

Sydney Trains Vegetation Management Scope of Works

<Project Title>

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Preamble

NOTE: ALL WORDING IN RED IS TO BE REPLACED OR REMOVED BEFORE THE SCOPE OF WORKS IS ISSUED

Scope and Purpose

This document is to be used in the development of a Scope of Works for vegetation and tree management under the Corridor Maintenance Panel.

The intent of the template is to ensure that all work on Sydney Trains land follows “best practice” vegetation management and that Sydney Trains complies with relevant legislation.

Before completion the Scope of Works

Before any vegetation management work is undertaken consult the sensitive sites register to ensure no work is being undertaken in these areas, also all vegetation management works should be in accordance with *EMS-09-PR-0003 Biodiversity* and the Biodiversity Management Maps for the area. Contact your environmental officer if sensitive sites are nearby or you need advice on interpretation of the requirements.

If you intend undertaking vegetation management with specialist heavy machinery such as a “forest mulcher” or “spyder slasher” you should first seek advice from an environmental officer.

How to prepare a vegetation management scope of works

Chose from the following types of vegetation and tree management activities that you intend to undertake (1.0 to 9.0) and use the appropriate clauses or the already prepared templates to put together the scope of works to be incorporated into Part D of the Request for Quotation (RFQ) for the Corridor Maintenance Panel S03/066 of from Sydney Trains approved suppliers.

Note that type in red type is instruction to project managers only and should be deleted from the scope of works.

1 Tree Removal works

Project managers should consider removing any trees of weed species in the vicinity of other trees to be removed for operational reasons. Common rail corridor weeds that should be removed include; privet, Cotoneaster, African olive, Camphor laurel, Coral tree, *Acacia saligna*, Hackberry, Mulberry, Radiata pine, Silky oak and Willows.

1.1 Cut height

Trees are to be cut to a level no higher than 150mm above ground level or if on a slope no higher than 150mm above the high side ground level.

1.2 Treatment with herbicide

All trees to be removed are to have their stumps treated with herbicide. Unless otherwise specified the herbicide will be neat (undiluted) herbicide with active constituent of 360g/litre glyphosate, eg. Round up ® 360. Cut stumps are to be treated with herbicide within ten (10) seconds of the final cut being completed. A compatible vegetable based dye must be used with all herbicide applications that result in a distinct colour that will clearly indicate where herbicide has been applied.

1.3 Failed treatment consequences

Where easy to kill tree stumps (such as eucalypts) reshoot within a six month period of treatment, the work performed will be considered by Sydney Trains to have not been carried out to specification and the contractor (at their expense) will be required to retreat shooting stumps using the frill technique. Chisel or axe frills are to be made into the vascular tissue of the tree stump at a maximum spacing of 100mm around the stump and the frills are to be filled with herbicide as per clause 1.2 above.

1.4 Herbicide use

All herbicide application must be undertaken by persons with the appropriate ChemCert accreditation. No herbicide is to be used that is not approved for that use in [EMS-09-RG-0073 Sydney Trains Pesticides Register](#) and any herbicide use in publically accessible areas must be undertaken in accordance with the [EMS-09-WI-0075 Sydney Trains Pesticide Use Notification Plan](#). A compatible vegetable based dye must be used with all herbicide applications that result in a distinct colour that will clearly indicate where herbicide has been applied. All pesticide use is to be recorded on an Environmental Protection Authority compliant daily pesticide application form that must be retained for five (5) years and must be presented on request by Sydney Trains or the EPA.

The Sydney Trains project manager must follow the appropriate pesticide use work instruction and approval process for all pesticide use on Sydney Trains land in accordance with [EMS-09-PR-0017 Pesticide](#).

1.5 Protection of surrounding vegetation

Care must be exercised not to damage surrounding vegetation when removing target trees including ground storey vegetation. Woody weed species (noxious or environmental) may be removed to better access target trees but they must be fully removed and treated with herbicide as per clause 1.2, 1.3 and 1.4 above. Under no circumstances are weed species to be lopped and not fully removed and treated with herbicide. Weed trees include Privet, Cotoneaster, African olive, Camphor laurel, Coral tree, *Acacia saligna*, Hackberry, Mulberry. Radiata pine, Silky oak and willow trees.

