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Wingecarribee Shire Council

**Welby Landfill Closure**

Revegetation Plan

wsp

June 2024

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## Welby Landfill Closure Revegetation Plan

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WSP acknowledges that every project we work on takes place on First Peoples lands.  
We recognise Aboriginal and Torres Strait Islander Peoples as the first scientists and engineers and pay our respects to Elders past and present.

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# 1 Introduction

This Revegetation Plan (the plan) sets out the requirements for the revegetation component of the former Welby Landfill Closure project (the project). The plan describes the standards to be applied for site rehabilitation and revegetation activities to be undertaken in accordance with the Landfill Closure Plan, Statement of Environmental Effects and the relevant biodiversity assessment reports prepared for the former Welby Landfill.

This plan must be read in conjunction with the project design drawings for site specific construction detail.

This plan has been prepared in reference to the following documents:

- Welby Landfill Closure Plan (WSP, 2024)
  - Environmental Guidelines: Solid Waste Landfills, (EPA, 2016)
  - South East Regional Strategic Weed Management Plan (Local Land Services , 2022)
  - Rural Lands Development Control Plan (Wingecarribee Shire Council , 2021)
  - Technical specification (PS135914-WSP-SYD-CIV-SPC-008 RevA) – (WSP, 2024)
  - Design drawings (WSP, 2024)
- 

## 1.1 The project

The project involves the remediation and closure of the former Welby Landfill, a 9.1-hectare site that ceased operation in 2002. The closure works consist of:

- Removal and off-site disposal of waste stockpiles
- Reshaping and stabilising the landfill including capping and batter reconstruction
- Revegetation of the site
- Aftercare and management of the site.

The final closure works are required for surrender of the site Environment Protection Licence (EPL number 20194). In accordance with the Welby Landfill Closure Plan (WSP, 2023), this Revegetation Plan is required to ensure that capping system is revegetated as soon as possible after its remediation, preferably within 6 months of capping, however this timing will be dependent on seasonality.

## 2 Biosecurity

All revegetation works are to adhere to the *South East Regional Strategic Weed Management Plan* (Local Land Services , 2022) and the project specific biodiversity assessment reports to ensure all identified pathological and biological risks are appropriately managed.

All imported plant stock and materials for landscaping and rehabilitation are to be free from weeds, pest and disease.

Plant stock should be locally sourced wherever possible to minimise transport of disease.

Plant and seed stock from commercial suppliers should be inspected and certified at the source to confirm the absence of pest and disease prior to transporting to site.

All care should be taken to avoid disturbance outside the designated works footprint on the landfill. Construction and revegetation contractors should take all precautions to avoid the spread of weeds and grass species outside the landfill area.

## 3 Landscape treatments

The primary aim of the site revegetation is to improve stability of the capping system by mitigating erosion risk. The preferred method for long term stabilisation of the cap is via using native species compositions that allow for rapid ground cover establishment and provide long-term ground surface protection, with minimal maintenance requirements. The detailed design drawings (WSP, 2024) should be referred to for location of the treatment areas.

The general revegetation treatments will be as follows:

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### 3.1 Cap area revegetation

Once earthworks are completed, the cap area will have a nominal 200mm of topsoil spread over finished surface levels. The area will be revegetated using shallow rooted native groundcover species to establish a long-term stable groundcover. Revegetation will be applied via Hydromulch with a suitable species mix and soil amelioration to provide rapid short term ground cover and long-term surface protection.

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### 3.2 Batter revegetation

Once batter reconstruction is completed, 200mm of topsoil will be spread over finished subgrade levels and completed area will be revegetated using shallow rooting groundcover, grass and shrub species applied via Hydromulch.

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### 3.3 Drain stabilisation

Constructed and reconstructed drains will be either lined with pitched rock riprap or grass surfaces. Grass will be applied by a combination of Turf Reinforcement Mat and Hydromulch. Specific drain treatment is defined in the project design drawings (WSP, 2024) and is dependent of expected flow velocities.

