 8
Project Budget	How much money do I have? How can I get the best bang for my buck?	Section 6 Appendix D
Identification of vegetation community	Which vegetation type should we be trying to reestablish at this site? What indigenous species are within that vegetation community?	Section 4,5 & 7 Appendix B
Site design	What is the most appropriate way to revegetate this site? How do I layout the plants to best replicate the desired vegetation community?	Section 6.1, 6.2, 6.3 & 7, Appendix B & D
Site preparation	How do I go about preparing the site to obtain the highest quality outcome?	Section 6.4, 6.5, 6.6, 6.7 & 6.8
Seed collection/plant sourcing	Where do I get my planting material from?	Section 6.6 , 6.7 & 6.8 Appendix C & D
Vegetation establishment	Should I plant tubestock, cells or direct seed? Is manual planting the only approach? Do I need to guard or fence?	Section 6.6 , 6.7 & 6.8 Appendix B & C
Follow up weed control and Maintenance	What are the sites key weed issues? How should I tackle them? How often will maintenance need to be undertaken after plant installation?	Section 6.9, 6.10 & 6.11 Appendix C & D

6.1 Cultural landscape or ecological landscape

Throughout the Creek Corridor there have been two obvious methodologies in reinstating vegetation, a cultural landscape approach and a habitat or ecological style approach; both have their merits.

The cultural landscape approach, or placement of plants to achieve a planned installation to achieve cultural, artistic or visual outcomes can be equally valuable as an ecological planting if indigenous plants are the main theme of the installation. With specific regard to the Moonee Ponds Creek Corridor there are numerous instances where more designed or contrived installations are appropriate. This can be due to the constrained nature of the site, its cultural meaning or the wider landscape intent of the area (i.e. the site may contain view lines that are to be retained).

An ecological or habitat landscape installation is one which is intended to replicate the natural value of the site. This can be achieved through two key processes:

1. A two pass process of first installing the structural components of the desired vegetation (through the placement of discrete trees, see **Section 6.3**) and then following up in a number of years with the planting of the shrub and ground flora; or
2. Creation of a copse or bed planting that has representation from the majority of species from the desired vegetation community.

6.2 Strategic documents and directions

The document that currently sets the strategic directions and priorities for the revegetation of the Moonee Ponds Creek is the Moonee Ponds Creek Concept Plan (1992). Melbourne Water's *Moonee Ponds, Attwood and Yuroke Creeks Waterways Management Activity Plan* (1998) and the *Moonee Ponds Creek Landscape Revival Strategy Report* (1998) bring to the Moonee Ponds Creek and its tributaries a more recent direction. A comprehensive list of planning documents specifically for the Moonee Ponds Creek is given in **Appendix E**.

These plans give a certain level of direction for future revegetation activities but liaison with the relevant Land Manager is an essential step in any revegetation activity.

Recommendation

Consult with the relevant land manager and existing strategic planning documentation when planning any revegetation activity.

6.3 Site selection, design and layout

Site selection, design and layout is critical to the viability of the planting and its management. The actual selection of your revegetation site will need to be done in association with the appropriate land manager (see **Section 2**) and will be guided by the strategic planning documentation listed in **Appendix E**.

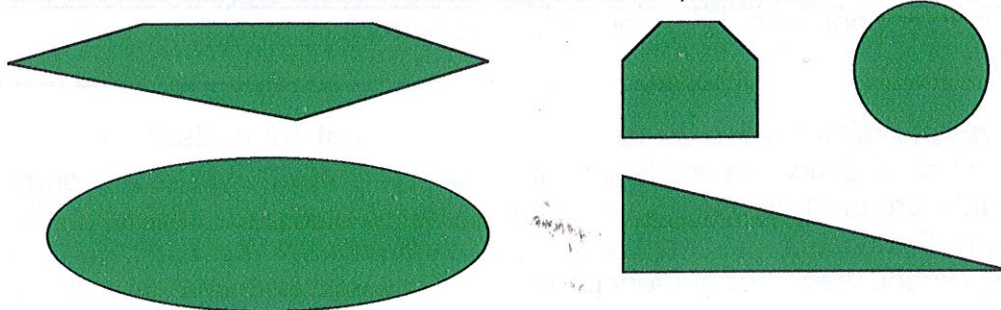
An element that should play heavily on the selection of revegetation sites is how their revegetation will reduce maintenance inputs over time. This principle is discussed further in **Section 6.10**. Spaces that are inherently difficult to manage (eg. steep batters, uneven ground, boggy areas and escarpments) are key examples where revegetation can reduce maintenance inputs.

The design of your planting will have to be responsive to the intent of the planting (is it a cultural landscape approach or a habitat or ecological style approach), the nature of the site and ongoing maintenance regimes.

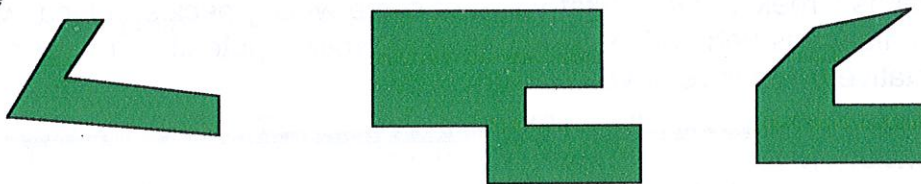
In the context of the habitat or ecological style approach, elongated beds with tapered ends are far more desirable than square ended beds where slashers have to reverse to complete their task. Similarly large or irregular shaped beds should give the same consideration to the cornering and maneuvering of grass maintenance machines and access for weed management crews.

Figure 3: Irregular shapes that do and don't allow for easy vehicle maneuvering

DO – bed shapes with external angles or curves that allow for the turning circle of maintenance vehicles and flow lines that maintenance vehicles can follow are preferential



DON'T – bed shapes with internal angles that require reversing and extensive maneuvering are undesirable



As discussed in **Section 5** a key consideration in any vegetation management or installation situation where beds or copses of vegetation are found is the edge to area ratio and its reduction to limit opportunities for weed invasion from the bed/remnant perimeter.

The constrained and highly modified nature of the Moonee Ponds Creek will directly influence the shape of your revegetation bed. Similarly the topography and level of flood proneness will influence the design (bed shape, mulching/weed mat) and layout (plant selection and placement). Following sections detail these issues further.

The concept of a two pass process where discrete plants are installed and follow-up works in the future build on those plantings with the shrub and ground flora does have specific merit where broad exotic grassed landscapes are to be revegetated. This process allows us to, at the minimum, get the "bones" back with the intent of adding the "flesh and blood" later.

Even if the intent is to produce an open woodland of indigenous trees with an exotic grass understorey, it is important that there is some ecological value through the provision of nesting sites, food source and shading of the instream habitat. This example becomes particularly relevant in the Moonee Ponds Creek Corridor where the opportunities for revegetation is constrained by the narrowness of the reserve or where flow rates need to be maintained to ensure the security of neighbouring properties from flood.

Recommendation

Bed shape and placement should be considerate of the future movement of maintenance vehicles.

Individual or discrete trees should be at a minimum of 5 metre spacings to allow for the movement of tractors through the revegetation area.

Actual layout or placement of plants within a revegetation area must be thoughtful of each species appropriate place in the landscape (see **Section 7-** Typical Creek/Vegetation cross sections and **Appendix B**), and the potential for the individual plant to impact upon park users or nearby infrastructure (see **Section 8-** Constraints and Consideration).

6.4 Site preparation - weed control

Weed control is critical in achieving high survival and growth rates, particularly if planting into areas of competitive exotic species such as Phalaris, Artichoke Thistle, Kikuyu and Couch Grass. Weeds can cause permanent damage by out-competing seedlings (direct seeded or nursery grow stock) for moisture, nutrients and light.

An important consideration for weed control and or removal in the context of the Moonee Ponds Creek is the habitat value of some weed species to local wildlife (due to lack of indigenous vegetation cover) and the erosion potential of near stream soils when vegetative cover is removed.

Recommendation

Large areas of weeds that provide habitat (species such as Boxthorn and Blackberry) be removed in a staged approach spanning a number of years so that wildlife habitat can be replaced by indigenous plantings. Additionally, thorny plants (eg. Boxthorn) can be killed in situ and left standing. By doing this, and revegetating around the dead weed species that plant structure can be retained to provide a wider range of habitat opportunities for local fauna.

Weeds are best killed prior to planting using either non-chemical or chemical means, an ideal timeframe would allow weed control activities to commence two seasons prior to planting. This staging is important in achieving control of weed species that are active in both winter and summer seasons.

Non-chemical weed treatments include mulching/smothering, hand removal, fire, steam, slashing, topping, solarisation and ringbarking. Each of these techniques can be effective in their own right or in combination if the weeds are susceptible, and the treatment is carried out correctly and at the right time. An integrated weed management approach is best.

Recommendation

Weed control (chemical or non-chemical) for new revegetation beds be given sufficient time to allow for treatment of both cold and warm season weeds.

There are many types of herbicides which are categorised according to how their active ingredient works to kill the plant (contact, translocated, selective and residual herbicides). No matter what chemical is being applied, it should only be used in accordance with the manufacturers instructions. Uses other than those specified by the manufacturer (known as "Off Label Uses") may result in detrimental effects, which the user (not the manufacturer) will be held responsible for.

As many chemicals require time to take effect you should allow for this (consult the manufacturers instructions) before further site treatment (i.e. mulching) and planting. A combination of knockdown (translocated or selective) and residual (*see note below)

herbicide followed by a mulch treatment can keep revegetation areas weed free for up to one year.

**NOTE: The use of residual herbicides adjacent to watercourses or on very sandy soils is not recommended due to the chance of the chemicals leaching from the site of application and into adjoining areas.*

The use of chemicals in the treatment of weeds should be approached with care. It is strongly recommended that two separate courses be completed before any chemical handling take place: Farm Chemical Users Course (FCUC) & First Aid Course (Minimum of Level 2). The FCUC is offered by a number of Agricultural and Horticultural Colleges and TAFE Institutes as well as private vocational training bodies. The completion of this course and licensing is a statutory requirement for the use of a number of chemicals (Schedule 7 rating) that are used to treat weeds. The First Aid Course (Level 2) is offered by a number of providers.

Contact

Information on chemical licensing and permit requirements can be obtained from the Department of Human Services – Regulatory & Administrative Support Program on 9637 4156.

Additional information on the use of the range of herbicides available to treat weed problems can be sought from the Department of Natural Resources and Environment's, Chemical Information Service on 9210 9379.

6.5 Site preparation - mulching

In the past a wide range mulch treatments have been used throughout the Moonee Ponds Creek Corridor. These have included Jutemat (an organic based product) squares for individual trees, Jutemat rolls for revegetation beds on steep slopes, woodchip based mulches (a wide range of organic sources including street tree prunings, Eucamulch, recycled timber & pine flake mulch have been used) and woven polythene weedmat. All have their advantages and disadvantages and should be selected to best suit the site conditions and objectives.

Figure 4 –Jute based weed matting on steep batters



The variety of mulch treatment use in the past has led to a sense of discontinuity when traversing the Moonee Ponds Creek Corridor. This is especially prevalent when woven synthetic products have been used on the creek bank directly opposing revegetation beds treated with organic based mulches. It is for this reason, and the fact that the synthetic products have a very long field life (that can result in damage to the establishing vegetation), that consistency of product be considered when revegetating different sections of the creek. Mulches should not be used where there is existing indigenous understorey species which may be compromised either by smothering or through nutrifying the soil.

Mulch treatment, no matter what type, should be applied to the prepared revegetation site once the herbicide/weed treatment has taken effect. If organic, chip based mulches* are to be used it should be applied to a depth of no less than 7cm, an optimal depth is 10cm (variation in depth of mulch is related to particle size, a thick layer of fine particle size mulch can lead to soil deoxygenation problems). For additional weed suppression a layer of newspaper (10 sheets as a minimum) can be placed beneath the mulch.

** NOTE: The use of fresh, or un-aged organic mulches have been seen to result in a "nitrogen draw down" effect the can lead to establishment problems.*

Recommendation

A standardised approach to mulches be adopted within the Moonee Ponds Creek Corridor and only organic based mulches and Jute based products be used.

Specification

Organic, chip based mulches are to be used it should be applied to a depth of no less than 7cm, an optimal depth is 10cm

Recommendation

For areas of regular inundation by floodwaters or on a steep slope or batter, chipped mulches are not suitable due to their mobility. Jute based products that can be pinned down would be more suitable.

Specification

Jute based weed matting of greater than 750+gm/m² fixed in place with 3-4 steel pins (at or longer than 2000x25x200mm by 4.0+mm diameter) per square metre.

6.6 Species selection

Indigenous species when returned within their original range, require little maintenance inputs as they are already adapted to local soils and climate and are likely to be self-regenerating. Local indigenous species also benefit local wildlife, and preserve the unique character of the local landscape. As it is the purpose of this document to advocate the re-establishment of indigenous vegetation, exotic vegetation is not considered although it may have a role for historical, landscape or recreational purposes. **Appendix A** provides a list of species appropriate for revegetation on the Moonee Ponds Creek and also defines which species should occur where.

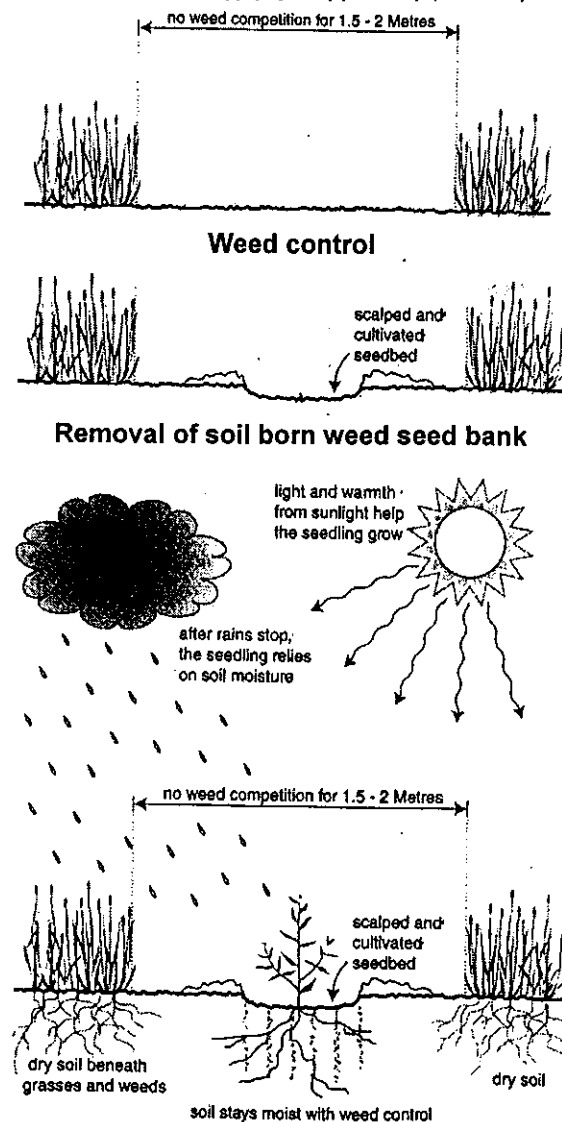
It is important that planting efforts work towards achieving ecologically sustainability, both to optimise the health and longevity of the planting and to maximise the plantings

ability to regenerate. Clumps or multi-rowed belts of trees and shrubs are likely to remain healthy longer than single trees, as they provide better habitat for natural predators of insect pests and are better protected from wind.

6.7 Direct seeding

Direct Seeding may be an efficient and cost effective alternative to traditional nursery grown plant stock in some areas of the Moonee Ponds Creek Corridor. The principal of direct seeding is to take the process of vegetation establishment back one or two steps from the traditional nursery grown stock planting. Following a well planned weed control program and site preparation, (site preparation is usually restricted to scalping to remove soil born weed seed but in some areas cultivation, mounding and/or ripping are applied), seed is placed directly on the revegetation site to germinate (a typical timeline for a direct seeding activity is provided in **Appendix B**). Often the bed preparation and seed dispersal is completed by a single pass, purpose built tractor or trailer mounted machine. This process results in linear plantings, but by criss-crossing the path of the machine a more random result can be achieved.

Figure 5 – Principles of direct seeding (spray, scalp, seed)



Good weed control, removal of weed seed bank through scalping of site and application of desired seed are the key steps to successfully direct seeding a site

A variation to this mechanical process, "Hand Direct Seeding" or "Niche Seeding" has been developed by Greening Australia Victoria and implemented in a number of rainfall zones and soil types with good success. The principals are the same but rather than the bed preparation and seed dispersal being delivered by a machine the process is undertaken by hand. The key advantage of "Niche Seeding" is that it can be undertaken in areas where machinery cannot go (i.e. steep slopes and constricted areas) and produces random plant placements.