1.6 Waste management

[the project manager must delete two of the following options for this clause] All cut vegetation material is to be removed from site by the contractor by what ever method is desired by the contractor **or** All cut vegetation material is to be chipped on site and stockpiled on a site determined by Sydney Trains **or** All cut vegetation is to be left on the site in areas to be advised by Sydney Trains.

1.7 Trees to be removed

[the project manager must clearly define exactly what trees are to be removed, either by definition of species or individual trees that should be marked on site, or clearly marked on a plan to eliminate any confusion by the contractor)

Trees to be removed are as specified. Any weed species present in the vicinity of the trees to be removed are also be removed. Weed Species trees include Privet, Cotoneaster, African olive, Camphor laurel, Coral tree, *Acacia saligna*, Hackberry, Mulberry. Radiata pine, Silky oak and willow trees.

2 Tree Pruning works

2.1 Pruning technique and standard

All tree pruning works are to be undertaken in accordance with the Australian Standard AS 4373-1996 *Pruning of Amenity Trees*.

2.2 Use of spikes

No climbing spikes are to be used on any tree that is to remain on the site, ie climbing spikes can only be used on trees to be removed and treated with herbicide.

2.3 Protection of surrounding vegetation

Care must be exercised not to damage surrounding vegetation when removing or pruning target trees including ground storey vegetation. Woody weed species (noxious or environmental) may be removed to better access target trees but they must be fully removed and treated with herbicide as per clause 1.2, 1.3 and 1.4 above. Under no circumstances are weed species to be lopped and not fully removed and treated with herbicide. Weed trees are to include; Privet, Cotoneaster, African olive, Camphor laurel, Coral tree, *Acacia saligna*, Hackberry, Mulberry, Radiata pine, Silky oak and willow trees.

2.4 Waste management

[the project manager must delete two of the following options for this clause] All cut vegetation material is to be removed from site by the contractor by what ever method is desired by the contractor **or** All cut vegetation material is to be chipped on site and stockpiled on a site determined by Sydney Trains **or** All cut vegetation is to be left on the site in areas to be advised by Sydney Trains.

2.5 Trees to be pruned

[the project manager must clearly define exactly what trees are to be pruned. either by definition of exact clearances around specific infrastructure or individual trees to be pruned should be marked on site, or clearly marked on a plan to eliminate any confusion by the contractor)

Trees to be pruned are as specified. Any weed species present in the vicinity of the trees to be pruned are also be removed as outlined in clauses in section 1.0. Weed Species trees include Privet, Cotoneaster, African olive, Camphor laurel, Coral tree, *Acacia saligna*, Hackberry, Mulberry, Radiata pine, Silky oak and willow trees.

3 Revegetation or Landscape Construction Works

Use EMS-09-GD-0074 *Revegetation Guide* to decide on the most appropriate type of revegetation treatment then use EMS-09-TP-0066 *Revegetation Technical Specification Template* to prepare a scope of works for your revegetation project.

4 Platform Garden Bed Construction Works

Use EMS-09-TP-0095 *Station Garden Bed Technical Specification Template* to prepare a scope of works for your hard surface landscaping project, including planting trees in bus interchange or street plantings.

5 Bush regeneration Works

Use [EMS-09-TP-0064 Bush regeneration Technical Specification Template](#) to prepare a scope of works for your bush regeneration project. Note this type of weed control should be used for all areas supporting native vegetation.

6 Weed Control Works

Use [EMS-09-TP-0065 Weed Control Technical Specification Template](#) to prepare a scope of works for your weed control project.

7 Brush cutting (corridor cleanup)

7.1 Areas to be brush cut

Project managers should consider controlling all woody weed species in the area that is to be brush cut, to make the works a longer term solution to corridor improvement and will make follow up brush cutting operations easier. See section 6.0 Weed Control Works.