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### 3.4 Remaining areas

The remaining areas within the landfill footprint, outside the cap, drain and batter works, are currently largely covered with grass, predominantly *kikuyu* and other introduced species. Areas outside the disturbance footprint (as per section 3.1, 3.2 and 3.3 above) of the landfill are not proposed to be disturbed as part of the landfill closure plan. Revegetation works are limited to within the footprint as defined in the project drawings. Grass species are not to be installed in areas outside this footprint. This being bounded by the lower toe drain as the furthest extent of revegetation at the site.

While areas on the landfill outside the works are currently largely stable with this established vegetation, it may become desirable to implement a plan for removal of introduced vegetation and to establish a native grass and groundcover species mix over time. This would best be achieved via a combination of weed treatments, and installation of select replacement species applied via Hydromulch. This work would be preferably take a cautious staged approach to reduce potential for soil erosion by exposing large soil surface areas. A potential selective suitable species list has been included in Appendix B for future use if this approach is taken.

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### 3.5 Temporary treatments

During construction and works staging, temporary erosion control measures may be required to stabilise the above areas until vegetation has established to satisfactory coverage levels.

# 4 Rehabilitation materials

This section details the specific requirements of materials to be used in the revegetation of the landfill site.

Prior to undertaking rehabilitation, the rehabilitation contractor is to undertake soil testing of in situ soils to determine baseline chemical and physical soil properties. The soil test should provide guidance on the selection of suitable native species for revegetation and any soil amelioration requirements to be applied to maximise chances of long term revegetation success. Adequate and appropriate testing and amelioration should be undertaken, as excessive correction of soils used for native rehabilitation can lead to weed proliferation, but insufficient soil nutrient will likely lead to failure of revegetation techniques.

---

## 4.1 Topsoil

Topsoil is to be placed over subsoil finished surface level as shown in the project Drawings at nominal 200mm thickness (WP, 2024).

The Topsoil may be manufactured from various materials to achieve the desired intent of a material to support the establishment of vegetation.

Topsoil must not be classified as a silt, acid sulphate or sodic/dispersible soils.

Refer to section 3.4.2 of the project technical specification for acceptance criteria for topsoils. For deviation from these criteria, the contractor is to seek approval of the Designer, and may require additional testing and assessment to confirm suitability for the application

Site topsoil is to be used in preference to be imported topsoil where appropriate. Topsoil stockpiling is to be stored separately from subsoil.

Topsoil stripped from the top 100 mm layer of existing soil on batters is to be stockpiled and re used as topsoil on the site.

Site won topsoil material shall be tested and meet the specified criteria in section 3.4.2 of the project technical specification

Site won topsoil for reuse in revegetation should be tested and ameliorants added to aid in revegetation where appropriate.

Site won topsoil for reuse is to be free of contamination.

Site won Foundry Sand material shall be used on top of the subgrade level in the final crest cover soil, as per Drawings (WSP, 2024)not as final topsoil layer for revegetation.

Topsoil for revegetation purposes is to meet the criteria in section 3.4.2 of the technical specification and be generally:

- A friable sandy loam texture with good structure and particle size distribution
- Free from large clods, subsoils, weeds and any other deleterious or non-natural material
- Free from stones larger than 25mm.
- Contain suitable levels of organic matter
- Suitable pH range for the revegetation requirements – generally neutral pH.

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## 4.2 Herbicide

Herbicides used must be currently registered for the treatment of weeds by the Australian Pesticides and Veterinary Medicines Authority (APVMA). Use herbicides in accordance with the manufacturer's directions supplied with the product.

Information on registered herbicides may be obtained from the APVMA Internet site [www.apvma.gov.au](http://www.apvma.gov.au).

Pesticides are not to be applied in drinking water catchment area.

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## 4.3 Seed

Supply of seed for the application of revegetation via hydraulic measures or other is to include seed species in line with Appendix A this document or otherwise determined suitable to the site

Seed mix should be appropriate to the local landscape conditions including soil type, seasonality, aspect and environmental conditions.