Figure 6 – results of hand direct seeding



The advantages of direct seeding include:

- The cost of establishment per plant is almost always much lower than planting nursery grown stock
- Excellent root development occurs, with root to shoot ratios sometimes 10:1, making the plant far more stable and drought tolerant
- Establishment of a far greater number of plants in a days activity when compared to traditional planting processes
- Results in a more random spacing of plants, thus a more "natural" looking planting is produced

One of the critical factors to the success of direct seeding that can be controlled is an effective weed control program prior to sowing. Obtaining a weed free environment prior to sowing will assist in the harvesting of all soil moisture by the desired seed. Weed competition and lack of soil moisture is often the cause of direct seeding failing.

Other issues that need to be considered when deciding whether to direct seed or use nursery grown stock include:

- The suitability of species for direct seeding (**Appendix A** indicates species within the Moonee Ponds Creek Corridor that are suitable for direct seeding)
- The availability of adequate seed stocks (direct seeding requires larger amounts of seed to produce the same number of plants when compared to nursery growing processes)
- Plant spacing is more difficult to control when using mechanical direct seeders
- The lack of post sowing rainfall is uncontrollable and could affect the results (as with Tubestock planting but to a greater degree)
- If there is a potential grazing issue by vermin, vermin proof fencing or a well programmed vermin control program should be implemented to limit the impact on seedling establishment.

Contact

Greening Australia Victoria can provide more technical information and assistance with a direct seeding program.

Ph. 9457 3024

Fax. 9457 3687

Email: general@gavic.org.au

6.8 Nursery grown plants

Nursery grown plant stock can vary from forestry tubes, cells, bare rooted plants or mature plants. Smaller more vigorously growing plants will suffer little transplanting shock, and usually outgrow more advanced nursery stock within a couple of years.

The acquisition of good quality planting stock is essential for good results. Plants should be ordered well in advance to the intended planting date to allow adequate seed collection and growing time (a typical nursery grown stock planting timeline is provided in **Appendix B**). Many nurseries grow indigenous plants (key suppliers for the Moonee Ponds Creek Corridor are listed in **Appendix C**), and will often grow locally collected seed if you can provide it. Greening Australia Victoria's Melbourne Indigenous Seedbank may be able to assist with seed storage and supply for your revegetation project. Good quality seedlings exhibiting active growth, should be free of pests and diseases and labelled identifying species and source (provenance). Nursery grown plant stock should have a root-to-shoot ratio between 1:1 and 1:2.

Recommendation

Plants for a spring planting process should be ordered no later than the end of March in the same year.

Plants for a autumn planting process should be ordered no later than the end of November in the year previous.

The decision to guard or fence your nursery grown plant stock will be dependent on pressures placed on the planting by vermin (through grazing), exposure of the site to high winds (which can desiccate the plants rapidly) and the level of protection required from stock or pedestrian traffic.

6.9 Maintenance

Follow-up maintenance is as critical as initial weed control and ideally means keeping the area within a 50cm radius of each seedling free of any competitive weeds for at least their first year. This is imperative for the same reasons given for undertaking

weed control at the outset of the revegetation activity, reducing competition for water, light and nutrients.

Recommendation

A weed free environment to a minimum of 50 cm radius be maintained around each seedling for at least a year following establishment.

Typically, the maintenance of revegetation beds should be undertaken through herbicide application by skilled operators (see notes in **section 6.4 Site Preparation – Weed Control**). The timelines provided in **Appendix B** for both nursery grown stock planting and direct seeding detail the ideal maintenance regime/timeframe.

6.10 Using revegetation regimes to reduce management inputs over time

A developing need in the field of revegetation and native vegetation management is the ability of the vegetation beds to be self-sustaining and require minimal ongoing management inputs. Results of landscaping attempts at instituting a monoculture of densely planted grasses or rushes to effectively provide a 100% foliage cover have been of varying success. More often than not the canopy closure has been incomplete and invasion by intractable and opportunistic weeds has still occurred. The establishment of root systems that occupy soil space may play as great if not a greater role than canopy closure. Works in the Corangamite region with serrated tussock (*Nasella* spp.) management through planting of *Acacia* and Eucalypt species has shown promising results in out-competing and managing this aggressive weed species.

The revegetation of the Moonee Ponds Creek Corridor will inevitably have a variety of landscape treatments from the use of monoculture style plantings to copse or habitat plantings which provide greater ecological value. The concept of obtaining maximum desirable vegetation cover to create an environment in which weed competition is reduced due to limited light, water, nutrients is a model which has informally been in use for many years by land management agencies who effectively "overplant" their revegetation beds.

With plant mixes of trees, shrubs and grasses being installed at, or over densities of one plant per square metre in copse style plantings the long term maintenance of the planting can be reduced significantly.

A rigorous weed management regime in the first two or three years of establishment needs to be enforced to keep weed competition to a minimum. Thereafter weed control on the boundary of the planting area at two to three month frequencies and in the internal bed area once a year if not a longer interval should provide adequate weed control.

This concept of managing the available plant resources needs to be carried out in conjunction with the active management of weed species until the desirable vegetation is well established. A prerequisite to this principal is excellent weed control at the outset of the activity.

6.11 Degree of difficulty in reestablishment and maintenance of revegetation by vegetation community

The following table identifies the relative difficulties in establishing particular vegetation communities and thereby eludes to the likely maintenance requirements of each vegetation type during the initial plant establishment period (i.e. the first 2 – 3 years).

Table 4 : Degree of difficulty in reestablishment and maintenance of revegetation by vegetation community

Degree of difficulty	Vegetation Community	Intractable weeds	Weed Colonisation	Erosion	Nutrients	Fire	Hard Rubbish
Very High	Riparian Woodland/ Open Forest	H	M	M	H	L	M
	Aquatic/ Amphibious complex	L	M	H	H	L	M
	Swamp Grassland	L	H	M	H	L	L
	Grassland Complexes	M	H		L	H	L
	Riparian Scrub	H	M	M	M	L	M
Low	Woodlands (<i>E. melliodora</i> – <i>E. vimminalis</i>)	H	M	L	L	M	L
	Woodlands (<i>E. camaldulensis</i>)	M	M	L	M	L	L
	Saltmarsh Complex	L	M	L	M	L	L
	Escarpment Scrub	M	L	M	L	L	L

The success of your revegetation activities will depend upon thorough planning; attention to site and species selection; design of ecologically diverse plantings, and the acquisition of good quality planting stock. Additionally, the level of weed control and protection from other pressures will have a large impact on the success of the revegetation.

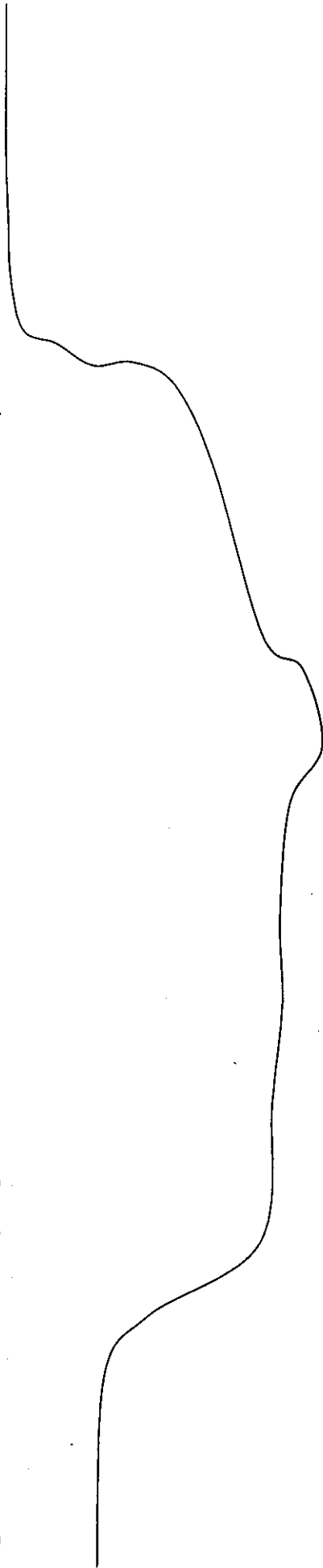
7. Typical creek/vegetation cross sections

In the earlier sections of this document the principal that certain species occur in particular locations, due to environmental factors including soil type, available water and topography was introduced.

Figure 7 below aims to provide a reference point for the key vegetation communities that would occur within different topographic locations throughout the Moonee Ponds Creek Corridor. **Figures 8 - 12** give graphic representations of the different landscape characters possible in the various creek sections. Each creek section has been defined by the overriding topographic creek form of that section (i.e. semi natural, rock beached trapezoid, concrete lined trapezoid, concrete lined trapezoid with low flow channel and grass lined trapezoid with low flow channel).

A full indigenous species and their presence in each vegetation community is given in **Appendix A**.

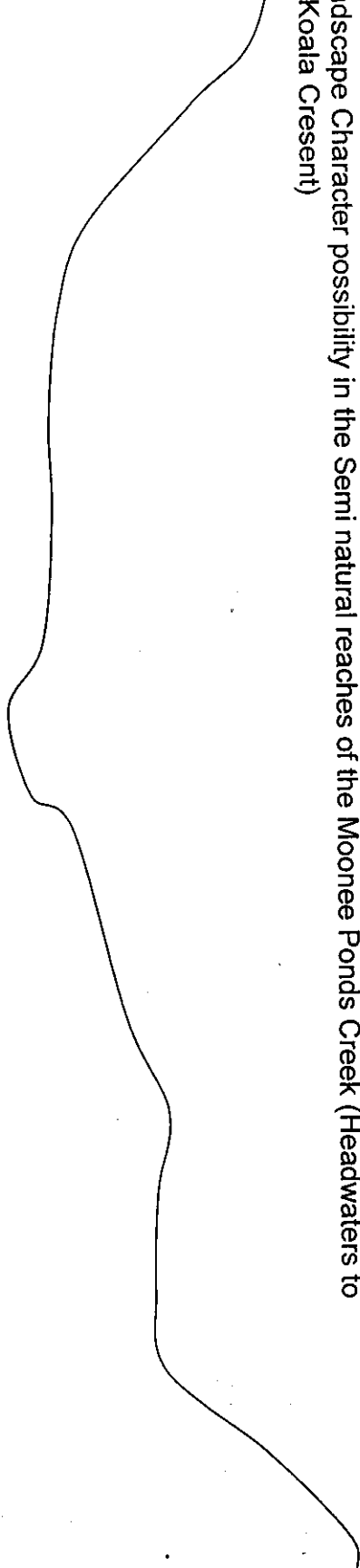
Figure 7 – Location of the key vegetation communities in the Moonee Ponds Creek Corridor Landscape



Grassland Complexes	Grassland Complexes	Aquatic / Amphibious complex	Grassland Complexes	Escarpment Vegetation
Woodlands (<i>E. camaldulensis</i>)	Woodlands (<i>E. camaldulensis</i>)	Riparian Woodland / Open Forest	Woodlands (<i>E. camaldulensis</i>)	Grassland Complexes
	Riparian Woodland / Open Forest	Open Forest	Riparian Woodland / Open Forest	
	Riparian Scrub	Riparian Scrub		
	Swamp Grasslands			

Woodlands(*E. melliodora* – *E. viminialis*) – restricted to Sandy Granitic soils
Saltmarsh Complex – only on Estuarine Soils

Figure 8 – Landscape Character possibility in the Semi natural reaches of the Moonee Ponds Creek (Headwaters to approximately Koala Crescent)



A community education program to encourage residents to remove invasive weeds and plant out beneficial indigenous plants could be applied to increase the ecological values of the area.				
<i>Acacia acinacea</i> <i>Acacia implexa</i> <i>Acacia paradoxa</i> <i>Allocasuarina verticillata</i> <i>Bursaria spinosa</i> <i>Dianella revoluta</i> <i>Einadia nutans</i> <i>Eryngium ovinum</i> <i>Eucalyptus camaldulensis</i> <i>Goodenia ovata</i> <i>Goodenia pinnatifida</i> <i>Lomandra filiformis</i> <i>Stackhousia monogyna</i> <i>Wahlenbergia gracilis</i>	<i>Acacia mearnsii</i> <i>Acacia melanoxylon</i> <i>Bursaria spinosa</i> <i>Eucalyptus camaldulensis</i> <i>Eucalyptus ovata</i> <i>Goodenia ovata</i> <i>Lomandra longifolia</i> <i>Bolboschoenus spp.</i> <i>Carex appressa</i> <i>Eleocharis acuta</i> <i>Triglochin procera</i>	<i>Acacia acinacea</i> <i>Acacia implexa</i> <i>Acacia paradoxa</i> <i>Allocasuarina verticillata</i> <i>Bursaria spinosa</i> <i>Dianella revoluta</i> <i>Einadia nutans</i> <i>Eryngium ovinum</i> <i>Eucalyptus camaldulensis</i> <i>Goodenia ovata</i> <i>Goodenia pinnatifida</i> <i>Lomandra filiformis</i> <i>Stackhousia monogyna</i> <i>Wahlenbergia gracilis</i>	<i>Acacia acinacea</i> <i>Acacia implexa</i> <i>Acacia paradoxa</i> <i>Allocasuarina verticillata</i> <i>Austrostipa spp.</i> <i>Bulbine bulbosa</i> <i>Bursaria spinosa</i> <i>Correa glabra</i> <i>Dodonaea viscosa</i> <i>Kennedia prostrata</i> <i>Myoporum viscosum</i> <i>Poa spp.</i>	

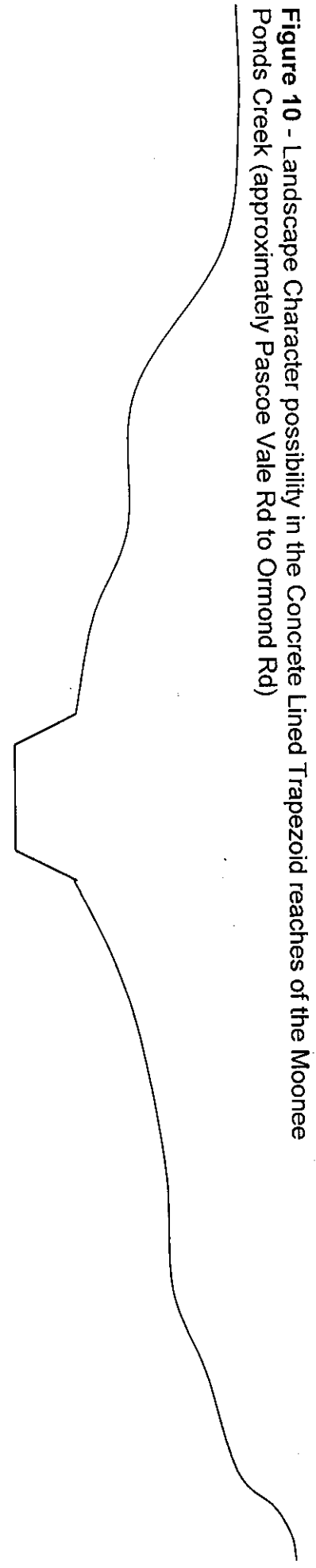
NOTE: In areas of Trapezoid creek profile discussions with Melbourne Water should be engaged to investigate the future possibility of creek bank reprofiling for layback and weir structures.