The project manager must clearly define exactly what areas are to be brush cut. This should ideally be done on a clearly marked up map or plan to eliminate any confusion by the contractor. Ensure that all sensitive sites (from the Sydney Trains sensitive site register) have been marked on the map or plan and clearly indicate that these areas are not to be brush cut.

Areas to be brush cut are as specified.

7.2 Protection of surrounding vegetation

Care must be exercised not to damage surrounding vegetation when carrying out brush cutting activities. Always check the map or plan provided with the scope to ensure that no work is undertaken in sensitive sites. Always obey any signs that indicate that the site is a sensitive area and do not enter these areas. Under no circumstances should shrubs or any grass species (either planted or naturally occurring) that does not respond well to cutting down be brush cut (eg *Lomandra* and *Dianella* sp.)

Do not brush cut into bushland or in areas where vegetation is predominately native species.

7.3 Herbicide application to brush cut areas

Under no circumstances are brush cut areas to be sprayed with herbicide unless they are formally landscaped garden beds that are having weeds and undesirable vegetation controlled, or unless herbicide is to be used sparingly along the base of infrastructure such as fence lines.

7.4 Herbicide use

All herbicide application must be undertaken by persons with the appropriate ChemCert accreditation. No herbicide is to be used that is not approved for that use in the [EMS-09-RG-0073 Sydney Trains Pesticides Register](#) and any herbicide use in publically accessible areas must be undertaken in accordance with the [EMS-09-WI-0075 Sydney Trains Pesticide Use Notification Plan](#). A compatible vegetable based dye must be used with all herbicide applications that result in a distinct colour that will clearly indicate where herbicide has been applied. All pesticide use is to be recorded on an Environmental Protection Authority compliant daily pesticide application form that must be retained for five (5) years and must be presented on request by Sydney Trains or the EPA.

The Sydney Trains project manager must follow the appropriate pesticide use work instruction and approval process for all pesticide use on Sydney Trains land in accordance with [EMS-09-PR-0017 Pesticide](#).

8 Tractor Mounted Grass Slashing

8.1 Areas to be slashed

The project manager must clearly define exactly what areas are to be slashed. This should ideally be done on a clearly marked up map or plan to eliminate any confusion by the contractor. Ensure that all sensitive sites (from the Sydney Trains sensitive site register) have been marked on the map or plan and clearly indicate that these areas are not to be slashed) Note the Biodiversity Management Plan maps clearly identify areas that should be slashed and can be used in the scope of works.

Areas to be slashed by tractor mounted slasher are as specified.

8.2 Protection of surrounding vegetation

Care must be exercised not to damage surrounding vegetation when carrying out slashing activities. Always check the map or plan provided with the scope to ensure that no work is undertaken in sensitive sites. Always obey any signs that indicate that the site is a sensitive area and do not enter these areas. Under no circumstances should shrubs or any grass species (either planted or naturally occurring) that does not respond well to cutting down be brushcut or slashed (eg *Lomandra* and *Dianella* sp.).

Under no circumstances is slashing to encroach into bushland or areas where vegetation is comprised of predominately native species or landscaped areas.

8.3 Herbicide application to slashed areas

Under no circumstances are slashed areas to be sprayed with herbicide unless herbicide is to be used sparingly along the base of infrastructure such as signal troughing or fence lines.

8.4 Herbicide use

All herbicide application must be undertaken by persons with the appropriate ChemCert accreditation. No herbicide is to be used that is not approved for that use in the [EMS-09-RG-0073 Sydney Trains Pesticides Register](#) and any herbicide use in publically accessible areas must be undertaken in accordance with the [EMS-09-WI-0075 Sydney Trains Pesticide Use Notification Plan](#). A compatible vegetable based dye must be used with all herbicide applications that result in a distinct colour that will clearly indicate where herbicide has been applied. All pesticide use is to be recorded on an Environmental Protection Authority compliant daily pesticide application form that must be retained for five (5) years and must be presented on request by Sydney Trains or the EPA.