NOTE: The currently proposed seed mix is primarily focused on rapid and long-term stabilisation of the disturbed soil surfaces to minimise erosion risk of the landfill cap and placed topsoil. It is noted that while a native seed mix would be preferable to enhance the ecology of the site long term, there is extensive existing invasive grass species present on the landfill site. The likelihood of these species out competing native species revegetation has determined the proposed species in Appendix A. If a long-term approach is taken to gradually replace invasive grasses with natives, then a staged and cautious approach should be taken to minimise risk of soil erosion. A potential species list has been included in Appendix B. It is observed that there would likely be a cost of implementation of replacing vegetation types across the wider site outside the disturbance footprint and an ongoing maintenance burden that council would have to consider.

Final growth height of selected species to be generally low native grass and low growth habit species and provide adequate for long-term erosion protection. Refer to technical specification and the drawings for locations of specific treatments of cap, batters and drains.

All seed used must be of the species and varieties listed in Appendix A. Substitution of species is not permitted without consultation and written approval from Wingecarribee Shire Council.

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## 4.4 Soil ameliorants and Fertiliser

Fertiliser shall be applied at rates to achieve the permanent vegetation community. The construction contractor should consider using mineral based fertilisers to ensure maximum utilisation of microbial amendments.

Fertiliser soil ameliorants must not be formulated to only achieve cover crop establishment at the detriment of the final native vegetation community.

Seeding treatments may use:

- Uncontrolled release fertiliser
- Controlled release fertiliser, or
- A mix of both fertilisers.

Fertiliser must be applied rates as defined by site soil tests.

Uncontrolled release fertilisers shall not be used where there may have a direct impact on the surrounding environment and vegetation communities and drinking water catchments.

Liquid fertilisers must not be used.

Fertiliser shall have an N:P:K analysis in accordance with Table 4.1 or as defined by site soil testing.

Table 4.1 Recommended fertiliser N:P:K Range

|   | <b>Uncontrolled Release</b> | <b>Controlled Release</b> |
|---|-----------------------------|---------------------------|
| N | 12-20                       | 10-22                     |
| P | 10-15                       | 5-15                      |
| K | 8-15                        | 5-15                      |

Soil ameliorants to be included in the subsoil surface interface as deemed appropriate by soil testing. These may include gypsum, lime, or other soil corrections to aid in stability and long term vegetation growth.

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## 4.5 Hydromulch and compost blankets

Any hydraulic application used in revegetation on this project must be free from:

- Matter toxic to plant growth
- Plant propagules
- Soil
- Rubbish
- Other deleterious materials.

Binder for hydro-mulching must be a natural (non-cross linked) co-polymer binder with the following characteristics:

- Biodegradable
- Readily dispersible
- Highly soluble
- Self-hydrating
- Display a delayed development of viscosity before final thickening takes place.

Soil stabilising polymers used specifically for erosion control must not be used for hydro-mulching operations.

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## 4.6 Mulch

Existing native vegetation proposed for removal as part of the works, may be mulched on site and stockpiled for reuse in revegetation works.

Mulch should be coarse ‘tub ground’ type for use in temporary or permanent erosion control.

Imported mulch must be certified weed and pathogen free and not contain any non-organic materials.

# 5 Preparation for revegetation

## 5.1 Weed Control

Weed suppression must be undertaken from award of contract until project completion to manage weeds at the site. Weed suppression in revegetation is required to ensure competition for resources, such as water and nutrients from unwanted species is minimised during the establishment phase of the final design mix and to minimise the potential spread into surrounding native bushland.

Weed suppression is to be undertaken on all revegetation areas within the project boundary. Biosecurity, weeds of national significance, state priority weeds, priority weeds in the South East Region and other weeds should be managed in accordance with local requirements and the South East Regional Strategic Weed Management Plan (Local Land Services, 2022).

Prior to the commencement of other ground preparation operations, the site shall be in a weed free condition. Weed control methods may include:

- Mechanical application of herbicide using boom spray or high-volume power applicator
- Manual application of herbicide from knapsack or similar applicator, or
- Manual methods including physical removal and disposal of weeds.