Figure 9 - Landscape Character possibility in the Rock Beached Trapezoid reaches of the Moonee Ponds Creek (approximately Koala Crescent to Pascoe Vale Rd)

<p>A community education program to encourage residents to remove invasive weeds and plant out beneficial indigenous plants could be applied to increase the ecological values of the area.</p>	<p><i>Arthropodium strictum</i> <i>Brachyscome</i> spp. <i>Bulbine bulbosa</i> <i>Chloris truncata</i> <i>Danthonia</i> spp. <i>Eucalyptus camaldulensis</i> <i>Eucalyptus meliiodora</i></p>	<p><i>Acacia acinacea</i> <i>Acacia implexa</i> <i>Acacia paradoxo</i> <i>Allocasuarina verticillata</i> <i>Arthropodium strictum</i> <i>Austrostipa</i> spp. <i>Bossiaea prostrata</i> <i>Brachyscome</i> spp. <i>Dianella revoluta</i> <i>Einadia nutans</i> <i>Eryngium ovinum</i> <i>Eucalyptus camaldulensis</i> <i>Goodenia pinnatifida</i> <i>Lomandra filiformis</i> <i>Stackhousia monogyna</i> <i>Wahlenbergia gracilis</i></p>	<p><i>Acacia mearnsii</i> <i>Acacia melanoxylon</i> <i>Bursaria spinosa</i> <i>Eucalyptus camaldulensis</i> <i>Eucalyptus ovata</i> <i>Goodenia ovata</i> <i>Lomandra longifolia</i> <i>Bolboschoenus</i> spp. <i>Carex appressa</i> <i>Eleocharis acuta</i> <i>Triglochin procera</i></p>	<p><i>Acacia acinacea</i> <i>Acacia implexa</i> <i>Acacia paradoxo</i> <i>Allocasuarina verticillata</i> <i>Arthropodium strictum</i> <i>Austrostipa</i> spp. <i>Bossiaea prostrata</i> <i>Brachyscome</i> spp. <i>Dianella revoluta</i> <i>Einadia nutans</i> <i>Eryngium ovinum</i> <i>Eucalyptus camaldulensis</i> <i>Goodenia pinnatifida</i> <i>Lomandra filiformis</i> <i>Stackhousia monogyna</i> <i>Wahlenbergia gracilis</i></p>	<p>A community education program to encourage residents to remove invasive weeds and plant out beneficial indigenous plants could be applied to increase the ecological values of the area.</p>
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NOTE: In areas of Trapezoid creek profile discussions with Melbourne Water should be engaged to investigate the future possibility of creek bank reprofiling for layback and weir structures.

Figure 10 - Landscape Character possibility in the Concrete Lined Trapezoid reaches of the Moonee Ponds Creek (approximately Pascoe Vale Rd to Ormond Rd)



<p>A community education program to encourage residents to remove invasive weeds and plant out beneficial indigenous plants could be applied to increase the ecological values of the area.</p>	<p><i>Acacia acinacea</i> <i>Acacia implexa</i> <i>Acacia paradoxa</i> <i>Allocasuarina verticillata</i> <i>Arthropodium strictum</i> <i>Brachyscome</i> spp. <i>Bulbine bulbosa</i> <i>Callistemon sieberi</i> <i>Chloris truncata</i> <i>Danthonia</i> spp. <i>Dodonaea viscosa</i> <i>Eucalyptus camaldulensis</i> <i>Myoporum viscosum</i></p>	<p><i>Acacia acinacea</i> <i>Acacia implexa</i> <i>Acacia paradoxa</i> <i>Allocasuarina verticillata</i> <i>Austrostipa</i> spp. <i>Bossiaea prostrata</i> <i>Brachyscome</i> spp. <i>Dianella revoluta</i> <i>Eryngium ovinum</i> <i>Eucalyptus camaldulensis</i> <i>Goodenia pinnatifida</i> <i>Lomandra filiformis</i> <i>Stackhousia monogyna</i> <i>Wahlenbergia gracilis</i></p>	<p>Little scope at present</p>	<p><input checked="" type="checkbox"/> <i>Acacia acinacea</i> <input checked="" type="checkbox"/> <i>Acacia implexa</i> <input checked="" type="checkbox"/> <i>Acacia paradoxa</i> <input checked="" type="checkbox"/> <i>Allocasuarina verticillata</i> <input checked="" type="checkbox"/> <i>Arthropodium strictum</i> <input checked="" type="checkbox"/> <i>Austrostipa</i> spp. <input checked="" type="checkbox"/> <i>Bossiaea prostrata</i> <input checked="" type="checkbox"/> <i>Brachyscome</i> spp. <input checked="" type="checkbox"/> <i>Dianella revoluta</i> <input checked="" type="checkbox"/> <i>Einadia nutans</i> <input checked="" type="checkbox"/> <i>Eryngium ovinum</i> <input checked="" type="checkbox"/> <i>Eucalyptus camaldulensis</i> <input checked="" type="checkbox"/> <i>Goodenia pinnatifida</i> <input checked="" type="checkbox"/> <i>Lomandra filiformis</i> <input checked="" type="checkbox"/> <i>Stackhousia monogyna</i> <input checked="" type="checkbox"/> <i>Wahlenbergia gracilis</i></p>	<p>A community education program to encourage residents to remove invasive weeds and plant out beneficial indigenous plants could be applied to increase the ecological values of the area.</p>
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NOTE: In areas of Trapezoid creek profile discussions with Melbourne Water should be engaged to investigate the future possibility of creek bank reprofiling for layback and weir structures.

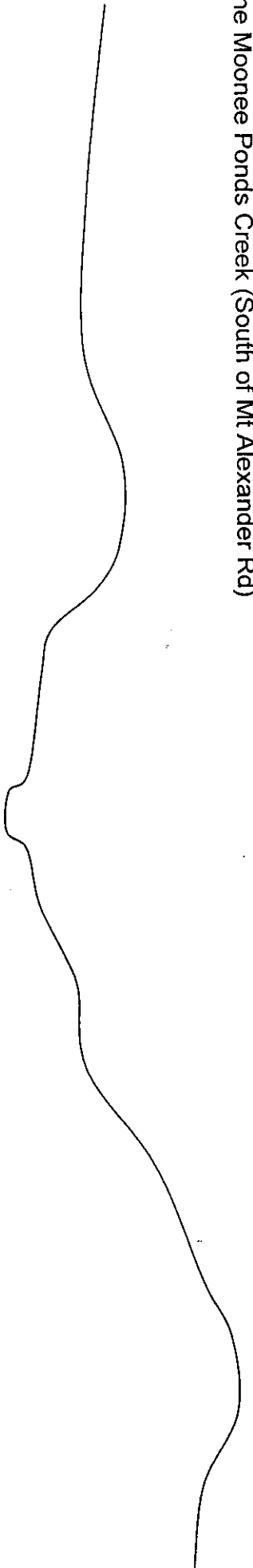
Figure 11 - Landscape Character possibility in the Concrete Lined Trapezoid with Low Flow Channel reaches of the Moonee Ponds Creek (approximately Ormond Rd to Mt Alexander Rd)

<p>A community education program to encourage residents to remove invasive weeds and plant out beneficial indigenous plants could be applied to increase the ecological values of the area.</p>			
<p><i>Acacia implexa</i> <i>Acacia paradoxa</i> <i>Allocasuarina verticillata</i> <i>Austrostipa</i> spp. <i>Bossiaea prostrata</i> <i>Brachyscome</i> spp. <i>Dianella revoluta</i> <i>Eryngium ovinum</i> <i>Eucalyptus camaldulensis</i> <i>Goodenia pinnatifida</i> <i>Lomandra filiformis</i> <i>Stackhousia monogyna</i> <i>Wahlenbergia gracilis</i></p>			
<p><i>Little scope at present</i></p>			
<p><i>Acacia implexa</i> <i>Acacia paradoxa</i> <i>Allocasuarina verticillata</i> <i>Austrostipa</i> spp. <i>Bossiaea prostrata</i> <i>Brachyscome</i> spp. <i>Dianella revoluta</i> <i>Eryngium ovinum</i> <i>Eucalyptus camaldulensis</i> <i>Goodenia pinnatifida</i> <i>Lomandra filiformis</i> <i>Stackhousia monogyna</i> <i>Wahlenbergia gracilis</i></p>			<p>A community education program to encourage residents to remove invasive weeds and plant out beneficial indigenous plants could be applied to increase the ecological values of the area.</p>

NOTE: In areas of Trapezoid creek profile discussions with Melbourne Water should be engaged to investigate the future possibility of creek bank reprofiling for layback and weir structures.

NOTE: In areas of Trapezoid creek profile discussions with Melbourne Water should be engaged to investigate the future possibility of creek bank reprofiling for layback and weir structures.

Figure 12 - Landscape Character possibility in the Grass Lined Trapezoid Low Flow Channel reaches of the Moonee Ponds Creek (South of Mt Alexander Rd)



<p>A community education program to encourage residents to remove invasive weeds and plant out beneficial indigenous plants could be applied to increase the ecological values of the area.</p>				
<p><i>Acacia melanoxylon</i> <i>Acacia paradoxa</i> <i>Allocasuarina verticillata</i> <i>Callistemon sieberi</i> <i>Calocephalus lacteus</i> <i>Correa glabra</i> <i>Dianella revoluta</i> <i>Einadia nutans</i> <i>Eryngium ovinum</i> <i>Eucalyptus camaldulensis</i> <i>Goodenia ovata</i> <i>Goodenia pinnatifida</i> <i>Lomandra filiformis</i> <i>Lomandra longifolia</i> <i>Poa labillardierei</i> <i>Stackhousia monogyne</i> <i>Wahlenbergia gracilis</i></p>	<p><i>Acacia mearnsii</i> <i>Acacia melanoxylon</i> <i>Bursaria spinosa</i> <i>Eucalyptus camaldulensis</i> <i>Eucalyptus ovata</i> <i>Goodenia ovata</i> <i>Lomandra longifolia</i> <i>Bolboschoenus spp.</i> <i>Carex appressa</i> <i>Eleocharis acuta</i> <i>Triglochin procera</i></p>	<p><i>Acacia melanoxylon</i> <i>Acacia paradoxa</i> <i>Allocasuarina verticillata</i> <i>Callistemon sieberi</i> <i>Calocephalus lacteus</i> <i>Correa glabra</i> <i>Dianella revoluta</i> <i>Einadia nutans</i> <i>Eryngium ovinum</i> <i>Eucalyptus camaldulensis</i> <i>Goodenia ovata</i> <i>Goodenia pinnatifida</i> <i>Lomandra filiformis</i> <i>Lomandra longifolia</i> <i>Poa labillardierei</i> <i>Stackhousia monogyne</i> <i>Wahlenbergia gracilis</i></p>	<p>A community education program to encourage residents to remove invasive weeds and plant out beneficial indigenous plants could be applied to increase the ecological values of the area.</p>	

NOTE: In areas of Trapezoid creek profile discussions with Melbourne Water should be engaged to investigate the future possibility of creek bank reprofiling for layback and weir structures.

8. Constraints and considerations

In the highly urbanised environment that the Moonee Ponds Creek flows there are a myriad of uses and users placed on this valuable community resource. Service Authorities (such as Melbourne Water, Public Transport Authority, SPI Powernet etc) have their demands of the open space of the Moonee Ponds Creek Corridor as do the local residents and user groups.

Recommendation

Each agency, authority, user group and individual has expectations and rights regarding the Creek area. Whether these expectations and rights are legal, cultural or otherwise any activities undertaken within the creek corridor must be aware and sensitive to these constraints and considerations.

Key land management agencies and other stakeholder groups have guidelines that direct the range of activities that may affect their operation within the creek corridor. This section of the document aims to detail, in broad terms, the constraints and considerations placed on revegetation activities in the Moonee Ponds Creek corridor.

8.1 Public safety and fire

Public concerns regarding personal safety as a consequence of revegetation activities needs to be considered. As such revegetation activities need to be mindful of creating circumstances through vegetation placement that may result in sectors of the public fearing those area. These fears, whether well founded or otherwise include personal safety from attack (either animal or criminal), falling limbs, lack of lighting, fire and injury from prickly bushes (e.g. Hedge Wattle). Every circumstance will call for varying responses but the key to addressing this issue is a bit of forethought.

Some general principles that should be followed include:

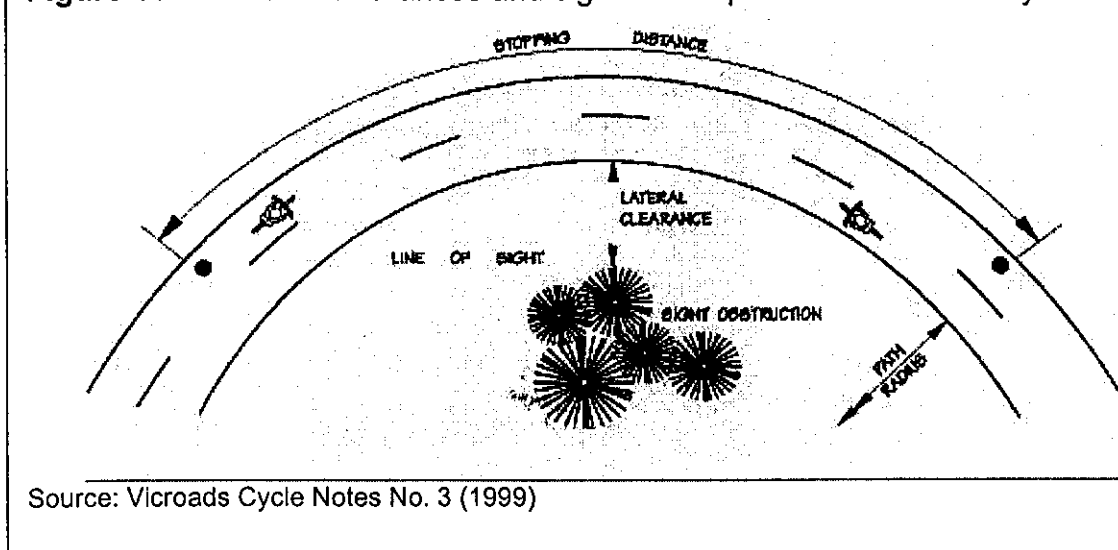
- Keeping revegetation areas at least one ride on mower width (approx. 1.5m) away from property boundaries
- Avoid creating enclosed or poorly lighted and surveilled areas along the share pathway
- Placing species that could cause personal injury (prickly species) far enough away from the share pathway (use "mature plants" size in **Appendix A** as a guide)

Community education and involvement in revegetation activities from the planning phase right through to implementation and post establishment maintenance will assist in allaying these concerns and fears.

8.2 Bicycle users

Safe planting design to accommodate bicycle passage along the Moonee Ponds Creek Trail also needs consideration. The Austroads "*Guide to Traffic Engineering Practice, Part 14 – Bicycles*"(1999) stipulate that "...a laterale clearance of 1 metre (0.5 metre minimum) is required between the edge of paths and any obstacle, which if struck may result in a cyclist losing control of there bicycle or being injured...". Vertical clearances to tree branches of structures is set at 2.4 metres from the riding surface.

Figure 13 – Laterale clearances and sight line requirements of share cycleways



Source: Vicroads Cycle Notes No. 3 (1999)

Sight distances are another key issue for cyclists. Without adequate viewlines it may become difficult for cyclists to stop or take evasive action to avoid conflict with other users. The series of tables below are used to define sight distance / laterale clearance parameters for stretches of path being used at differing speeds.

Table 5 – Sight distances and viewline requirements of shared cycleways

Design Speed (km/h)	Minimum Radius (metres)
20	10
30	25
40	50
50	94

Source: Vicroads Cycle Notes No. 3 (1999)

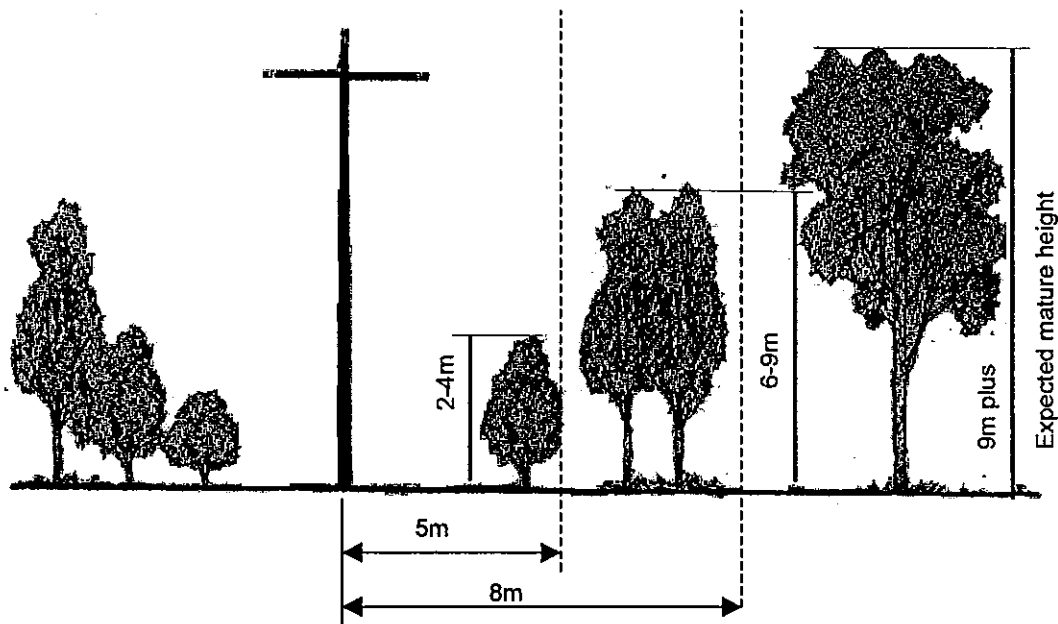
8.3 Service easements and asset maintenance

Within the context of our social framework there are various legislative and planning restrictions on plantings, primarily relating to the maintenance of service easements and infrastructure. Below are the key guidelines that must be adhered to in relation to various easements and assets.

