



**WARRNAMBOOL**  
CITY COUNCIL

## **Environmental Management Plan Guidelines**

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## 1. INTRODUCTION

### 1.1. Purpose

Environmental Management Plans (EMPs) are documents detailing the potential environmental impacts of a proposed development and the ways in which these impacts may be reduced through management strategies and site practices. The EMP Template and Guidelines have been developed to ensure that adequate environmental management procedures are followed during a project's construction in Warrnambool and to streamline Council processes for responding to submitted EMPs.

The EMP Template and Guidelines cover the various aspects of construction site management and provide a range of actions and alternatives to minimise the impacts of activities on the environment in and outside the worksite. They have been designed to assist the development industry to understand Council requirements for EMPs by providing a standard format for EMP submissions to Council, and clearly stated information and suggested acceptable site management measures for approval. The EMP guidelines are designed to assist the development industry to comply with their statutory responsibilities and reduce the likelihood of developers being faced with Council or EPA enforcement and fines, reduce the impacts of works on the environment and neighbours, and improve working conditions on site.

### 1.2. Enforcement and Legislation

All contractors, consultants and developers operating in the Warrnambool municipality must comply with these guidelines and standards where applicable, as well as the appropriate legislation, regulations, environmental policies and local planning requirements. Contractors, consultants and developers are responsible for ensuring compliance with all legal obligations.

Regulatory requirements and additional guidance may include (but are not limited to) the following:

- Aboriginal Affairs Victoria (2018) Aboriginal Heritage Regulations
- Environment Protection Authority Victoria (2020) Civil construction, building and demolition guide, Publication 1834
- Environment Protection Authority Victoria (2021) Victorian guidelines for water recycling, Publication 1910.2
- Environment Protection Authority Victoria (2009) Industrial Waste Resource Regulations
- Victorian Government (2017) Agricultural and Veterinary Chemicals (Control of Use) Regulations
- Worksafe Victoria (2017) Industry Standard - Contaminated Construction Sites, Construction and Utilities

Relevant legislation may include (but is not limited to) the following:

- Commonwealth of Australia (1999) *Environment Protection and Biodiversity Conservation Act*
- Victorian Government (2017) *Environment Protection Act*
- Victorian Government (1975) *Wildlife Act*
- Victorian Government (1986) *Prevention of Cruelty to Animals Act*
- Victorian Government (1987) *Planning and Environment Act*
- Victorian Government (1988) *Flora and Fauna Guarantee Act*
- Victorian Government (1992) *Agricultural and Veterinary Chemicals (Control of Use) Act*
- Victorian Government (1994) *Catchment and Land Protection Act*
- Victorian Government (2004) *Occupational Health and Safety Act*
- Victorian Government (2006) *Aboriginal Heritage Act*
- Victorian Government (2008) *Public Health and Wellbeing Act*
- Victorian Government (2009) *Environment Protection (Industrial Waste Resource) Regulations*

### 1.3. How to Use the Template and Guidelines

The EMP Template contains four sections:

- Risk Assessment Checklist – used to identify potential issues and overall risk these issues pose to the environment;
- Site Plan – used to provide a plan of the site detailing the locations of environmental protection measures used;
- Site Environmental Protection Measures – used to provide details of the management measures that will be implemented on site to mitigate and manage the potential issues; and
- Designs of Environmental Protection Measures – used to show the designs of the environmental protection measures that will be installed on site.

The EMP Guidelines include information and reference materials to aid in the development of an EMP. These include some suggested information and environmental measures to include in the EMP template. This information is by no means comprehensive or exclusive, other measures can be included in the template provided they are effective and conform to relevant regulatory requirements. The Guidelines should be used in conjunction with relevant legislation, regulations and guidelines as well as relevant Australian Standards.

Where an EMP is required under a planning permit, all sections of the EMP must be filled and submitted for Council approval. Please note that where criteria are deemed 'Not Applicable' to a site, an explanation is required – e.g. If no flora and fauna are present on site, evidence is required such as an acceptable flora and fauna assessment and/or Council assessment. Works cannot commence until Council has approved the EMP.