Weeds and revegetation grasses should be contained within the landfill footprint and not allowed to spread into surrounding lands.

## 5.2 Topsoil

Unless the topsoil is contaminated with pollutants or excessive weed seed load, the site won soil should be reused on site wherever feasible.

Topsoil stripping should only occur when soil is in a moist condition. If soils are too dry, then pulverisation is likely to occur, if too wet then soils are difficult to manage.

Topsoil should not be mixed with sub soils in stockpiles.

Topsoil stockpiling recommendations are in Table 5.1.

Table 5.1 Topsoil stockpiling recommendations

| Topsoil condition  | Stockpile recommendation   |
|--|--|
| Top layer organic topsoils containing valuable native seed species | <ul style="list-style-type: none"><li>– Separate contained stockpile</li><li>– Maximum stockpile height 1.5m</li><li>– Stockpile duration &lt;12months</li></ul>                           |
| Imported or site won topsoils generally                            | <ul style="list-style-type: none"><li>– Maximum stockpile height 2 m</li><li>– Stockpile duration &lt;12months</li></ul>   |
| Site won topsoils likely to contain undesirable weed species       | <ul style="list-style-type: none"><li>– Ideally remove and replace with imported clean topsoil</li><li>– Topsoil stockpiles are not to be placed in surrounding natural bushland</li></ul> |

| Topsoil condition                                     | Stockpile recommendation   |
|---|--|
|   | <ul style="list-style-type: none"> <li>— Weed treatment of vegetation prior to stripping</li> </ul> <p>Topsoil stockpile to be covered in plastic sheeting to burn off the weed in soil</p> <ul style="list-style-type: none"> <li>— Weed treatment of stockpile minimum 2 weeks prior to spreading</li> </ul> |
| Site won topsoils containing biosecurity weed species | Bury soils on site away from drainage areas or remove offsite for disposal in line with local waste regulations  |
| Problem or dispersive soils                           | <ul style="list-style-type: none"> <li>— Seek advice regarding soil amelioration</li> </ul>  |

## 5.3 Soil preparation

Along with testing and amelioration, surface preparation is key to the success of revegetation strategies.

### 5.3.1 Subsoil

Before spreading topsoil, the subsoil interface should be scarified or ripped to break up any compacted construction surfaces and to enable integration of the topsoil layer

On shallow slopes <4H:1V

- scarify lightly compacted subsoil surfaces with a tined implement to a depth of 50-100mm
- scarify lightly compacted subsoil surfaces with a tined implement to a depth of 50-100mm
- Ripping should be parallel with the contour (not directly up/down slope)
- On steeper slopes >4H:1V where ripping or scarifying is not feasible due to safety of machinery on side slopes, track walking up the slopes with a cleated tracked machine (such as a bulldozer) is suitable to loosen surface.

### 5.3.2 Topsoil

Nominal topsoil depth to be maximum 200mm depth on capped areas

Topsoil spreading in concentrated flow areas should have temporary erosion protection in place upon installation to aid in establishment of vegetation.

The existing topsoil material designated as uncontaminated and reusable to be reused may be installed in areas specified zones outlined in the Drawings (WSP, 2024)

Treat any undesirable grass/weed growth occurring on topsoil stockpiles with appropriate herbicide before spreading the topsoil on rehabilitation site. More than one application of herbicide may be required to eradicate weeds. Apply the last application of herbicide not less than 2 weeks before spreading or at the period recommended by the manufacturer.

On shallow slopes where it is safe to do so, lightly cultivate the topsoiled area to provide a roughened surface to aid in vegetation establishment. It is recommended to rip/cultivate parallel with the contour to minimise risk of surface erosion. To reduce soil roughness if required after ripping/scarification the topsoil layer is to be lightly compacted to achieve a target density ratio of 85% to allow for vegetation growth.

Where required, ameliorants must be spread at the rates specified by soil testing to the subsoil surface interface, and immediately incorporated into the subsoil. Ensure that ground preparation occurs immediately after the application of soil ameliorants.