Planting near domestic distribution powerlines –

- Shrubs to four metres within 7 metres of the powerlines
- Trees to ten metres no closer than 10 metres to powerlines

Figure 14– Vegetation clearances from domestic powerlines



Source: Powercor 1995

Planting within the easement of extra high voltage transmission lines (*easement width varies dependent on transmission tower type, see Powernet 1997 for more information*)

- All plants to be less than 3 metres in mature height
- Trees or shrubs should be scattered or clumped across the easement (an overall cover by mature trees and shrubs should not exceed 10% of the easement area)
- Vegetation within a 20m radius of tower centre should only be grasses or lower vegetation to allow maintenance vehicle access

Plantings adjacent to powerline easement but not on it

- "Mature height of the plants should be such that trees could not interfere with lines or ignite if falling"

Council setbacks

Following the review of key Council documents and input from Council staff the following guidelines for vegetation clearances from various infrastructure is given below

Infrastructure	Vegetation Clearance
Paths (centre of plant to near edge of path)	<ul style="list-style-type: none"> ➤ 300mm grasses/groundcovers ➤ 600mm small shrub ➤ 1200mm Large tree
Lights	10m
Buildings & infrastructure	3m
Property Boundaries	0-3m

Melbourne Water

A clear policy of Melbourne Water is that any revegetation within its area of management should not impede water flow, which may lead to an increase in flood heights. The practical interpretation of this is that revegetation in the floodway management zone should be focused on the recreation of a grassy woodlands theme with the occasional use of River Red Gums and Swamp Gums and other clean trunked trees along with a dominant use of grass/sedge understorey. This does not

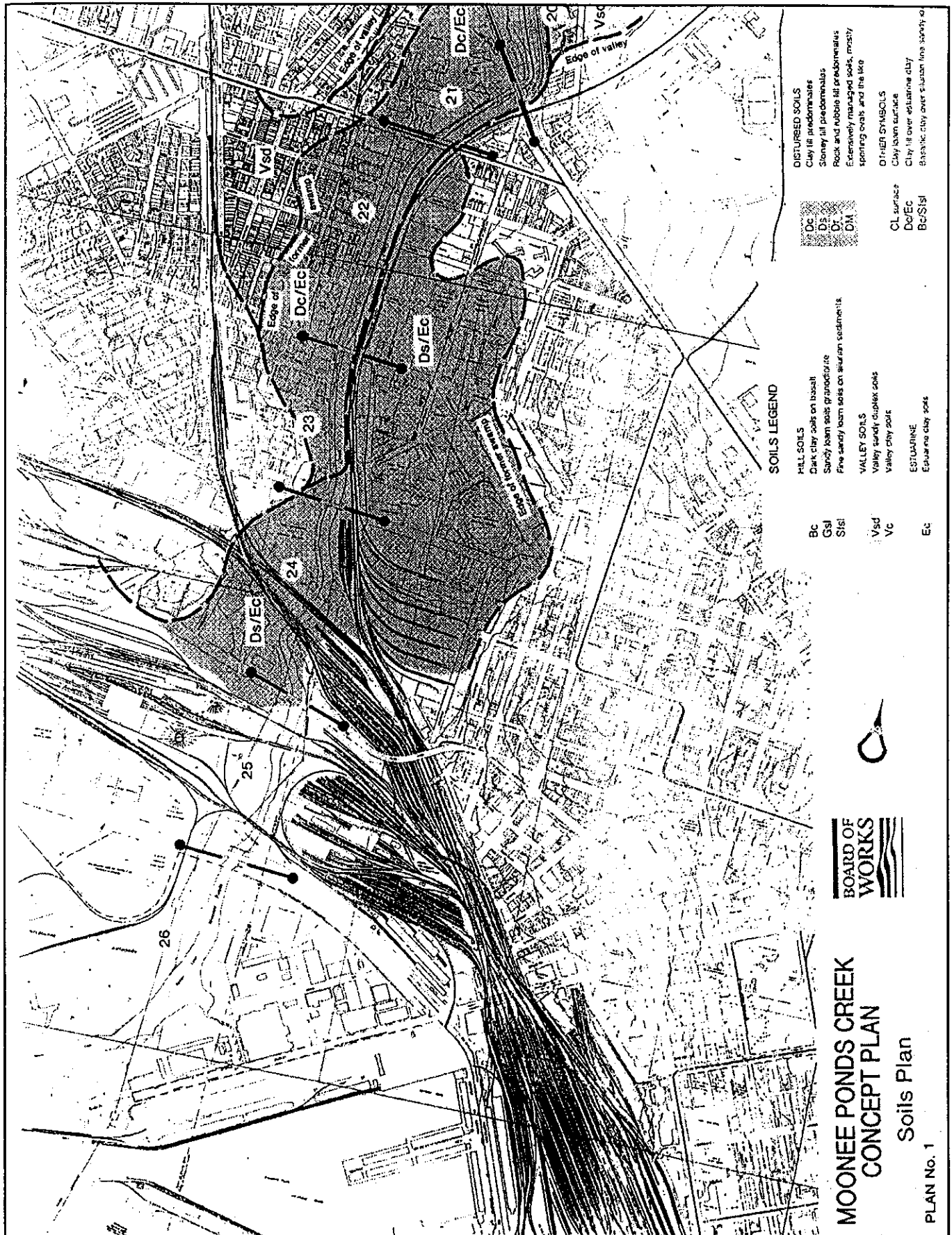
exclude the use of shrubs but there is a clear tendency to limit their use in the floodway zones.

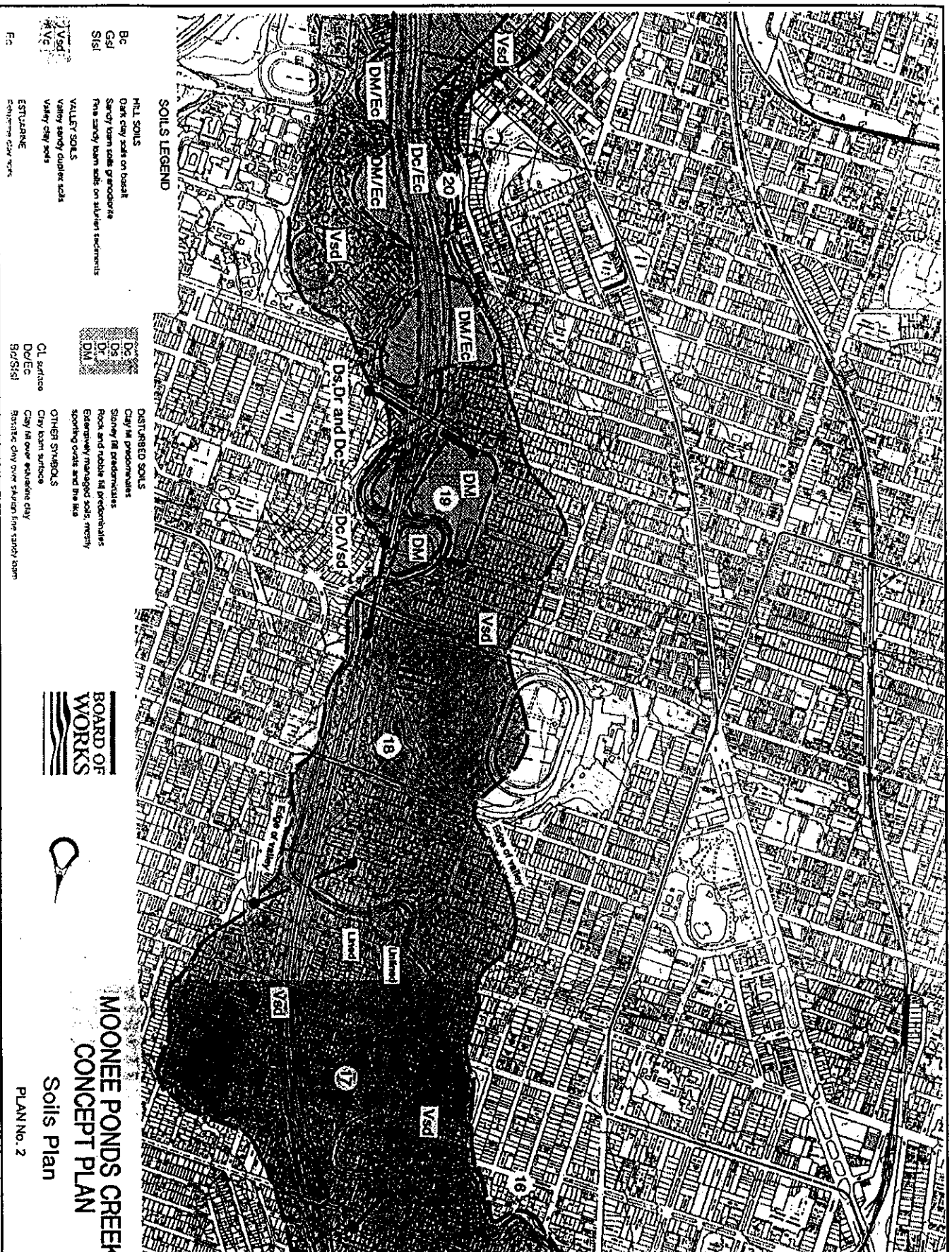
Plant spacings within the floodway zone that Melbourne Water currently advocates are:

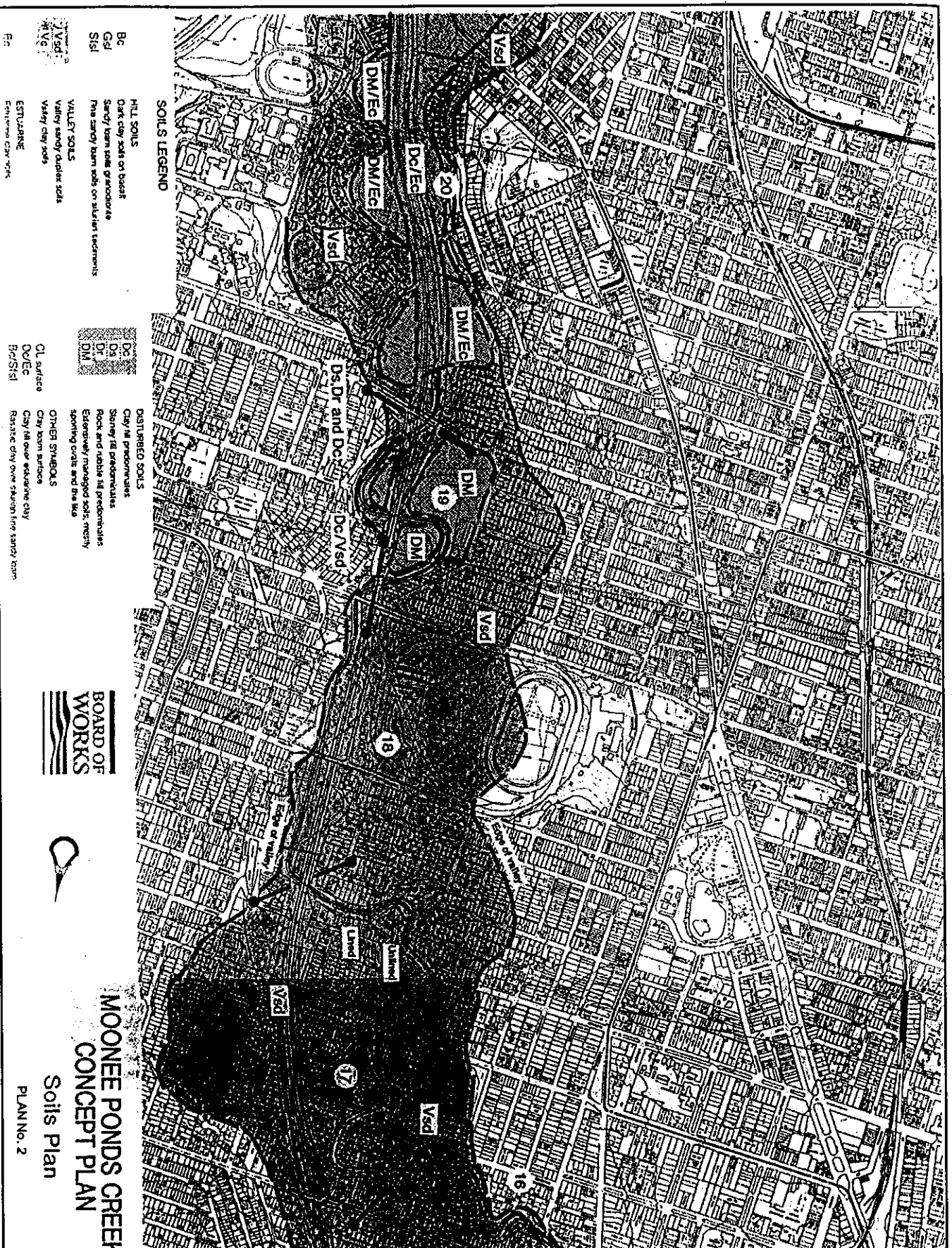
Trees	5 to 10 metres apart
Shrubs	10 to 20 metres apart

APPENDIX A

Soil maps of the Moonee Ponds Creek Corridor

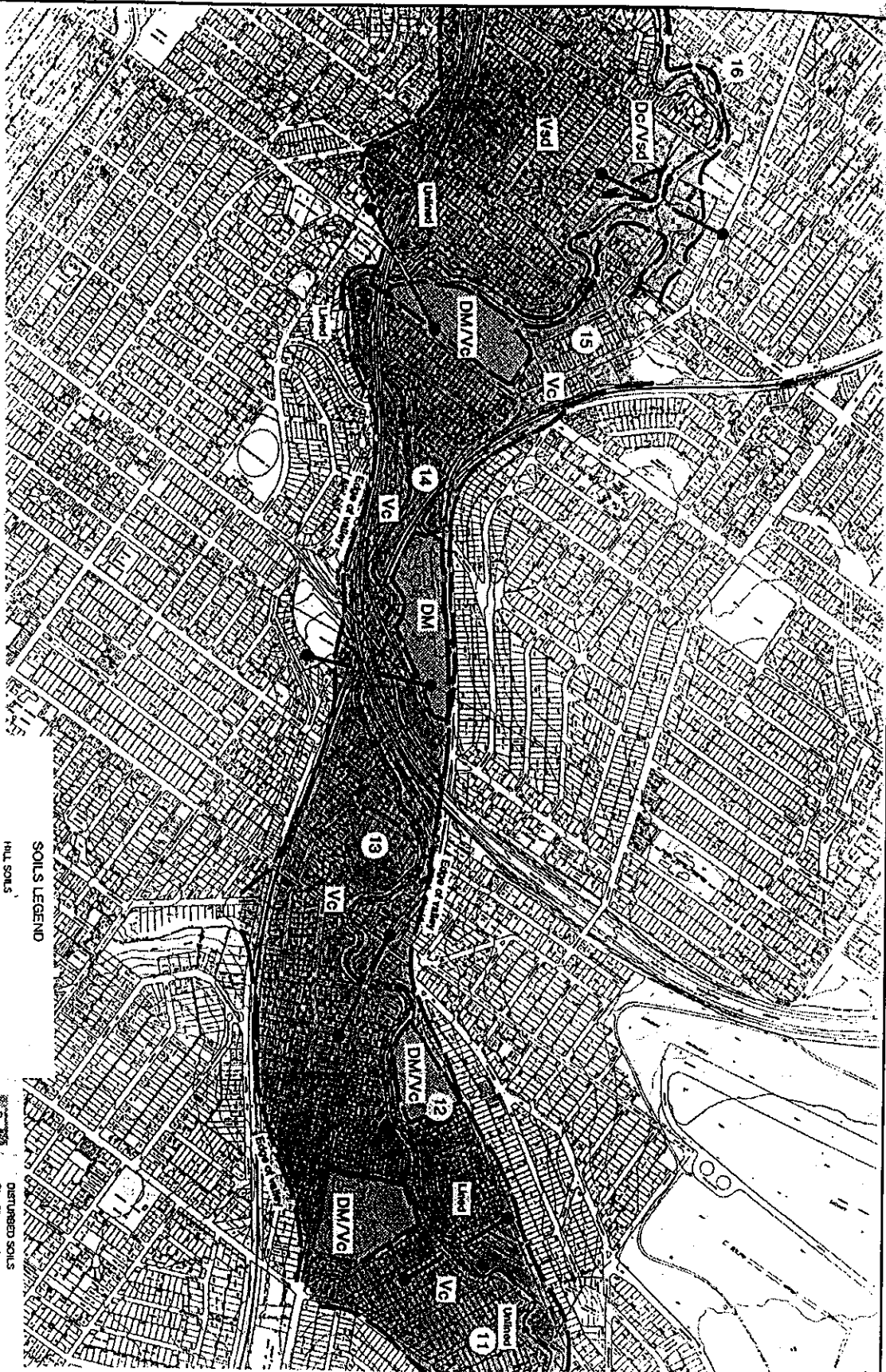






MOONEE PONDS CREEK CONCEPT PLAN Soils Plan

PLAN No. 3



SOILS LEGEND

- HILL SOILS**
 BC Dark clay soils on basalt
 GSI Sandy loam soils of moderate
 SSI Fine sandy loam soils on alluvial sediments
- VALLEY SOILS**
 Vsd Valley sandy duplex soils
 Vc Valley clay soils
 Ec Estuarine clay soils



