

Town Planning Information Sheet 18

REQUIREMENTS OF A REHABILITATION PLAN EXTRACTIVE INDUSTRY ACTIVITIES

INTRODUCTION:

This information sheet is an advisory document outlining the minimum requirements that a proponent of an extractive industry is required to address in the preparation of a rehabilitation plan.

The following information is to assist in ensuring that all necessary measures are considered in preserving or enhancing the ecosystem functions of the area to be rehabilitated.

Publications such as *Mine Rehabilitation Handbook* produced by the Australian Mining Industry Council and *Best Practise in Environmental Management and Mining* produced by the Federal Environment Protection Agency are also recommended reference sources.

OBJECTIVES:

It is critical that a series of rehabilitation objectives for the site be established, which have regard to the particular functions of the ecosystem and these should include matters such as biodiversity, habitat, fauna corridors, stream bank protection, shading, and scenic amenity.

The objectives will need to identify **short-term** (pre-initial planting), **long-term** (post maintenance phase) and **end use** of the site (expected final outcome). All reflecting the need for minimizing disturbance and undertaking progressive rehabilitation as site resource extraction occurs. The ultimate goal of rehabilitation is the creation of a self-sustaining and functional ecosystem.

Short Term

A plan shall set out in detail the proposed rehabilitation works, how the works will be undertaken and the sequence and timing of the works.

Long Term

A plan shall identify the practises, schedules and responsibilities that will need to be maintained over an establishment period to ensure the long term success of the rehabilitation. Usually the maintenance term will be for a minimum of two growing seasons but will depend on the success of the planting and maintenance programme.

This detail should also include specific indicators for monitoring the success of rehabilitation.

End Use

The final concept plan of the site needs to establish the end use/s and the general characteristics at the completion of rehabilitation. This critically provides the basis for rehabilitation activities throughout the life of the project.

REHABILITATION PLAN TO INCLUDE THE FOLLOWING

The Rehabilitation Plan shall outline the measures proposed to ensure an adequate quantity of topsoil will be obtained for rehabilitation. This should entail procedures for stripping and stockpiling. The following information should be considered / provided within the Plan:

Soil Management

Outline the measures of soil management to be undertaken which will include:

- *Soil removal*, topsoil together with plant and leaf litter should be separated and removed from the underlying material. Depending on the soil profile, up to 300mm of topsoil may need to be stripped. Details are to be provided of site assessment undertaken by appropriately qualified consultant.
- *Soil Respreading*, should be respread as soon as possible after stripping in order to maximise its fertility, seed viability and microbial activity. The Rehabilitation Plan shall indicate depth of respread soil and location.
- *Soil stockpiling*, where soil cannot be respread immediately, it should be stockpiled to no more than 2.0 metres in height. This is to reduce the risk of a larger volume of topsoil self composting, killing micro-organisms and reducing any temporary self seeding vegetation reaching the deepest parts of the stockpile. The Plan shall indicate the location and dimensions of stock piles.

Weed and Pest Management

A Plan shall identify key management and maintenance actions that will be necessary to reduce the likelihood of colonisation of weed species, and management precautions to control pests.

Seedbed Preparation

Documentation shall be provided within the plan on the measures that will be undertaken to ensure that seed bed and/or planting soil will be in a condition able to support the rehabilitation. Certain treatments maybe required depending on the physical and chemical properties of the soil, and the species of revegetation being introduced. An indication of what procedures are to be taken shall be provided which needs to include soil amendment and/or fertilizer requirements, soil moisture preparation, aeration, weed removal and mulching etc.

Erosion and Sediment Control

The plan will be required to demonstrate measures of permanent soil control including drainage channels and dams and methods to be used for the control of wind blown soil, where required.

Revegetation

Species should be local and suitable for the area where the on-site conditions need to take into account appropriate soil types and drainage.

The Plan shall include but not necessarily limited to, the following:

- determination of appropriate revegetation species;
- identification of suitable suppliers;
- quality and timing of plant deliveries;
- planting procedures;
- planting schedule; and
- protection measures going to be utilized.

Maintenance

Maintenance of a rehabilitated site can be the difference between the ultimate success or failure of the project. Clear and concise practises, schedules, and responsibilities shall be included within the Plan, to ensure maintenance is undertaken over the establishment stage and in the long term. The maintenance practises will need to include, but not limited to the following;

- routine maintenance and repairs;
- replanting failure;
- erosion repair;
- fire management;
- pest and weed control;
- fauna management;
- watering;
- further soil modification (fertilisers, amendment); and
- monitoring.

Monitoring

The Rehabilitation Plan shall specify indicators for monitoring the success of the rehabilitation that are consistent with the Plans 'Objectives" and at least include the following:

- Physical (stability, resistance to erosions), and
- Ecological (plant condition, fauna disturbance, human disturbance, species richness, density, canopy cover, weed colonisation).

The Plan shall also determine reporting requirements for the monitoring program as they may be required by the Council to demonstrate the success or implementation of the Rehabilitation Plan.

Costing

Costing schedule of all the components of the Rehabilitation Scheme shall be included to assist in establishing performance bonding requirements that will be applied to the site.

Performance of the rehabilitation works will be linked to a monetary performance bond. Bond relinquishment may be incremental and linked to a set of milestones stipulated in the Rehabilitation Plan. Bonding arrangements are to be commensurate with the total cost of the rehabilitation works as determined by Council.

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INFORMATION ONLY.
VERIFICATION OF THE INFORMATION CONTAINED HEREIN IS
RECOMMENDED.**