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## 5.4 Hydro-mulching

Where Hydromulch is specified on the project design drawings (WSP, 2024) it is recommended to utilise the following options:

### 5.4.1 *Hydromulching:*

Hydro mulch to consist of a seed mix including suitable, sterile, annual fast growing cover crops and perennial native seed as per the target species in Appendix 1 as well as:

- fertiliser at defined ratios or as per soil test recommendations
- organic fibre mass
- soil binder (and dye as appropriate)
- combined with water into a slurry mixture and applied hydraulically to the prepared topsoil surface.
- Erosion protection and deviation of upslope water should be considered to aid in establishment.

### 5.4.2 *Compost blanket (or similar product)*

On areas where batter gradients are steep or concentrated flow is expected, and to aid in establishment of long-term successful vegetation on poor soils, compost blanket or similar is recommended.

- Compost blanket consists of:
- a mix of suitable, sterile, annual fast growing cover crops and
- perennial native seed as per the target species
- fertilisers
- cellulose fibre
- binder
- water
- added ameliorants, which change the properties of the soil to improve long term vegetation growth. These may include gypsum, lime, or other and an organic compost mix to aid in long-term grass growth.

### 5.4.3 *Application*

Seed to be used for each operation must be mixed, pre-treated, and placed into the sowing equipment on site. Seed must be sown within maximum five days of mixing and pre-treatment.

Hydromulching is to be implemented within maximum 2 days of completion of soil preparation or, if delayed by the weather conditions as soon as weather conditions permit. Treated topsoil surfaces should be repaired and prepared again if the surface has been impacted by rainfall and erosion.

To aid in success of revegetation, Hydromulch should not:

- Be placed in areas subject to concentrated flow unless TRM installed or other temporary erosion controls in place to protect surface
- Be installed in areas of standing water
- Be placed on surfaces that are over compacted
- Be installed on areas where topsoil has not been incorporated

Hydro-mulch, and compost blankets are to comprise the relevant materials listed in Table 5-2. Application rates are to be confirmed by soil testing and as per supplier recommendations.

Table 5-2 Proposed application rates (approximate)

| Material              | Rate per Hectare   |
|-----------------------|--|
| <b>Hydro-mulching</b> |  |
| Water                 | Straw: 50,000 litres/ha<br>Wood Fibre: 80,000 litres/ha<br>Sugar Cane: 90,000 litres/ha  |
| Ameliorant            | In accordance with site soil testing recommendations   |
| Seed                  | See Appendix A cover crop and perennial species (and refer to specialist recommendations based on soil tests, seasonality and site conditions) |
| Organic fibres        | 5000 kg/ha (Straw, Wood or Sugar Cane) or compost blanket  |
| Binder                | No less than 400 litres/hectare  |

Adjust the seed quantities using the purity and germination / viability certificates to ensure the application rates equivalent to 100% live seed.

Produce hydro-mulch slurry mixtures by adding the specified materials into the tank and agitate until a homogenous blend is obtained.

## 5.5 Preparation of vegetated drain surface

Grassed drains where Turf Reinforcement Mat (TRM) is specified as shown on the Drawings (WSP, 2024) shall meet the following requirements:

- TRM shall be manufactured from UV stabilised polypropylene.
- TRM shall be formed of woven polypropylene fibres oriented into a stable three-dimensional network which retains its structure during handling, placement, and long-term service.
- TRM shall have the properties listed in section 3.13 of the project technical specification (WSP, 2024)
- Shall include Topsoil, Hydromulch and seed mix placement in accordance with the manufacturer’s recommendations and advice of experienced soil scientist or vegetation consultant considering the proposed site conditions and application to the satisfaction of the Superintendent.
- Vegetation shall have a low growth habit, when established.

To aid in vegetation establishment, and to prevent erosion damage during this period, it is crucial to ensure that the seeded vegetation is of high enough quality to withstand a 20% AEP rain event. If not, temporary protection measures should be put in place to allow for proper growth.