- DISTURBED SOILS**
 DC Clay in predominance
 DM Sandy to moderate
 DM/Vc Rock and rubble fill in predominance
 BC/SI Extensively managed soils, mostly
 sporting ovals and the like
- OTHER SYMBOLS**
 CL surface
 DEc Clay over estuarine clay
 BC/SI Basic clay over alluvial fine sandy loam

Ec

ESTUARINE
Brackish clay soils



VALLEY SOILS
Valley sandy duplex soils
Valley clay soils

Gcl

HELL SOILS
Dark clay soils on basalt

Sis

Sandy loam soils of granodiorite
Fine sandy loam soils on silurian sediment



DISTURBED SOILS
Dc Clay in predominance
Ds Silty clay in predominance
Dm Rock and rubble in predominance
Extensively reworked soils, mostly
sandy loams and the like

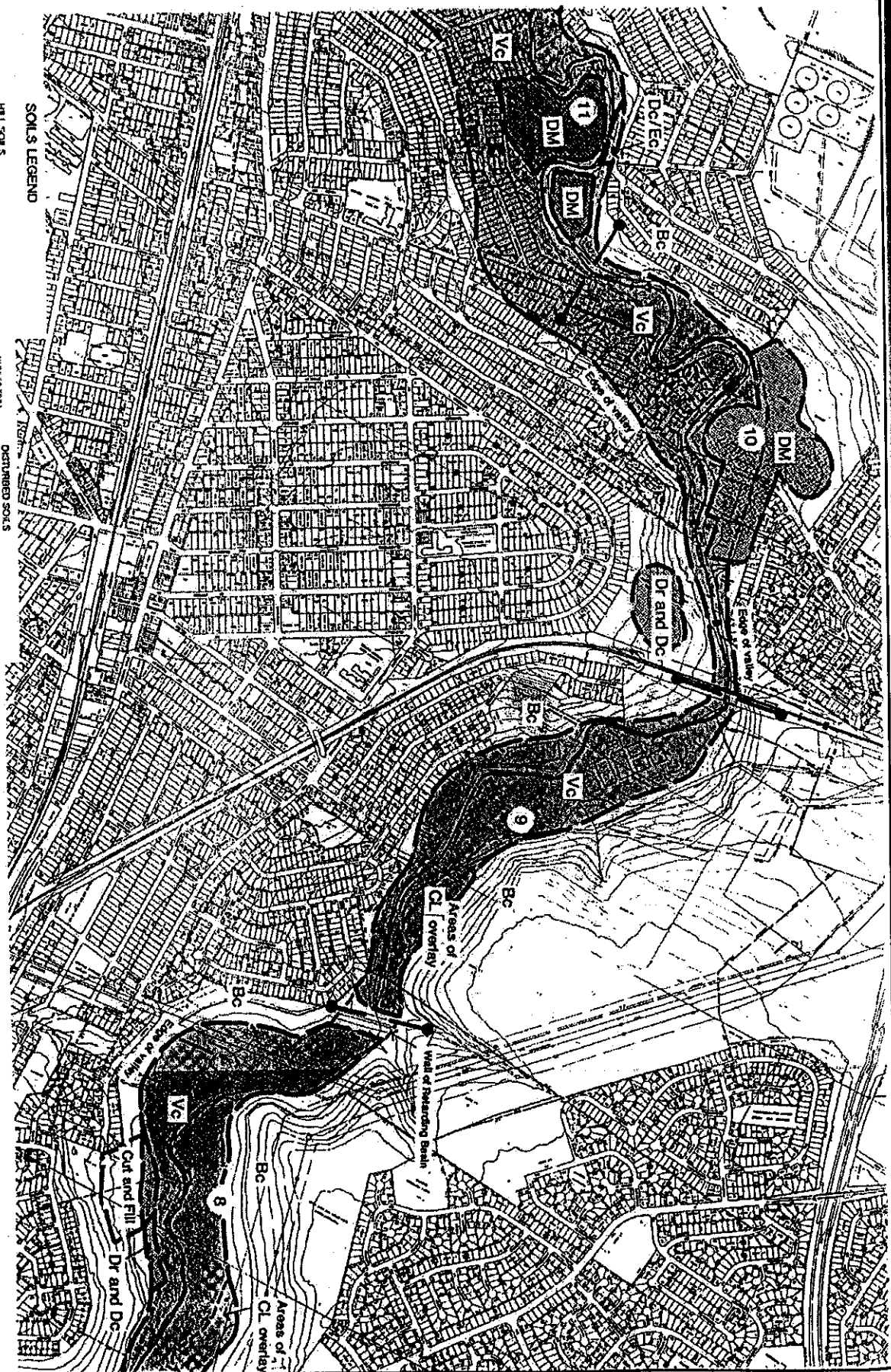
CL surface

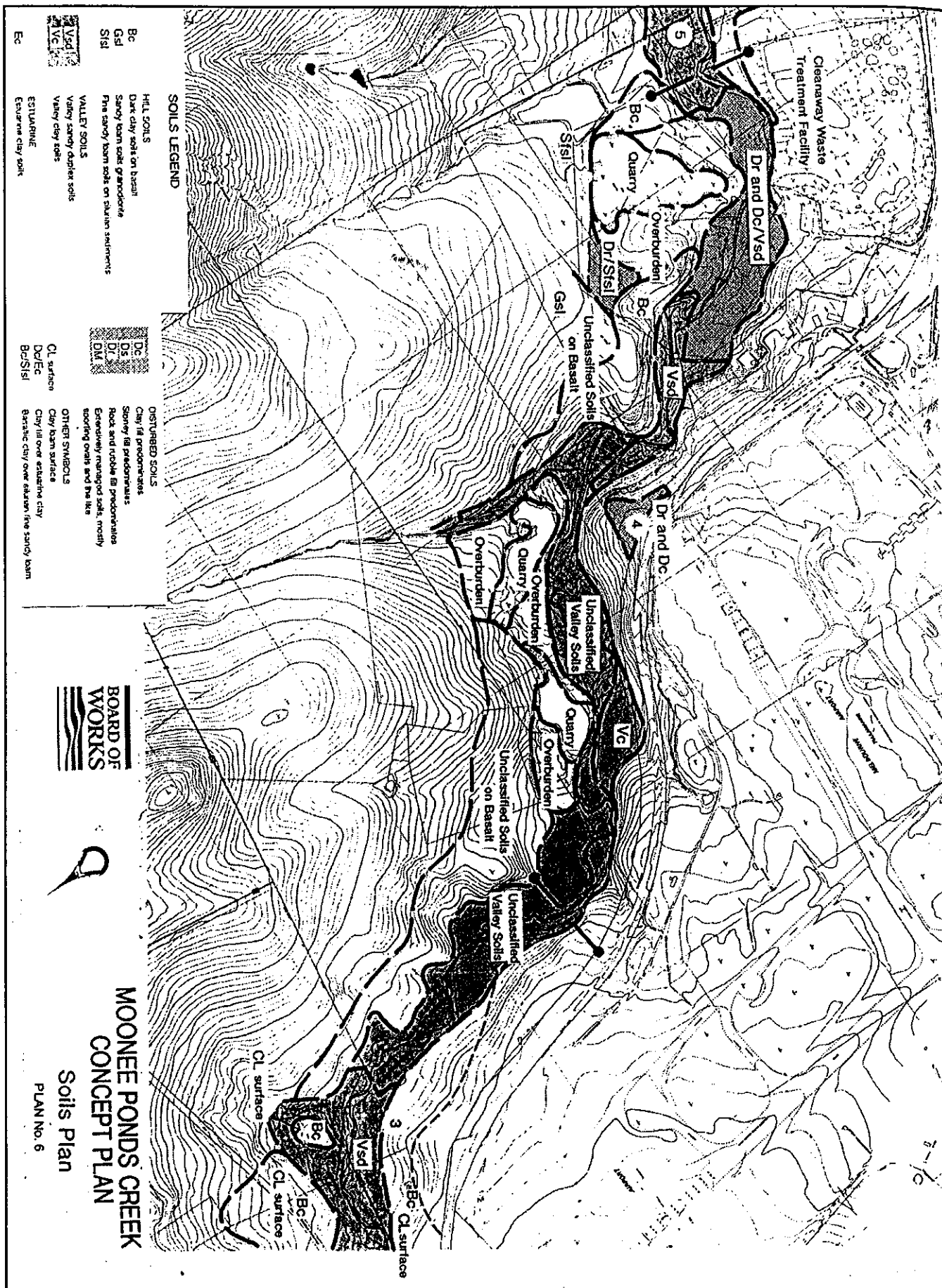
OTHER SYMBOLS
CL surface
CL over clay
CL over silty loam
CL over silty clay
CL over silty loam



MOONEE PONDS CREEK CONCEPT PLAN

Soils Plan
PLAN No. 4





Appendix B – Species by vegetation community

Key

Vegetation Community Codes Y = definite species within the community o = species is represented occasionally within the community ? = species might be in the community, verification sought	Considerations for Species Use Codes Establishment Ease E = Easy M = Moderate D = Difficult
	Direct Seeding Y = species is suitable for Direct Seeding/ ? = species is suitable but seed availability may be a limit in factor is application

Vegetation Community 1 Woodlands (*E. camaldulensis*)

Considerations for Species Use

Spp. Occurrence within this vegetation community	Species	Common Name	Height (m)	Width (m)	Suggested planting densities (no. stems per X m ²)	Establishment ease	Suitable for Direct Seeding	Suitable for planting under Powerlines	Within 10m of powerlines	Within 1.5m of Bike Path
o	<i>Acacia melanoxylon</i>	Blackwood	30	15	1/25	E	y	N	Y	N
Y	<i>Acaena echinata</i>	Sheep's-Burr	.4		8/1	E		Y	Y	Y
Y	<i>Aceana ovina</i>	Australian Sheep's-Burr	.5		8/1	E		Y	Y	Y
Y	<i>Arthropodium strictum</i>	Chocolate Lily	1	.8	10/1	M		Y	Y	Y
Y	<i>Austrostipa bigeniculata</i>		.2		10/1	E		Y	Y	Y
o	<i>Austrostipa scabra ssp falcata</i>		.2 5		10/1	E		Y	Y	Y
o	<i>Austrostipa semibarbata</i>		.3		10/1	E		Y	Y	Y
o	<i>Bossiaea prostrata</i>	Creeping Bossiaea	pr os tra te	1. 5	4/1	M		Y	Y	Y

Y	<i>Brachyscome basaltica</i>	Basalt Daisy	.6		4/1	M		Y	Y	Y
Y	<i>Brachyscome dentata</i>	Golden Daisy	.3	.6	4/1	M	P	Y	Y	Y
?	<i>Bulbine bulbosa</i>	Bulbine Lily	.6	.3	10/1	M		Y	Y	Y
?	<i>Burchardia umbellata</i>	Milkmaids	.5		10/1	D		Y	Y	Y
o	<i>Calocephalus citerus</i>	Lemon Beauty-Heads	.5	1	10/1	E	?	Y	Y	Y
Y	<i>Carex breviculmis</i>	Short-stemmed Sedge	.1 5		10/1	E		Y	Y	Y
o	<i>Cassinia aculeata</i>	Common Cassinia	4	2	1/9	E	P	Y	Y	N
o	<i>Cassinia arcuata</i>	Drooping Cassinia	3	2	1/9	E	P	Y	Y	N
Y	<i>Chloris truncata</i>	Windmill Grass	.4 5		10/1	E	Y	Y	Y	Y
o	<i>Chrysocephalum apiculatum</i>	Common Everlasting	.3	2	10/1	E		Y	Y	Y
Y	<i>Chrysocephalum semipapposum</i>	Clustered Everlasting	1	3	10/1	E		Y	Y	Y
Y	<i>Convolvulus remotus</i>	Bindweed	Pr str at e	.6	1/16	M		Y	Y	Y
o	<i>Craspedia variabilis</i>	Common Billy Buttons	.3	1	4/1	M		Y	Y	Y
Y	<i>Danthonia caespitosa</i>	Common Wallaby-Grass	.4	.4	12/1	E	Y	Y	Y	Y
Y	<i>Danthonia duttoniana</i>	Brown-back Wallaby-Grass	.5		12/1	E	Y	Y	Y	Y
Y	<i>Danthonia laevis</i>	Wallaby-Grass	.4	.4	12/1	E		Y	Y	Y
Y	<i>Danthonia linkii</i>	Wallaby-Grass	.4	.4	12/1	E		Y	Y	Y
o	<i>Danthonia pilosa</i>	Velvet Wallaby-Grass	.2	.3	12/1	E		Y	Y	Y
Y	<i>Danthonia racemosa</i>	Clustered Wallaby-Grass	.2		12/1	E		Y	Y	Y
Y	<i>Danthonia setacea</i>	Bristly Wallaby-Grass	.3	.4	12/1	E	Y	Y	Y	Y
Y	<i>Dianella revoluta</i>	Black-anther Flax-Lily	1	2. 5	4/1	E		Y	Y	Y
Y	<i>Dichelachne crinita</i>	Long Hair Plume-Grass	.1		12/1	E	Y	Y	Y	Y
Y	<i>Dichondra repens</i>	Kidney Weed	Pr os tra te	S pr ea di ng	10/1	E		Y	Y	Y
o	<i>Einadia nutans</i>	Nodding Saltbush	.3	1. 2	9/1	E	?	Y	Y	Y

Y	<i>Elymus scabrus</i>	Common Wheat-Grass	.2	.4	12/1	E		Y	Y	Y
o	<i>Enchylaena tomentosa</i>	Ruby Saltbush	1	1	1/4	E		Y	Y	Y
Y	<i>Eryngium ovinum</i>	Blue Devil	.6	.5	9/1	E		Y	Y	Y
Y	<i>Eucalyptus camaldulensis</i>	River Red Gum	50	35	1/64	E	Y	N	O	N
o	<i>Eucalyptus viminalis</i>	Manna Gum	50	15	1/64	E	Y	N	O	N
o	<i>Eutaxia microphylla</i>	Small-leafed Eutaxia	prostrate	1.5	1/1	M		Y	Y	Y
Y	<i>Glycine tabacina</i>	Variable Glycine	Climber		1/16	M		Y	Y	Y
Y	<i>Goodenia pinnatifida</i>	Cut-leaf Goodenia	.5	.6	1/1	M		Y	Y	Y
Y	<i>Linum marginale</i>	Native Flax	.8	.3	4/1	M	P	Y	Y	Y
Y	<i>Lomandra filiformis</i>	Wattle Mat-Rush	.5	.2	9/1	M		Y	Y	Y
Y	<i>Microlaena stipoides</i>	Weeping Grass	.6		12/1	E	?	Y	Y	Y
Y	<i>Pimelea curviflora</i>	Curved Rice-flower	.3	.6	10/1	M		Y	Y	Y
?	<i>Pimelea humilis</i>	Small Rice-flower	.5	1	10/1	M		Y	Y	Y
o	<i>Poa labillardieri</i>	Common Tussock-Grass	.8	.5	4/1	E	Y	Y	Y	Y
o	<i>Poa morrisii</i>	Velvet Tussock-Grass	.3	.3	10/1	M		Y	Y	Y
o	<i>Poa sieberiana</i>	Tussock-Grass	.3	.4	10/1	E		Y	Y	Y
Y	<i>Schoenus apogon</i>	Common Bog-Sedge	.3		10/1	E		Y	Y	Y
Y	<i>Senecio quadridentatus</i>	Cotton Fireweed	1	1	4/1	E	Y	Y	Y	Y
Y	<i>Stackhousia monogyna</i>	Creamy Candles	.3	.3	10/1	M		Y	Y	Y
o	<i>Stylidium graminifolium</i>	Grass Trigger-Plant	.6	.3	10/1	M	P	Y	Y	Y
?	<i>Teucrium racemosum</i>	Grey Germander	.6	1	4/1	E		Y	Y	Y
Y	<i>Themeda triandra</i>	Kangaroo Grass	.4	.75	12/1	E	P	Y	Y	Y
Y	<i>Tricoryne elatior</i>	Yellow Rush-Lily	.5	.5	10/1	M		Y	Y	Y
Y	<i>Veronica gracillis</i>	Slender Speedwell	.3	1	4/1	M		Y	Y	Y
?	<i>Vittadinia gracilis</i>	Woolly New Holland Daisy	.4		4/1	E		Y	Y	Y
?	<i>Wahlenbergia communis</i>	Tufted Bluebell	.5	.15	8/1	M		Y	Y	Y