Where an EMP is required under a planning permit, the EMP must be endorsed by Council before works commence and the endorsed plans must be displayed on site during the works.

## 2. RISK ASSESSMENT CHECKLIST

The Risk Assessment Checklist provides a space to fill in the sources and causes of potential environmental issues, as well as the proximity and nature of the impacted environment. The checklist includes the main environmental aspects of noise, lighting, dust, erosion and sediment, waste, chemicals, significant flora and fauna, weeds and pests and archaeological heritage

### 2.1. Issues

All issues within each environmental aspect must be addressed. Some issues have already been included, however site specific details for these are required and items that have influenced the risk level chosen should also be included. The blank boxes included at the bottom the plan are provided to detail any additional site specific aspects and issues that may need to be included. Refer to appropriate legislation and regulations for help and guidance when addressing each issue.

### 2.2. Risk Matrix

The Risk Assessment Checklist requires that the overall risk of each environmental aspect of the site be determined using the likelihood of an issue occurring (without preventative measures) and the severity of the consequence of the issue occurring (without preventative measures). These can be determined using the below definitions and risk matrix. The likelihood, consequence and overall risk for each aspect must be recorded in the right hand column of the Checklist.

#### 2.2.1. Likelihood

- Rare: Unlikely to occur during the project even if controls are missing.
- Unlikely: May occur once or twice if preventative measures are not applied.
- Likely: will occur more than once or twice but less than weekly if preventative measures are not applied.
- Certain: will occur more often than weekly if preventative measures are not applied.

#### 2.2.2. Consequence

- Minor: No or minimal adverse environmental or social impacts.
- Moderate: Moderate undesirable environmental or social impacts.
- Major: Major adverse environmental or social impacts.
- Catastrophic: Significant damage or impact on environment or community.

### 2.2.3. Overall Risk:

	Consequence			
Likelihood	Minor	Moderate	Major	Catastrophic
Rare	Low	Low	Medium	Medium
Unlikely	Low	Medium	Significant	Significant
Likely	Medium	Significant	Significant	Significant
Certain	Medium	Significant	Significant	Significant

The level of risk is used to help rank your risks. Environment protection measures will need to be identified which eliminate or reduce the level of risk, as far as reasonably practical, that your activities present.

The environmental protection measures that are to be used on site to minimise the risk must be detailed as described in Section 3 below. .

## 3. SITE PLANS AND ENVIRONMENTAL PROTECTION MEASURES DETAILS

The Site Plans must provide an overview of the work site and a visual representation of the environmental controls detailed in Section 4 of these Guidelines. There are two site plans to be provided along with details of the Site Environment Protection Measures. These plans must be prepared by a suitably qualified person.

### 3.1. Site Plan – Types and Locations of Environmental Protection Measures

This Site Plan is to provide a map of the site and surrounding area along with the types and locations of environmental protection measures and other relevant site features. The plan must be clear and easily interpreted, with all necessary protection measures and features to Council satisfaction.

The Site Plan must include (but is not limited to) the following:

- Aerial image of site and minimum 50m around all sides of work site including locations of noise, lighting, dust, erosion and sediment receptors
- Legend
- North arrow
- Scale
- Work site boundary
- Sediment control measures
- Stockpiles
- Site office

- Site drainage patterns including exit points
- Refuelling area
- Chemical storage area
- Wash down area
- Bunding and spill kits
- Access point(s)
- Site parking
- Truck route
- Existing water bodies on and adjoining site (within at least 200m)
- Overhead and underground utilities
- Areas of native vegetation including trees (both to be retained and removed)
- Protection measures for flora and fauna
- Areas of cultural heritage sensitivity
- All protection zones (including vegetation, tree and heritage)
- Environmental Significance Overlay (if applicable)
- Significant Landscape Overlay (if applicable)

### 3.2. Site Environment Protection Measures

The Site Environment Protection Measures table must include the details of management measures that will be implemented for each environmental aspect, see Section 4 of these Guidelines for further information.