## 6 Standards for completion

To assess the continued integrity and performance of the revegetation work, post closure monitoring should include regular visual inspections for dead or stressed vegetation and signs of erosion.

If damaged by a rainfall event, the topsoil is to be repaired based on superintendent discretion before reapplying the grass cover.

- Rehabilitation monitoring methods must at a minimum demonstrate:
- Prescribed ground cover as required by the contract and achieve no less than 95% at end of maintenance period.
- Must have no less than 50% of the design perennial species mix germinated at completion
- Must have weed burden less than or no more than equivalent to the pre disturbance weed inspection.
- Show no signs of erosion.

If the permanent vegetation should fail to establish or to adequately protect the soil surface from erosion for any reason during the construction or maintenance period, the area should be revegetated and/or protected with other erosion control measures as appropriate.

# 7 Maintenance

Maintenance of revegetated areas must be undertaken to ensure that defined performance criteria and project objectives are met. These actions, where necessary, may include:

- Watering
- Controlling weeds and/ or pests
- Planting additional species or reapplying seeding
- Incorporate composts to other soil improvements into the topsoil
- Increase the topsoil depth by topdressing

The Contractor is responsible for watering and fertilising the grass cover over an establishment period of 13 weeks or as approved by the Superintendent, in order to achieve the acceptable ground coverage.

At least 95% healthy grass coverage must be present at the end of the establishment period to the satisfaction of the Superintendent. The establishment period is included in the Contract period and required prior to practical completion.

It is recommended to mow or slash cover crops once well established to allow growth of target species. The initial mow should be high to avoid damage to underlying plants. Slashed grasses can be left in situ as organic mulch.

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## 7.1 Recommended maintenance regime

Inspect the revegetated treated area fortnightly and after runoff-producing rainfall. Make repairs as needed.

Watering the vegetation periodically is essential, especially in the first 7 days after establishment. Use low-pressure sprays because high-pressure jets can wash away the seed and mulch cover.

Watering should comply with specifications provided with the approved plans. Generally watering should vary according to weather and soil conditions.

Monitor site revegetation, particularly after rainfall, and appropriate maintenance and/or amendment to ensure that the revegetation is controlling erosion and stabilising soil slopes as required.

Areas must be re-seeded and mulched if the vegetation fails to establish or is damaged by runoff or construction activities.

# 8 Limitations

This Report is provided by WSP Australia Pty Limited (WSP) for Wingecarribee Shire Council (Client) in response to specific instructions from the Client and in accordance with WSP's proposal dated 11 March 2024.

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## 8.1 Permitted purpose

This Report is provided by WSP for the purpose described in the Agreement and no responsibility is accepted by WSP for the use of the Report in whole or in part, for any other purpose (Permitted Purpose).

# 9 References

EPA. (2016). *Environmental Guidelines: Solid Waste Landfills* . New South Wales Government .

Local Land Services . (2022). *South East Regional Strategic Weed Management Plan 2023-2027*. New South Wales Government .

Wingecarribee Shire Council . (2021). *Rural Lands Development Control Plan* .

# Appendix A

Recommended seed mixes



# A1 Species Mixes

## Ground Cover – general application for landfill stabilisation - hydromulch

Application rates to be determined by specialist hydromulch contractor based on soil testing and site conditions. Due to predominant existing kikuyu species at the site the below species are likely most suitable. Consult with a specialist hydromulch contractor to determine applicability of incorporating native seed mixes as per Appendix B.

| Species (Refer to Note 2)  |  | Application Rate (Kg/ha) | Ratio of Seed to Total Mix (%) |
|----------------------------|--|--------------------------|--------------------------------|
| Botanical Name             | Common Name  |                          |                                |
| Pennisetum clandestinum    | Kikuyu   | Tbc                      | Tbc                            |
| Elymus repens              | Couch  | tbc                      | tbc                            |
| Other suitable native seed | Local pasture blends   | tbc                      | tbc                            |
| Cover crops                | <p>Species mix to be determined by specialist contractor based on soil tests, seasonality and site conditions.</p> <p>Cover crop species are to be sterile (non-re-seeding), annuals or short lived perennials only such as <i>Lolium Multiflorum</i> (Annual Ryegrass), <i>Secale Cereale</i> (Winter Ryegrass), Oats and Millet</p> <p>General cover crop mix to be approximately</p> <ul style="list-style-type: none"> <li>— Annual cereals @ 25%</li> <li>— Annual or short lived perennial, sterile grasses @ 50%</li> <li>— Legumes @ 25%</li> <li>— Other as determined by local conditions</li> </ul> |                          |                                |