Y	Wahlenbergia gracilis	Australian Bluebell	.5		8/1	M		Y	Y	Y
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Key

Vegetation Community Codes Y = definite species within the community o = species is represented occasionally within the community ? = species might be in the community, verification sought	Considerations for Species Use Codes Establishment Ease E = Easy M = Moderate D = Difficult
	Direct Seeding Y = species is suitable for Direct Seeding/ ? = species is suitable but seed availability may be a limit in factor is application

Vegetation Community 2 Woodlands (*E. melliodora* – *E. vimminalis*)

Considerations for Species Use

Spp. Occurrence within this vegetation community	Species	Common Name	Height (m)	Width (m)	Suggested planting densities (no. stems per X m2)	Establishment ease	Suitable for Direct Seeding	Suitable for planting under Powerlines	Within 10m of powerlines	Within 1.5m of Bike Path
Y	<i>Acacia implexa</i>	Lightwood	15	7	1/25	E	Y	N	Y	N
Y	<i>Acacia mearnsii</i>	Late Black Wattle	25	10	1/25	E	Y	N	Y	N
Y	<i>Acacia melanoxylon</i>	Blackwood	30	15	1/25	E	y	N	Y	N
Y	<i>Acacia paradoxa</i>	Hedge Wattle	4	5	1/9	E	Y	Y	Y	N
Y	<i>Acacia pycnantha</i>	Golden Wattle	10	5	1/25	E	Y	N	N	N
Y	<i>Acaena echinata</i>	Sheep's-Burr	.4		8/1	E		Y	Y	Y
Y	<i>Aceana ovina</i>	Australian Sheep's-Burr	.5		8/1	E		Y	Y	Y
Y	<i>Allocasuarina verticillata</i>	Drooping She-oak	11	6	1/25	E	Y	O	Y	N
Y	<i>Arthropodium strictum</i>	Chocolate Lily	1	.8	10/1	M		Y	Y	Y
o	<i>Atriplex semibaccata</i>	Creeping Saltbush	.3	3	4/1	E		Y	Y	Y
Y	<i>Austrostipa bigeniculata</i>		.2		10/1	E		Y	Y	Y
o	<i>Austrostipa scabra ssp falcata</i>		.2 5		10/1	E		Y	Y	Y

Y	<i>Austrostipa semibarbata</i>		.3		10/1	E		Y	Y	Y
Y	<i>Banksia marginata</i>	Silver Banksia	10	5		E		Y	Y	N
Y	<i>Bossiaea prostrata</i>	Creeping Bossiaea	prostrata	1.5	4/1	M		Y	Y	Y
?	<i>Brachyscome basaltica</i>	Basalt Daisy	.6		4/1	M		Y	Y	Y
?	<i>Brachyscome dentata</i>	Golden Daisy	.3	.6	4/1	M	P	Y	Y	Y
o	<i>Brunonia australis</i>	Blue Pincushion	.5	.15	4/1	M		Y	Y	Y
Y	<i>Bulbine bulbosa</i>	Bulbine Lily	.6	.3	10/1	M		Y	Y	Y
Y	<i>Burchardia umbellata</i>	Milkmaids	.5		10/1	D		Y	Y	Y
o	<i>Bursaria spinosa</i>	Sweet Bursaria	6	3	1/9	E	P	Y	Y	N
o	<i>Calocephalus citerus</i>	Lemon Beauty-Heads	.5	1	10/1	E	?	Y	Y	Y
Y	<i>Carex breviculmis</i>	Short-stemmed Sedge	.15		10/1	E		Y	Y	Y
o	<i>Cassinia aculeata</i>	Common Cassinia	4	2	1/9	E	P	Y	Y	N
o	<i>Cassinia arcuata</i>	Drooping Cassinia	3	2	1/9	E	P	Y	Y	N
Y	<i>Chloris truncata</i>	Windmill Grass	.45		10/1	E	Y	Y	Y	Y
o	<i>Chrysocephalum apiculatum</i>	Common Everlasting	.3	2	10/1	E		Y	Y	Y
Y	<i>Chrysocephalum semipapposum</i>	Clustered Everlasting	1	3	10/1	E		Y	Y	Y
o	<i>Clematis microphylla</i>	Small-leafed Clematis	Climber		1/16	M		Y	Y	Y

Y	<i>Convolvulus remotus</i>	Bindweed	Pr str ate	.6	1/16	M		Y	Y	Y
Y	<i>Danthonia caespitosa</i>	Common Wallaby-Grass	.4	.4	12/1	E	Y	Y	Y	Y
Y	<i>Danthonia laevis</i>	Wallaby-Grass	.4	.4	12/1	E		Y	Y	Y
Y	<i>Danthonia linkii</i>	Wallaby-Grass	.4	.4	12/1	E		Y	Y	Y
Y	<i>Danthonia pilosa</i>	Velvet Wallaby-Grass	.2	.3	12/1	E		Y	Y	Y
Y	<i>Danthonia racemosa</i>	Clustered Wallaby-Grass	.2		12/1	E		Y	Y	Y
Y	<i>Danthonia setacea</i>	Bristly Wallaby-Grass	.3	.4	12/1	E	Y	Y	Y	Y
Y	<i>Dianella revoluta</i>	Black-anther Flax-Lily	1	2. 5	4/1	E		Y	Y	Y
o	<i>Dicanthium sericeum</i>	Silky Blue-Grass	.5		12/1	E		Y	Y	Y
Y	<i>Dichelachne crinita</i>	Long Hair Plume-Grass	.1		12/1	E	Y	Y	Y	Y
Y	<i>Dichondra repens</i>	Kidney Weed	Pr os tra te	S pr ea di ng	10/1	E		Y	Y	Y
o	<i>Dillwynia cinerascens</i>	Grey Parrot-Pea	1. 5	1. 5	4/1	M		Y	Y	Y
o	<i>Einadia nutans</i>	Nodding Saltbush	.3	1. 2	9/1	E	?	Y	Y	Y
Y	<i>Elymus scabrus</i>	Common Wheat-Grass	.2	.4	12/1	E		Y	Y	Y
o	<i>Eryngium ovium</i>	Blue Devil	.6	.5	9/1	E		Y	Y	Y
o	<i>Eucalyptus camaldulensis</i>	River Red Gum	50	35	1/64	E	Y	N	O	N
o	<i>Eucalyptus leucoxylon</i>	Yellow Gum	20	20	1/64	E	?	N	O	N
Y	<i>Eucalyptus melliodora</i>	Yellow Box	30	25	1/64	E	Y	N	O	N
Y	<i>Eucalyptus microcarpa</i>	Grey Box	25	15	1/64	E	Y	N	O	N
o	<i>Eucalyptus viminalis</i>	Manna Gum	50	15	1/64	E	Y	N	O	N
Y	<i>Eutaxia microphylla</i>	Small-leaved Eutaxia	pr os tra te	1. 5	1/1	M		Y	Y	Y
?	<i>Exocarpos cupressiformis</i>	Cherry Ballart	8	5	1/9	D		Y	Y	N

Y	<i>Glycine tabacina</i>	Variable Glycine	Climber		1/16	M		Y	Y	Y
o	<i>Hymenanthera dentata</i>	Tree Violet	4	2.5	¼	E	P	Y	Y	N
o	<i>Indigofera australis</i>	Austral Indigo	2	2	¼	E		Y	Y	N
Y	<i>Kennedia prostrata</i>	Running Postman	prostrate	2.5	4/1	E		Y	Y	Y
Y	<i>Linum marginale</i>	Native Flax	.8	.3	4/1	M	P	Y	Y	Y
Y	<i>Lomandra filiformis</i>	Wattle Mat-Rush	.5	.2	9/1	M		Y	Y	Y
o	<i>Lomandra longifolia</i>	Spiny-headed Mat-Rush	1	1.2	4/1	E		Y	Y	Y
Y	<i>Microlaena stipoides</i>	Weeping Grass	.6		12/1	E	?	Y	Y	Y
Y	<i>Pimelea curviflora</i>	Curved Rice-flower	.3	.6	10/1	M		Y	Y	Y
Y	<i>Pimelea humilis</i>	Small Rice-flower	.5	1	10/1	M		Y	Y	Y
o	<i>Poa labillardieri</i>	Common Tussock-Grass	.8	.5	4/1	E	Y	Y	Y	Y
Y	<i>Poa morrisii</i>	Velvet Tussock-Grass	.3	.3	10/1	M		Y	Y	Y
o	<i>Poa sieberiana</i>	Tussock-Grass	.3	.4	10/1	E		Y	Y	Y
Y	<i>Schoenus apogon</i>	Common Bog-Sedge	.3		10/1	E		Y	Y	Y
Y	<i>Senecio quadridentatus</i>	Cotton Fireweed	1	1	4/1	E	Y	Y	Y	Y
Y	<i>Stackhousia monogyna</i>	Creamy Candles	.3	.3	10/1	M		Y	Y	Y
Y	<i>Stylidium graminifolium</i>	Grass Trigger-Plant	.6	.3	10/1	M	P	Y	Y	Y
Y	<i>Themeda triandra</i>	Kangaroo Grass	.4	.75	12/1	E	P	Y	Y	Y
Y	<i>Tricoryne elatior</i>	Yellow Rush-Lily	.5	.5	10/1	M		Y	Y	Y
Y	<i>Veronica gracillis</i>	Slender Speedwell	.3	1	4/1	M		Y	Y	Y
o	<i>Vittadinia gracilis</i>	Woolly New Holland Daisy	.4		4/1	E		Y	Y	Y
o	<i>Vittadinia muelleri</i>	Narrow-leaf New Holland Daisy	.3	.3	4/1	M		Y	Y	Y
o	<i>Wahlenbergia communis</i>	Tufted Bluebell	.5	.15	8/1	M		Y	Y	Y
Y	<i>Wahlenbergia gracilis</i>	Australian Bluebell	.5		8/1	M		Y	Y	Y

Key

Vegetation Community Codes Y = definite species within the community o = species is represented occasionally within the community ? = species might be in the community, verification sought	Considerations for Species Use Codes Establishment Ease E = Easy M = Moderate D = Difficult
	Direct Seeding Y = species is suitable for Direct Seeding/ ? = species is suitable but seed availability may be a limit in factor is application

Vegetation Community 3 Riparian Woodland / Open Forest

						Considerations for Species Use				
Spp. Occurrence within this vegetation community	Species	Common Name	Height (m)	Width (m)	Suggested planting densities (no. stems per X m2)	Establishment ease	Suitable for Direct Seeding	Suitable for planting under Powerlines	Within 10m of powerlines	Within 1.5m of Bike Path
Y	<i>Acacia mearnsii</i>	Late Black Wattle	25	10	1/25	E	Y	N	Y	N
Y	<i>Acacia melanoxylon</i>	Blackwood	30	15	1/25	E	Y	N	Y	N
o	<i>Acacia pycnantha</i>	Golden Wattle	10	5	1/25	E	Y	N	N	N
Y	<i>Acaena echinata</i>	Sheep's-Burr	.4		8/1	E		Y	Y	Y
Y	<i>Aceana ovina</i>	Australian Sheep's-Burr	.5		8/1	E		Y	Y	Y
o	<i>Arthropodium strictum</i>	Chocolate Lily	1	.8	10/1	M		Y	Y	Y
Y	<i>Austrostipa bigeniculata</i>		.2		10/1	E		Y	Y	Y
?	<i>Bossiaea prostrata</i>	Creeping Bossiaea	prostrata	1.5	4/1	M		Y	Y	Y
o	<i>Bursaria spinosa</i>	Sweet Bursaria	6	3	1/9	E	P	Y	Y	N
o	<i>Calocephalus citerus</i>	Lemon Beauty-Heads	.5	1	10/1	E	?	Y	Y	Y

Y	<i>Calocephalus lacteus</i>	Milky Beauty-Heads	.3	.3	10/1	M		Y	Y	Y
Y	<i>Carex breviculmis</i>	Short-stemmed Sedge	.15		10/1	E		Y	Y	Y
Y	<i>Chloris truncata</i>	Windmill Grass	.45		10/1	E	Y	Y	Y	Y
?	<i>Chrysocephalum semipapposum</i>	Clustered Everlasting	1	3	10/1	E		Y	Y	Y
o	<i>Clematis microphylla</i>	Small-leafed Clematis	Climber		1/16	M		Y	Y	Y
o	<i>Convolvulus remotus</i>	Bindweed	Prostrate	.6	1/16	M		Y	Y	Y
Y	<i>Danthonia caespitosa</i>	Common Wallaby-Grass	.4	.4	12/1	E	Y	Y	Y	Y
?	<i>Danthonia duttoniana</i>	Brown-back Wallaby-Grass	.5		12/1	E	Y	Y	Y	Y
Y	<i>Danthonia linkii</i>	Wallaby-Grass	.4	.4	12/1	E		Y	Y	Y
?	<i>Danthonia racemosa</i>	Clustered Wallaby-Grass	.2		12/1	E		Y	Y	Y
o	<i>Danthonia setacea</i>	Bristly Wallaby-Grass	.3	.4	12/1	E	Y	Y	Y	Y
o	<i>Dianella revoluta</i>	Black-anther Flax-Lily	1	2.5	4/1	E		Y	Y	Y
o	<i>Dicanthium sericeum</i>	Silky Blue-Grass	.5		12/1	E		Y	Y	Y
?	<i>Dichelachne crinita</i>	Long Hair Plume-Grass	.1		12/1	E	Y	Y	Y	Y
o	<i>Dichondra repens</i>	Kidney Weed	Prostrate	Spreading	10/1	E		Y	Y	Y
Y	<i>Elymus scabrus</i>	Common Wheat-Grass	.2	.4	12/1	E		Y	Y	Y
Y	<i>Eryngium ovium</i>	Blue Devil	.6	.5	9/1	E		Y	Y	Y
Y	<i>Eucalyptus camaldulensis</i>	River Red Gum	50	35	1/64	E	Y	N	O	N
Y	<i>Eucalyptus melliodora</i>	Yellow Box	30	25	1/64	E	Y	N	O	N
o	<i>Eucalyptus microcarpa</i>	Grey Box	25	15	1/64	E	Y	N	O	N