The Sydney Trains project manager must follow the appropriate pesticide use work instruction and approval process for all pesticide use on Sydney Trains land in accordance with [EMS-09-PR-0017 Pesticide](#).

8.5 Slasher hygiene

The transfer of weed seed and other propagation material on tractor mounted slashers from one area to another is to be minimised by undertaking the following activities when moving from one section of rail corridor to another (or before you leave the corridor and move the slasher through a new set of Sydney Trains gates).

- Any loose vegetation material is to be removed from equipment
- All soil/mud material is to be scraped from the equipment
- All build up of vegetation material is to be scraped off blades of slasher

9 Landscape maintenance

9.1 Landscaped areas to be maintained

The project manager must clearly define exactly which landscaped areas are to be worked. This should ideally be done on a clearly marked up plan to eliminate any confusion by the contractor.

Landscaped areas to be maintained are as specified in the attached plans.

9.2 Timing

The project manager must outline how regularly maintenance activities are to be undertaken and the duration of the contract.

The maintenance activities outlined in clause 9.3 are to be undertaken at an interval of every 4 weeks/ 6 weeks/ 3 monthly/ (the project manager must indicate) for the duration of the contract period which will extend to(insert).

9.3 Landscape maintenance activities

The project manager must indicate from the following clause which activities are to be undertaken for the scope of works.

All activities listed must be undertaken at each site visit, or in an interval as indicated.

The following activities are to be undertaken and within the time frames indicated.

Weed control and herbicide application (monthly)

- Spot spraying hard surfaces where weeds and other vegetation has grown in hard surfaces of the site using glyphosate 360g/Lt.
- Weeding of planter/ garden beds is to be undertaken by the following method that is the most appropriate to eliminate any off target damage to desirable vegetation. Spot spraying or cut and painting with glyphosate 360g/Lt, or hand removal is to be used. All weed species (declared noxious or accepted environmental weeds) and any invasive exotic grass is to be controlled within the landscaped areas of the site.
- Prevent weeds from setting seed or other propagules. Weeds should never exceed 10% cover in any section of landscaped areas.
- Non-target species and areas must be reinstated if damaged by herbicide application.

Turf management (monthly)

- Turf replacement as defined in the site plan using the species to match surrounding areas / a soft leaf buffalo variety (project manager to select). New turf is to be laid on a suitably prepared bed free of existing grass and weeds and composed of a friable, cultivated and levelled soil surface. After laying turf the site is to be top dressed with a suitable garden soil free of weed material to remove any depressions, including the transition from new to old turf. Turf is to be watered immediately it is laid and again after top dressing. Turf is to be watered as required to maintain optimum moisture status. Once established and after a period of 1 month new turf is to be fertilised using a proprietary lawn food suitable for the species of turf used.
- Turf maintenance will include mowing and edging. Rubbish and litter will be removed prior to mowing. Turf will be mowed to a maximum height of 40mm and a minimum height of 20mm. Where any turf on the site meets hard surfaces such a paths and garden edging it to be trimmed neat to the hard surface. Where excess grass clippings exist and cannot be mulched into the grass with out smothering any part of the grass swath then those excess clippings are to be removed from site.

- Weed control in turf is to be undertaken to control non grass weeds in turf using registered selective herbicides according to manufacturer's recommendation. A vegetable dye is to be added to herbicides that clearly shows the extent of the application.

Waste disposal (at each visit)

- All waste material is to be removed from site and disposed of at a licensed waste/recycling facility, including excess turf clippings, pruned branches litter etc.