### 3.3. Designs of Environmental Protection Measures Plan

This plan is to show the designs and specifications of all the environmental protection measures detailed in the EMP. A space for general notes is also provided. All designs and specifications must meet Council and relevant Authority standards.

Designs and specifications must include (but are not limited to):

- Sediment control measures
- Erosion control measures
- Bunding
- Site compound details
- Site access points
- Flora, fauna and tree protection measures
- Waste containment measures
- Water diversion structures
- Stockpile storage
- Waste containment measures
- Vehicle cleaning measures



The EMP must then be signed by all staff relevant to the development and implementation of the EMP (such as the developer, consultant and contractor) prior to works commencing.

## 4. ENVIRONMENT PROTECTION MEASURES

The Environment Protection Measures table provides a space to fill in the details of the management measures to be implemented for each environmental aspect. Please note that contractors may choose any method that is acceptable to Council even if it is not stipulated in the measures listed below. Additional measures may be required to address site specific issues and additional aspects may be added as necessary. Refer to the Civil construction, building and demolition guide, EPA publication 1834, for further measures to manage risk from construction, building and demolition. All measures to be used must be clearly specified in the appropriate space.

### 4.1. Management

This section is to provide details of the overall site management and implementation of the EMP. The following provides details of the information required and some suggestions for acceptable management measures. These may be adjusted where necessary and additional measures may be proposed or required for some sites.

#### Responsibilities:

- Include the names and contact details (phone and email) for those responsible for the implementation of the EMP and works on site (e.g. contractors, site supervisors, superintendents, consultants, developers).

#### Communication of EMP requirements:

Provide details of how the objectives and requirements of the EMP will be communicated include:

- All contractors, subcontractors and other working on site must be inducted into the EMP.
- EMPs must be displayed in visible locations within site compound/office.
- EMPs must be addressed through other forms of communication such as toolbox meetings.

#### Inspections and Maintenance:

Provide details of how and when environmental protection measures are checked, include:

- EMP protection measures must be monitored at least once per week to ensure they are working effectively on site.
- Monthly inspections by consultants where significant flora or fauna may be impacted.
- Adaptive management

#### Staging of works:

Provide details of any staging and how this will occur, the following may be included:

- May include staging in relation to weather conditions.
- Strip in stages where possible to minimise soil exposure.

## Informing Residents:

- State when and how this will occur (if necessary), including which residents will be informed.

## Associated Documents to be listed and attached may include any or all of the following:

- Inspection checklists
- Risk assessments
- Emergency procedures
- Induction checklist
- Incident report forms
- Incident management procedures
- Project Management Plan
- Truck route and Traffic Management Plan
- Flora and Fauna Assessment
- Arboriculture reports
- Tree Management Plan
- Offset Management Plan
- Conservation Management Plan
- Salvage and Translocation Plan
- Weed Management Plan
- Cultural Heritage Management Plan
- Dilapidation reports
- Fuel/Chemical Spill Response Plan
- Other associated assessments, plans or reports.

## Risk and Incident Management:

Other risk and incident management measures to be considered:

- Dial before you dig
- Incident management frameworks and procedures must be clearly displayed in site office and key locations around site. Must include chemical spill, fire, animal rescue, vegetation damage, archaeological/heritage, OH&S and pollution response procedures, flowcharts/checklists and relevant Authority contact details
- All vehicles and machinery to be parked on established gravel areas
- All staff to be made aware of Fire Danger Period and days of Total Fire Ban
- Weather conditions to be monitored during periods of high fire danger
- Adequate fire suppression equipment on site, including contact number for local CFA
- Fire hazard prevention e.g. fire breaks and grass slashing, including during reinstatement and maintenance period

## Other:

- All sediment, erosion, site refuelling compound and native vegetation protection measures to be inspected by Council prior to works commencing.