Y	<i>Eucalyptus ovata</i>	Swamp Gum	30	20	1/64	E	Y	N	O	N
Y	<i>Eucalyptus viminalis</i>	Manna Gum	50	15	1/64	E	Y	N	O	N
Y	<i>Glycine tabacina</i>	Variable Glycine	Climber		1/16	M		Y	Y	Y
o	<i>Goodenia ovata</i>	Hop Goodenia	2.5	3	1/4	E		Y	Y	Y
Y	<i>Hymenanthera dentata</i>	Tree Violet	4	2.5	1/4	E	P	Y	Y	N
?	<i>Indigofera australis</i>	Austral Indigo	2	2	1/4	E		Y	Y	N
Y	<i>Linum marginale</i>	Native Flax	.8	.3	4/1	M	P	Y	Y	Y
Y	<i>Lomandra longifolia</i>	Spiny-headed Mat-Rush	1	1.2	4/1	E		Y	Y	Y
Y	<i>Microlaena stipoides</i>	Weeping Grass	.6		12/1	E	?	Y	Y	Y
Y	<i>Poa labillardieri</i>	Common Tussock-Grass	.8	.5	4/1	E	Y	Y	Y	Y
?	<i>Poa morrisii</i>	Velvet Tussock-Grass	.3	.3	10/1	M		Y	Y	Y
Y	<i>Rubus parvifolius</i>	Native Raspberry	1	2	4/1	E		Y	Y	Y
Y	<i>Schoenus apogon</i>	Common Bog-Sedge	.3		10/1	E		Y	Y	Y
Y	<i>Senecio quadridentatus</i>	Cotton Fireweed	1	1	4/1	E	Y	Y	Y	Y
o	<i>Solanum laciniatum</i>	Large Kangaroo Apple	3	3	1/25	E	Y	Y	Y	N
o	<i>Themeda triandra</i>	Kangaroo Grass	.4	.75	12/1	E	P	Y	Y	Y
Y	<i>Tricoryne elatior</i>	Yellow Rush-Lily	.5	.5	10/1	M		Y	Y	Y
Y	<i>Veronica gracillis</i>	Slender Speedwell	.3	1	4/1	M		Y	Y	Y
?	<i>Viminaria juncea</i>	Golden Spray	5	2	1/16	M		Y	Y	N
?	<i>Wahlenbergia communis</i>	Tufted Bluebell	.5	.15	8/1	M		Y	Y	Y
o	<i>Wahlenbergia gracilis</i>	Australian Bluebell	.5		8/1	M		Y	Y	Y

Key

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	Direct Seeding Y = species is suitable for Direct Seeding/ ? = species is suitable but seed availability may be a limit in factor is application

Vegetation Community 4 Grassland Complexes

Considerations for Species Use

Spp. Occurrence within this vegetation community	Species	Common Name	Height (m)	Width (m)	Suggested planting densities (no. stems per X m ²)	Establishment ease	Suitable for Direct Seeding	Suitable for planting under Powerlines	Within 10m of powerlines	Within 1.5m of Bike Path
o	<i>Acacia melanoxylon</i>	Blackwood	30	15	1/25	E	y	N	Y	N
Y	<i>Acaena echinata</i>	Sheep's-Burr	.4		8/1	E		Y	Y	Y
?	<i>Acaena ovina</i>	Australian Sheep's-Burr	.5		8/1	E		Y	Y	Y
Y	<i>Agrostis aemula</i>	Blown Grass	.1		12/1	M	P	Y	Y	Y
?	<i>Arthropodium strictum</i>	Chocolate Lily	1	.8	10/1	M		Y	Y	Y
o	<i>Calocephalus citerus</i>	Lemon Beauty-Heads	.5	1	10/1	E	?	Y	Y	Y
Y	<i>Calocephalus lacteus</i>	Milky Beauty-Heads	.3	.3	10/1	M		Y	Y	Y
o	<i>Carex breviculmis</i>	Short-stemmed Sedge	.1 5		10/1	E		Y	Y	Y
o	<i>Chloris truncata</i>	Windmill Grass	.4 5		10/1	E	Y	Y	Y	Y
o	<i>Convolvulus remotus</i>	Bindweed	Pr str at e	.6	1/16	M		Y	Y	Y
o	<i>Craspedia variabilis</i>	Common Billy Buttons	.3	1	4/1	M		Y	Y	Y

o	<i>Crassula helmsii</i>	Swamp Stonecrop	.3	.1	12/1	E		Y	Y	Y
o	<i>Danthonia caespitosa</i>	Common Wallaby-Grass	.4	.4	12/1	E	Y	Y	Y	Y
Y	<i>Danthonia duttoniana</i>	Brown-back Wallaby-Grass	.5		12/1	E	Y	Y	Y	Y
o	<i>Danthonia racemosa</i>	Clustered Wallaby-Grass	.2		12/1	E		Y	Y	Y
Y	<i>Eleocharis acuta</i>	Common Spike-Sedge	.9		4/1	E		Y	Y	Y
Y	<i>Eryngium ovinum</i>	Blue Devil	.6	.5	9/1	E		Y	Y	Y
o	<i>Linum marginale</i>	Native Flax	.8	.3	4/1	M	P	Y	Y	Y
?	<i>Lomandra longifolia</i>	Spiny-headed Mat-Rush	1	1.2	4/1	E		Y	Y	Y
Y	<i>Marsilea drummondii</i>	Common Nardoo	.3		4/1	M		Y	Y	Y
Y	<i>Microlaena stipoides</i>	Weeping Grass	.6		12/1	E	?	Y	Y	Y
Y	<i>Neopaxia australasica</i>	White Purslane	Prostrate		1/1	M		Y	Y	Y
Y	<i>Poa labillardieri</i>	Common Tussock-Grass	.8	.5	4/1	E	Y	Y	Y	Y
Y	<i>Pycnosorus chrysanthes</i>	Golden Billy Buttons	.3	1	10/1	M		Y	Y	Y
Y	<i>Schoenus apogon</i>	Common Bog-Sedge	.3		10/1	E		Y	Y	Y
o	<i>Senecio quadridentatus</i>	Cotton Fireweed	1	1	4/1	E	Y	Y	Y	Y
o	<i>Teucrium racemosum</i>	Grey Germander	.6	1	4/1	E		Y	Y	Y
o	<i>Veronica gracillis</i>	Slender Speedwell	.3	1	4/1	M		Y	Y	Y
?	<i>Viminaria juncea</i>	Golden Spray	5	2	1/16	M		Y	Y	N
o	<i>Wahlenbergia gracilis</i>	Australian Bluebell	.5		8/1	M		Y	Y	Y

Key

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	Direct Seeding Y = species is suitable for Direct Seeding/ ? = species is suitable but seed availability may be a limit factor is application

Vegetation Community 5 Swamp Grasslands

Considerations for Species Use

Spp. Occurrence within this vegetation community	Species	Common Name	Height (m)	Width (m)	Suggested planting densities (no. stems per X m2)	Establishment ease	Suitable for Direct Seeding	Suitable for planting under Powerlines	Within 10m of powerlines	Within 1.5m of Bike Path
o	<i>Acacia mearnsii</i>	Late Black Wattle	25	10	1/25	E	Y	N	Y	N
o	<i>Acacia melanoxylon</i>	Blackwood	30	15	1/25	E	y	N	Y	N
o	<i>Acacia pycnantha</i>	Golden Wattle	10	5	1/25	E	Y	N	N	N
o	<i>Aceana ovina</i>	Australian Sheep's-Burr	.5		8/1	E		Y	Y	Y
o	<i>Agrostis aemula</i>	Blown Grass	.1		12/1	M	P	Y	Y	Y
o	<i>Allocasuarina verticillata</i>	Drooping She-oak	11	6	1/25	E	Y	O	Y	N
o	<i>Atriplex semibaccata</i>	Creeping Saltbush	.3	3	4/1	E		Y	Y	Y
o	<i>Austrostipa scabra ssp falcata</i>		.2 5		10/1	E		Y	Y	Y
o	<i>Austrostipa semibarbata</i>		.3		10/1	E		Y	Y	Y
o	<i>Bossiaea prostrata</i>	Creeping Bossiaea	pro stra te	1. 5	4/1	M		Y	Y	Y

o	<i>Brunonia australis</i>	Blue Pincushion	.5	.1 5	4/1	M		Y	Y	Y
o	<i>Burchardia umbellata</i>	Milkmaids	.5		10/1	D		Y	Y	Y
o	<i>Bursaria spinosa</i>	Sweet Bursaria	6	3	1/9	E	P	Y	Y	N
Y	<i>Cheilanthes austrotenuifolia</i>	Rock Fern	.5	Sp re ad in g		M		Y	Y	Y
o	<i>Chrysocephalum semipapposum</i>	Clustered Everlasting	1	3	10/1	E		Y	Y	Y
o	<i>Danthonia laevis</i>	Wallaby-Grass	.4	.4	12/1	E		Y	Y	Y
o	<i>Danthonia pilosa</i>	Velvet Wallaby-Grass	.2	.3	12/1	E		Y	Y	Y
o	<i>Dianella revoluta</i>	Black-anther Flax-Lily	1	2. 5	4/1	E		Y	Y	Y
o	<i>Dicanthium sericeum</i>	Silky Blue-Grass	.5		12/1	E		Y	Y	Y
o	<i>Dichondra repens</i>	Kidney Weed	Pr os tra te	S pr ea di ng	10/1	E		Y	Y	Y
o	<i>Dillwynia cinerascens</i>	Grey Parrot-Pea	1. 5	1. 5	4/1	M		Y	Y	Y
o	<i>Einadia nutans</i>	Nodding Saltbush	.3	1. 2	9/1	E	?	Y	Y	Y
o	<i>Eleocharis acuta</i>	Common Spike-Sedge	.9		4/1	E		Y	Y	Y
o	<i>Enchylaena tomentosa</i>	Ruby Saltbush	1	1	¼	E		Y	Y	Y
o	<i>Eutaxia microphylla</i>	Small-leaved Eutaxia	pr os tra te	1. 5	1/1	M		Y	Y	Y
o	<i>Hymenanthera dentata</i>	Tree Violet	4	2. 5	¼	E	P	Y	Y	N
o	<i>Linum marginale</i>	Native Flax	.8	.3	4/1	M	P	Y	Y	Y
o	<i>Marsilea drummondii</i>	Common Nardoo	.3		4/1	M		Y	Y	Y
o	<i>Neopaxia australasica</i>	White Purslane	Pr os tra te		1/1	M		Y	Y	Y
o	<i>Poa labillardieri</i>	Common Tussock-Grass	.8	.5	4/1	E	Y	Y	Y	Y
o	<i>Poa morrisii</i>	Velvet Tussock-Grass	.3	.3	10/1	M		Y	Y	Y

○	<i>Poa sieberiana</i>	Tussock-Grass	.3	.4	10/1	E		Y	Y	Y
○	<i>Stylidium graminifolium</i>	Grass Trigger- Plant	.6	.3	10/1	M	P	Y	Y	Y
○	<i>Teucrium racemosum</i>	Grey Germander	.6	1	4/1	E		Y	Y	Y
○	<i>Vittadinia gracilis</i>	Woolly New Holland Daisy	.4		4/1	E		Y	Y	Y

Y	<i>Pycnosorus chrysanthes</i>	Golden Billy Buttons	.3	1	10/1	M		Y	Y	Y
Y	<i>Craspedia variabilis</i>	Common Billy Buttons	.3	1	4/1	M		Y	Y	Y
Y	<i>Goodenia pinnatifida</i>	Cut-leaf Goodenia	.5	.6	1/1	M		Y	Y	Y
Y	<i>Brachyscome basaltica</i>	Basalt Daisy	.6		4/1	M		Y	Y	Y
Y	<i>Brachyscome dentata</i>	Golden Daisy	.3	.6	4/1	M	P	Y	Y	Y
Y	<i>Chrysocephalum apiculatum</i>	Common Everlasting	.3	2	10/1	E		Y	Y	Y
Y	<i>Bulbine bulbosa</i>	Bulbine Lily	.6	.3	10/1	M		Y	Y	Y
Y	<i>Pimelea humilis</i>	Small Rice-flower	.5	1	10/1	M		Y	Y	Y
Y	<i>Lomandra filiformis</i>	Wattle Mat-Rush	.5	.2	9/1	M		Y	Y	Y
Y	<i>Pimelea curviflora</i>	Curved Rice-flower	.3	.6	10/1	M		Y	Y	Y
Y	<i>Stackhousia monogyna</i>	Creamy Candles	.3	.3	10/1	M		Y	Y	Y
Y	<i>Danthonia duttoniana</i>	Brown-back Wallaby-Grass	.5		12/1	E	Y	Y	Y	Y
Y	<i>Danthonia racemosa</i>	Clustered Wallaby-Grass	.2		12/1	E		Y	Y	Y
Y	<i>Dichelachne crinita</i>	Long Hair Plume-Grass	.1		12/1	E	Y	Y	Y	Y
Y	<i>Calocephalus citerus</i>	Lemon Beauty-Heads	.5	1	10/1	E	?	Y	Y	Y
Y	<i>Arthropodium strictum</i>	Chocolate Lily	1	.8	10/1	M		Y	Y	Y
Y	<i>Convolvulus remotus</i>	Bindweed	Pr str at e	.6	1/16	M		Y	Y	Y
Y	<i>Danthonia setacea</i>	Bristly Wallaby-Grass	.3	.4	12/1	E	Y	Y	Y	Y
Y	<i>Themeda triandra</i>	Kangaroo Grass	.4	.7 5	12/1	E	P	Y	Y	Y
Y	<i>Wahlenbergia gracilis</i>	Australian Bluebell	.5		8/1	M		Y	Y	Y
Y	<i>Eryngium ovinum</i>	Blue Devil	.6	.5	9/1	E		Y	Y	Y
Y	<i>Acaena echinata</i>	Sheep's-Burr	.4		8/1	E		Y	Y	Y
Y	<i>Austrostipa bigeniculata</i>		.2		10/1	E		Y	Y	Y
Y	<i>Carex breviculmis</i>	Short-stemmed Sedge	.1 5		10/1	E		Y	Y	Y
Y	<i>Chloris truncata</i>	Windmill Grass	.4 5		10/1	E	Y	Y	Y	Y
Y	<i>Danthonia caespitosa</i>	Common Wallaby-Grass	.4	.4	12/1	E	Y	Y	Y	Y

Y	<i>Danthonia linkii</i>	Wallaby-Grass	.4	.4	12/1	E		Y	Y	Y
Y	<i>Elymus scabrus</i>	Common Wheat-Grass	.2	.4	12/1	E		Y	Y	Y
Y	<i>Glycine tabacina</i>	Variable Glycine	Climber		1/16	M		Y	Y	Y
Y	<i>Microlaena stipoides</i>	Weeping Grass	.6		12/1	E	?	Y	Y	Y
Y	<i>Schoenus apogon</i>	Common Bog-Sedge	.3		10/1	E		Y	Y	Y
Y	<i>Senecio quadridentatus</i>	Cotton Fireweed	1	1	4/1	E	Y	Y	Y	Y
Y	<i>Tricoryne elatior</i>	Yellow Rush-Lily	.5	.5	10/1	M		Y	Y	Y
Y	<i>Veronica gracillis</i>	Slender Speedwell	.3	1	4/1	M		Y	Y	Y

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Vegetation Community 6 Riparian Scrub

Considerations for Species Use

Spp. Occurrence within this vegetation community	Species	Common Name	Height (m)	Width (m)	Suggested planting densities (no. stems per X m ²)	Establishment ease	Suitable for Direct Seeding	Suitable for planting under Powerlines	Within 10m of powerlines	Within 1.5m of Bike Path
Y	<i>Acacia mearnsii</i>	Late Black Wattle	25	10	1/25	E	Y	N	Y	N
Y	<i>Acacia melanoxylon</i>	Blackwood	30	15	1/25	E	y	N	Y	N
o	<i>Acacia paradoxa</i>	Hedge Wattle	4	5	1/9	E	Y	Y	Y	N
?	<i>Acaena echinata</i>	Sheep's-Burr	.4		8/1	E		Y	Y	Y
?	<i>Aceana ovina</i>	Australian Sheep's-Burr	.5		8/1	E		Y	Y	Y
?	<i>Adiantum aethiopicum</i>	Common Mainenhair	.4 5	Sp re ad in g		D		Y	Y	Y
o	<i>Arthropodium strictum</i>	Chocolate Lily	1	.8	10/1	M		Y	Y	Y
?	<i>Bossiaea prostrata</i>	Creeping Bossiaea	pr os tra te	1. 5	4/1	M		Y	Y	Y
Y	<i>Bursaria spinosa</i>	Sweet Bursaria	6	3	1/9	E	P	Y	Y	N
o	<i>Callistemon sieberi</i>	River Bottlebrush	10	6		M	P	Y	Y	N

o	<i>Calocephalus lacteus</i>	Milky Beauty-Heads	.3	.3	10/1	M		Y	Y	Y
o	<i>Carex breviculmis</i>	Short-stemmed Sedge	.15		10/1	E		Y	Y	Y
Y	<i>Carpobrotus modestus</i>	Inland Noon-flower	prostrate	3	4/1	M		Y	Y	Y
o	<i>Cassinia aculeata</i>	Common Cassinia	4	2	1/9	E	P	Y	Y	N
o	<i>Cassinia arcuata</i>	Drooping Cassinia	3	2	1/9	E	P	Y	Y	N
Y	<i>Clematis microphylla</i>	Small-leaved Clematis	Climber		1/16	M		Y	Y	Y
?	<i>Coprosma quadrifida</i>	Prickly Currant-bush	4	1.5	1/9			Y	Y	Y
o	<i>Danthonia caespitosa</i>	Common Wallaby-Grass	.4	.4	12/1	E	Y	Y	Y	Y
o	<i>Danthonia setacea</i>	Bristly Wallaby-Grass	.3	.4	12/1	E	Y	Y	Y	Y
o	<i>Dianella revoluta</i>	Black-anther Flax-Lily	1	2.5	4/1	E		Y	Y	Y
o	<i>Dicanthium sericeum</i>	Silky Blue-Grass	.5		12/1	E		Y	Y	Y
o	<i>Dichondra repens</i>	Kidney Weed	Prostrate	Spreading	10/1	E		Y	Y	Y
?	<i>Glycine tabacina</i>	Variable Glycine	Climber		1/16	M		Y	Y	Y
Y	<i>Goodenia ovata</i>	Hop Goodenia	2.5	3	¼	E		Y	Y	Y
?	<i>Gynatrix pulchella</i>	Hemp Bush	4	3	¼	M		Y	Y	N
Y	<i>Hymenanthera dentata</i>	Tree Violet	4	2.5	¼	E	P	Y	Y	N
o	<i>Indigofera australis</i>	Austral Indigo	2	2	¼	E		Y	Y	N
o	<i>Isolepis nodosa</i>	Knobby Club-Sedge	1.5	2	1/9	E	P	Y	Y	Y
?	<i>Leptospermum lanigerum</i>	Woolly Tea-Tree	6	3	1/1	E	P	Y	Y	N
o	<i>Linum marginale</i>	Native Flax	.8	.3	4/1	M	P	Y	Y	Y