Pruning and plant maintenance (yearly or as required)

- Prune shrubs and ground covers that are encroaching into public pathways and access ways. Under no circumstances should the lower branches be removed from shrub species purely to raise the crown as this will expose ground to colonisation with undesirable species.
- Formative or directional pruning of specimen trees is to be carried out as per the Australian Standard AS 4373-2007 *Pruning of Amenity Trees*.
- Formative pruning of station platform specimen trees is to be undertaken by removing lower branches from the trunk to lift crown to improve vision under the canopy. Only remove branches where trunk diameter exceeds 100mm. Do not remove excessive lower branches to alter the natural form of the tree
- Prune or remove heavily damaged branches, branches resulting in poor tree form, split leaders or rubbing lateral branches
- No lopping or tip pruning of specimen trees is to be carried out. Reduction pruning, where required to lower the height of trees is to be carried out according to the Australian Standard AS 4373-2007 *Pruning of Amenity Trees*.
- Pruning for horticultural purposes such as roses is to be undertaken using "best practice" pruning techniques.
- Remove dead, dying or severely damaged plant material and dispose of off site
- Train climbing plants as required, train tendrils of climbing plants to entwine the climbing frame or to lift self clinging vines from the ground to the direction of the target wall.
- Fertilise plantings by applying 10 grams of slow release fertilizer to each plant. Fertilizer to have a N:P:K ratio of 18:3:10 or horticulturalists recommendation per species.

Mulching (yearly)

- Re-mulch **planting/ garden beds/ individual trees** on the site using a blend of woodchip and leaf material commonly marketed as "Forest Blend". Mulch is to be free of soil, weed material vermin and any foreign material. Mulch is to be laid to a depth of 75 mm over the landscaped bed taking care to keep free of desirable plant stems to remove the risk of collar rot.

Replanting (as required)

- Replanting of landscape areas **(the project manager is to refer to appropriate clauses in the Revegetation specification see section 3.0 of this document)**.
- Removal of redundant tree guards and stakes stakes from site and dispose of off site (or recycle elsewhere)

Disease and insect management (as required)

- Report to Sydney Trains any incidence of disease and insect damage that may cause long term damage to plantings or established plant stock. Treatment of fungal or insect damage will occur on approval by Sydney Trains. All pesticide applications must be in accordance to clause 9.4.

9.4 Herbicide and or insecticide use

All herbicide or insecticide application must be undertaken by persons with the appropriate ChemCert accreditation. No pesticide is to be used that is not approved for that use in the [EMS-09-RG-0073 Sydney Trains Pesticides Register](#) and any herbicide use in publically accessible areas must be undertaken in accordance with the [EMS-09-WI-0075 Sydney Trains Pesticide Use Notification Plan](#). A compatible vegetable based dye must be used with all herbicide applications that result in a distinct colour that will clearly indicate where herbicide has been applied. All pesticide use is to be recorded on an Environmental protection Authority compliant daily pesticide application form that must be retained for five (5) years and must be presented on request by Sydney Trains or the EPA.

The Sydney Trains project manager must follow the appropriate pesticide use work instruction and approval process for all pesticide use on Sydney Trains land in accordance with [EMS-09-PR-0017 Pesticide](#).

10 References

- EMS-09-FM-0057 *Daily Pesticide Application Forms*
- EMS-09-GD-0070 *Identification of Common Rail Corridor Weeds*
- EMS-09-GD-0074 *Revegetation Guide*
- EMS-09-TP-0064 *Bush regeneration Technical Specification Template*
- EMS-09-TP-0065 *Weed Control Technical Specification Template*
- EMS-09-TP-0066 *Revegetation Technical Specification Template*
- EMS-09-TP-0095 *Station Garden Bed Technical Specification Template*
- EMS-09-RG-0073 *Sydney Trains Pesticides Register*
- EMS-09-WI-0053 *Noxious and Environmental Weed Herbicide Application*
- LANDCOM "Bluebook" *Soils and Construction*, Vol 1. March 2004.
- Department of Land and Water Conservation's, *Erosion and Sediment Control Technical Handbook or Field Guide*
- Pesticides Act 1999*

Appendix A: Site Plan

INSERT SKETCHES OR MAPS OF THE EXTENT OF THE WORK AREA. (If Required)

Ensure that the boundaries of the work area can be fully defined by kilometrege or suitable landmarks.