# Appendix B

Selective planting species list



## Native grasses and low tufting species for select revegetation areas

| Botanical name                    | Common name              |
|-----------------------------------|--------------------------|
| <i>Microleana stipoides</i>       | Weeping grass            |
| <i>Lepidosperma laterale</i>      | Swordsedge               |
| <i>Stypandra glauca</i>           | Nodding blue lily        |
| <i>Onocarpus teucroides</i>       | Forest raspwort          |
| <i>Entolasia marginata</i>        | Bordered panic grass     |
| <i>Dianella revoluta</i>          | Blue flax-lily           |
| <i>Daniella caerulea</i>          | Blue flax-lily           |
| <i>Dianella longifolia</i>        | Blueberry lily           |
| <i>Schoenus melanostachys</i>     | Black bog-rush           |
| <i>Hydrocotyle sibthorpioides</i> | Dwarf pennywort          |
| <i>Lomandra longifolia</i>        | Basket grass             |
| <i>Lomandra multiflora</i>        | Mat rush                 |
| <i>Anisopogon avenaceus</i>       | Oat seagrass             |
| <i>Austrostipa pubescens</i>      | Spear grass              |
| <i>Rytidosperma pallidum</i>      | Red-anther wallaby grass |
| <i>Echinopogon caespitosus</i>    | Bushy hedgehog grass     |

## Suitable shrub species – not to be installed on cap area

| Species (Refer to Note 2)          |                         |
|------------------------------------|-------------------------|
| Botanical Name                     | Common Name             |
| <i>Banksia spinulosa</i>           | Hairpin banksia         |
| <i>Hakea dactyloides</i>           | Finger hakea            |
| <i>Hakea sericea</i>               | Bushy needlewood        |
| <i>Polyscias sambucifolia</i>      | Elderberry panax        |
| <i>Persoonia lanceolata</i>        | Lance-lead geebung      |
| <i>Acacia myrtifoliua</i>          | Myrtle wattle           |
| <i>Bossiaea obcordata</i>          | Spiny bossiaea          |
| <i>Leptospermum trinervium</i>     | Flaky-barked tea-tree   |
| <i>Daviesia mimosoides</i>         | Blunt-leaf bitter-leaf  |
| <i>Olearia microphylla</i>         | Small-leaved daisy bush |
| <i>Leptospermum polygalifolium</i> | Yellow tea tree         |
| <i>Acacia terminalis</i>           | Sunshine wattle         |
| <i>Acacia longifolia</i>           | Long-leaved wattle      |
| <i>Persoonia linearis</i>          | Narrow-leaved geebung   |
| <i>Hibbertia aspera</i>            | Rough guinea flower     |
| <i>Allocasuarina littoralis</i>    | Black she-oak           |
| <i>Leucopogon setiger</i>          | Beard-heath             |
| <i>Monotoca scoparia</i>           | Prickly broom heath     |

## Suitable Tree species – not to be used on cap area

| Species                       |                        |
|-------------------------------|------------------------|
| Botanical Name                | Common Name            |
| <i>Eucalyptus sieberi</i>     | Black ash              |
| <i>Eucalyptus piperita</i>    | Scribbly gum           |
| <i>Eucalyptus scleropylla</i> | Grey gum               |
| <i>Eucalyptus punctata</i>    | Grey gum               |
| <i>Eucalyptus eugeniodies</i> | Thin- leaf stringybark |
| <i>Corymbia gummifera</i>     | Red bloodwood          |