Y	<i>Lomandra longifolia</i>	Spiny-headed Mat-Rush	1	1. 2	4/1	E		Y	Y	Y
Y	<i>Microlaena stipoides</i>	Weeping Grass	.6		12/1	E	?	Y	Y	Y
o	<i>Poa labillardieri</i>	Common Tussock-Grass	.8	.5	4/1	E	Y	Y	Y	Y
Y	<i>Rubus parvifolius</i>	Native Raspberry	1	2	4/1	E		Y	Y	Y
o	<i>Schoenus apogon</i>	Common Bog-Sedge	.3		10/1	E		Y	Y	Y
Y	<i>Senecio quadridentatus</i>	Cotton Fireweed	1	1	4/1	E	Y	Y	Y	Y
Y	<i>Solanum laciniatum</i>	Large Kangaroo Apple	3	3	1/25	E	Y	Y	Y	N
o	<i>Veronica gracillis</i>	Slender Speedwell	.3	1	4/1	M		Y	Y	Y
?	<i>Viminaria juncea</i>	Golden Spray	5	2	1/16	M		Y	Y	N
?	<i>Vittadinia gracilis</i>	Woolly New Holland Daisy	.4		4/1	E		Y	Y	Y
?	<i>Wahlenbergia gracilis</i>	Australian Bluebell	.5		8/1	M		Y	Y	Y

Key

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Vegetation Community 7 Escarpment vegetation

Considerations for Species Use

Spp. Occurrence within this vegetation community	Species	Common Name	Height (m)	Width (m)	Suggested planting densities (no. stems per X m ²)	Establishment ease	Suitable for Direct Seeding	Suitable for planting under Powerlines	Within 10m of powerlines	Within 1.5m of Bike Path
Y	<i>Acacia acinacea</i>	Gold-dust Wattle	25	4	¼	M	?	N	Y	N
Y	<i>Acacia implexa</i>	Lightwood	15	7	1/25	E	Y	N	Y	N
Y	<i>Acacia mearnsii</i>	Late Black Wattle	25	10	1/25	E	Y	N	Y	N
Y	<i>Acacia paradoxa</i>	Hedge Wattle	4	5	1/9	E	Y	Y	Y	N
Y	<i>Acacia pycnantha</i>	Golden Wattle	10	5	1/25	E	Y	N	N	N
Y	<i>Acaena echinata</i>	Sheep's-Burr	.4		8/1	E		Y	Y	Y
?	<i>Aceana ovina</i>	Australian Sheep's-Burr	.5		8/1	E		Y	Y	Y
?	<i>Agrostis aemula</i>	Blown Grass	.1		12/1	M	P	Y	Y	Y
Y	<i>Allocasuarina verticillata</i>	Drooping She-oak	11	6	1/25	E	Y	O	Y	N
o	<i>Arthropodium strictum</i>	Chocolate Lily	1	.8	10/1	M		Y	Y	Y
Y	<i>Atriplex semibaccata</i>	Creeping Saltbush	.3	3	4/1	E		Y	Y	Y
Y	<i>Austrostipa elegantissima</i>	Tall Spear-Grass	.8		10/1	M		Y	Y	Y
Y	<i>Austrostipa scabra ssp falcata</i>		.2 5		10/1	E		Y	Y	Y
o	<i>Austrostipa semibarbata</i>		.3		10/1	E		Y	Y	Y

<i>Banksia marginata</i>	Silver Banksia	10	5		E		Y	Y	N
<i>Bossiaea prostrata</i>	Creeping Bossiaea	prostrata	1.5	4/1	M		Y	Y	Y
<i>Bracteantha viscosa</i>	Sticky Everlasting	.8	1	4/1	M		Y	Y	Y
<i>Brunonia australis</i>	Blue Pincushion	.5	.15	4/1	M		Y	Y	Y
<i>Bulbine bulbosa</i>	Bulbine Lily	.6	.3	10/1	M		Y	Y	Y
<i>Burchardia umbellata</i>	Milkmaids	.5		10/1	D		Y	Y	Y
<i>Bursaria spinosa</i>	Sweet Bursaria	6	3	1/9	E	P	Y	Y	N
<i>Carpobrotus modestus</i>	Inland Noon-flower	prostrata	3	4/1	M		Y	Y	Y
<i>Cassinia arcuata</i>	Drooping Cassinia	3	2	1/9	E	P	Y	Y	N
<i>Cheilanthes austrotenuifolia</i>	Rock Fern	.5	Spreading		M		Y	Y	Y
<i>Chrysocephalum semipapposum</i>	Clustered Everlasting	1	3	10/1	E		Y	Y	Y
<i>Clematis microphylla</i>	Small-leafed Clematis	Climber		1/16	M		Y	Y	Y
<i>Convolvulus remotus</i>	Bindweed	Prostrate	.6	1/16	M		Y	Y	Y
<i>Correa glabra</i>	Rock Correa	3	3	¼	E		Y	Y	Y
<i>Danthonia linkii</i>	Wallaby-Grass	.4	.4	12/1	E		Y	Y	Y
<i>Danthonia pilosa</i>	Velvet Wallaby-Grass	.2	.3	12/1	E		Y	Y	Y
<i>Danthonia racemosa</i>	Clustered Wallaby-Grass	.2		12/1	E		Y	Y	Y
<i>Danthonia setacea</i>	Bristly Wallaby-Grass	.3	.4	12/1	E	Y	Y	Y	Y
<i>Dianella revoluta</i>	Black-anther Flax-Lily	1	2.5	4/1	E		Y	Y	Y
<i>Dicanthium sericeum</i>	Silky Blue-Grass	.5		12/1	E		Y	Y	Y

Y	<i>Dichelachne crinita</i>	Long Hair Plume-Grass	.1		12/1	E	Y	Y	Y	Y
Y	<i>Dichondra repens</i>	Kidney Weed	Prostrate	Spreading	10/1	E		Y	Y	Y
Y	<i>Dillwynia cinerascens</i>	Grey Parrot-Pea	1.5	1.5	4/1	M		Y	Y	Y
o	<i>Disphyma crassifolium</i>	Rounded Noon-flower	prostrate	2	9/1	M		Y	Y	Y
Y	<i>Dodonaea viscosa</i>	Wedge-leaf Hop-bush	3	3	¼	E	Y	Y	Y	N
Y	<i>Einadia nutans</i>	Nodding Saltbush	.3	1.2	9/1	E	?	Y	Y	Y
o	<i>Elymus scabrus</i>	Common Wheat-Grass	.2	.4	12/1	E		Y	Y	Y
Y	<i>Enchylaena tomentosa</i>	Ruby Saltbush	1	1	¼	E		Y	Y	Y
o	<i>Eutaxia microphylla</i>	Small-leafed Eutaxia	prostrate	1.5	1/1	M		Y	Y	Y
?	<i>Exocarpos cupressiformis</i>	Cherry Ballart	8	5	1/9	D		Y	Y	N
o	<i>Glycine tabacina</i>	Variable Glycine	Climber		1/16	M		Y	Y	Y
o	<i>Goodenia ovata</i>	Hop Goodenia	2.5	3	¼	E		Y	Y	Y
?	<i>Hardenbergia violacea</i>	Purple Coral-Pea	Climber		1/16	M		Y	Y	Y
Y	<i>Hymenanthera dentata</i>	Tree Violet	4	2.5	¼	E	P	Y	Y	N
?	<i>Indigofera australis</i>	Austral Indigo	2	2	¼	E		Y	Y	N

<i>Kennedia prostrata</i>	Running Postman	pro stra te	2. 5	4/1	E		Y	Y	Y
<i>Linum marginale</i>	Native Flax	.8	.3	4/1	M	P	Y	Y	Y
<i>Lomandra filiformis</i>	Wattle Mat-Rush	.5	.2	9/1	M		Y	Y	Y
<i>Microlaena stipoides</i>	Weeping Grass	.6		12/1	E	?	Y	Y	Y
<i>Myoporum viscosum</i>	Sticky Boobialla	2. 5	2	1/25	M		Y	Y	N
<i>Olearia ramulosa</i>	Twiggy Daisy-bush	2. 5	1	1/1	M		Y	Y	Y
<i>Pelargonium australe</i>	Austral Stork's-bill	.6	1	4/1	M		Y	Y	Y
<i>Pimelea curviflora</i>	Curved Rice-flower	.3	.6	10/1	M		Y	Y	Y
<i>Pimelea humilis</i>	Small Rice-flower	.5	1	10/1	M		Y	Y	Y
<i>Poa morrisii</i>	Velvet Tussock-Grass	.3	.3	10/1	M		Y	Y	Y
<i>Poa sieberiana</i>	Tussock-Grass	.3	.4	10/1	E		Y	Y	Y
<i>Rubus parvifolius</i>	Native Raspberry	1	2	4/1	E		Y	Y	Y
<i>Senecio quadridentatus</i>	Cotton Fireweed	1	1	4/1	E	Y	Y	Y	Y
<i>Solanum laciniatum</i>	Large Kangaroo Apple	3	3	1/25	E	Y	Y	Y	N
<i>Stackhousia monogyna</i>	Creamy Candles	.3	.3	10/1	M		Y	Y	Y
<i>Themeda triandra</i>	Kangaroo Grass	.4	.7 5	12/1	E	P	Y	Y	Y
<i>Tricoryne elatior</i>	Yellow Rush-Lily	.5	.5	10/1	M		Y	Y	Y
<i>Vittadinia gracilis</i>	Woolly New Holland Daisy	.4		4/1	E		Y	Y	Y
<i>Vittadinia muelleri</i>	Narrow-leaf New Holland Daisy	.3	.3	4/1	M		Y	Y	Y
<i>Wahlenbergia communis</i>	Tufted Bluebell	.5	.1 5	8/1	M		Y	Y	Y
<i>Wahlenbergia gracilis</i>	Australian Bluebell	.5		8/1	M		Y	Y	Y

Key

Vegetation Community Codes Y = definite species within the community o = species is represented occasionally within the community ? = species might be in the community, verification sought	Considerations for Species Use Codes Establishment Ease E = Easy M = Moderate D = Difficult
	Direct Seeding Y = species is suitable for Direct Seeding/ ? = species is suitable but seed availability may be a limit in factor is application

Vegetation Community 8 Saltmarsh Complex

Considerations for Species Use

Spp. Occurance within this vegetation community	Species	Common Name	Height (m)	Width (m)	Suggested planting densities (no. stems per X m ²)	Establishment ease	Suitable for Direct Seeding	Suitable for planting under Powerlines	Within 10m of powerlines	Within 1.5m of Bike Path
Y	<i>Bolboschoenus caldwellii</i>	Sea Club-Sedge	.9			E		Y	Y	N
Y	<i>Disphyma crassifolium</i>	Rounded Noon-flower	prostrate	2	9/1	M		Y	Y	Y
Y	<i>Isolepis nodosa</i>	Knobby Club-Sedge	1.5	2	1/9	E	P	Y	Y	Y
Y	<i>Sarcocornia quinqueflora</i>	Beaded Glasswort	prostrate	.5	12/1	M		Y	Y	Y

Key

Vegetation Community Codes Y = definite species within the community o = species is represented occasionally within the community ? = species might be in the community, verification sought	Considerations for Species Use Codes Establishment Ease E = Easy M = Moderate D = Difficult
	Direct Seeding Y = species is suitable for Direct Seeding/ ? = species is suitable but seed availability may be a limit in factor is application

Vegetation Community 9 Aquatic / Amphibious

Considerations for Species Use

Spp. Occurrence within this vegetation community	Species	Common Name	Height (m)	Width (m)	Suggested planting densities (no. stems per X m ²)	Establishment ease	Suitable for Direct Seeding	Suitable for planting under Powerlines	Within 10m of powerlines	Within 1.5m of Bike Path
o	<i>Bolboschoenus caldwellii</i>	Sea Club-Sedge	.9			E		Y	Y	N
Y	<i>Bolboschoenus medianus</i>	Marsh Club-Sedge	2			E		Y	Y	N
Y	<i>Carex appressa</i>	Tall Sedge	1.2	1	4/1	E		Y	Y	Y
Y	<i>Carex tereticaulis</i>	Common Sedge	1	1	4/1	E		Y	Y	Y
Y	<i>Crassula helmsii</i>	Swamp Stonecrop	.3	.1	12/1	E		Y	Y	Y
o	<i>Danthonia duttoniana</i>	Brown-back Wallaby-Grass	.5		12/1	E	Y	Y	Y	Y
Y	<i>Eleocharis acuta</i>	Common Spike-Sedge	.9		4/1	E		Y	Y	Y
o	<i>Isolepis nodosa</i>	Knobby Club-Sedge	1.5	2	1/9	E	P	Y	Y	Y
o	<i>Lythrum salicaria</i>	Purple Loosestrife	2	1	4/1			Y	Y	Y
Y	<i>Periscaria decipiens</i>	Slender Knotweed	.6	1	4/1	M		Y	Y	Y
Y	<i>Triglochin procera</i>	Water Ribbons	.5		1/4	D		Y	Y	Y

[illegible][illegible]

DIRECT SEEDING IN AUTUMN

ITEM	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
Seed collection (to be undertaken the year prior to revegetation activity)																			
Weed Control #																			
Seeding/watering/guarding*																			
Maintenance (annual program for at least the first 18 months)																			

* = Autumn direct seeding should not occur before the first break in weather (i.e. rainfall events have been sufficient to moisten soils at prepared sites)

DIRECT SEEDING IN SPRING

ITEM	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
Seed collection (to be undertaken the year prior to revegetation activity)																			
Weed Control #																			
Seeding/watering/guarding																			
Maintenance (annual program for at least the first 18 months)																			

= an additional spray to reduce summer growing weeds is not essential but will assist in long term weed management

**APPENDIX D - KEY SUPPLIERS FOR THE MOONEE PONDS
CREEK CATCHMENT** (as defined by the Moonee Ponds Creek Coordination
Committee)

INDIGENOUS PLANTS

GREYBOX AND GRASSLANDS INDIGENOUS NURSERY

Contact Peter Wlodarczyk
5369 5221

VICTORIAN INDIGENOUS NURSERY CO-OPERATIVE

Contact Judy Allen
9482 1710

WESTERN PLAINS FLORA

Contact Ian Taylor
5428 2738

PLANTING MATERIALS (stakes, guards, jutemat etc)

FERTOOL

Contact 9796 4433

SUREGRO

Contact 9558 1060

TREEMAX

Contact 9429 6000

SITE PREPARATION & MAINTENANCE CONTRACTOR

BUSHLAND RECOVERY Contact Mark Douglas 9458 3340	ERIC EVANS PTY LTD Contact Eric Evans 0418 100 630
GREYBOX AND GRASSLAND INDIGENOUS NURSERY Contact Peter Wlodarczyk 5369 5221	MERRI CREEK MANAGEMENT COMMITTEE Contact Judy Bush 9380 8199
PRACTICAL ECOLOGY Contact Lincoln Kerr 9490 1434	SAVE THE BUSH Contact James Gillespe 0418 503 348

APPENDIX E

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