## 4.2. Noise, Vibration and Lighting

This section is to provide details on how the site works will minimise noise and vibration and address any identified risks. Some suggestions for acceptable management measures are provided below. These may be adjusted where necessary for individual sites and additional measures may be proposed or required for some sites. Further information on noise and vibration can be found in the Civil construction, building and demolition guide, Publication 1834, Environment Protection Authority Victoria (2020)

### Working Hours:

- Enter the working hours for the project in the spaces provided.
- Ensure working hours meet acceptable EPA standards and are as per Council approved Traffic Management Plan.

### Noise Minimisation Methods:

Provide details of methods used to reduce the amount of noise generated, these may include:

- Regular maintenance and inspection of machinery.
- All machinery and vehicles used on site to be fitted with standard noise management equipment.
- Locate works that may generate noise as far away from neighbours as possible.
- Schedule noisy activities for least sensitive times of the day.

### Vibration Minimisation Methods:

- Schedule the use of equipment that causes vibration for the least sensitive times of the day
- Regular maintenance and inspection of equipment in accordance with manufacturer's specifications
- Plan operations to ensure activities which cause vibration do not occur at the same time.

### Lighting:

- Site lighting must be designed and used so as to minimise impacts on surrounding land uses.
- Lighting must not illuminate/project onto areas of conservation including wetlands, waterways and habitat for nocturnal fauna and migratory birds.

## 4.3. Dust

This section is to provide details on how the generation and transport of dust will be minimised during the site works and address any identified risks. Some suggestions for acceptable management measures are provided below. These may be adjusted where necessary for individual sites and additional measures may be proposed or required for some sites. Further information on managing dust can be found in the Civil construction, building and demolition guide, Publication

1834, Environment Protection Authority Victoria (2020). All measures must adhere to Council and relevant Authority standards.

### **Minimising Dust Generation:**

Provide details of measures that will inhibit the generation of dust, these may include:

- Avoid stripping large areas at once and monitor weather forecasts prior to stripping. Strip in stages where possible.
- Encourage establishment of vegetation.
- Re-grass filled areas after completion to stabilise exposed soils.
- Reduce traffic speeds on unpaved roads.
- Keep to approved truck route and maintain truck route appropriately.
- Any activity involving the handling and moving of soil to be restricted on dry windy days.

### **Dust Suppression:**

Provide details of dust suppression measures that will be used, these may include:

- Water spray exposed surfaces as necessary.
- All loads of soil being taken off site for disposal must be covered.
- A water truck must be available on site full-time to spray truck routes and exposed surfaces.
- Any hose used for water spraying to be fitted with a trigger nozzle. Check water restrictions with local authorities for guidelines. - Recycled water (refer to EPA guidelines for controls on usage) to be used for dust suppression.

### **Contingencies**

Provide details of the contingencies to be implemented where an unreasonable amount of dust generated, these may include:

- Activities generating dust must be monitored and restricted if they reduce visibility onsite and become hazardous.
- Stop work if dust generated from construction on site reaches neighbouring areas or properties, if visibility is affected on adjoining roads or if dust on the work site is a risk to occupational health.

## **4.4. Chemicals**

This section is to provide details on how the spills and leaks of chemicals from onsite storage and handling practices will be prevented during site works and address any identified risks. Some suggestions for acceptable management measures have been provided below. These may be adjusted where necessary for individual sites and additional measures may be proposed or required at some sites. Further information on managing chemicals can be found in the Civil construction, building and demolition guide, Publication 1834, Environment Protection Authority Victoria (2020). All measures must adhere to Council and relevant Authority standards

### **Storage:**

Provide details on the storage of chemicals:

- Identify all chemicals that will be stored and/or used on site. –
- All fuels, oils, chemicals and other hazardous materials must be stored in appropriate designated area. –
- Minimal storage of fuel and other chemicals on site.

## Spill Management:

Provide details of how chemical spills will be managed, this should include:

- Preparation of fuel/chemical spill response plans, with key staff trained to undertake emergency containment, clean up and disposal.
- Distributing and clearly displaying emergency contact numbers and emergency responses flow charts.
- Weekly inspections of management measures with immediate follow up.
- Notification of relevant authorities if native vegetation, fauna and/or waterbodies are impacted by spill (i.e. state or federal authorities, wildlife rescue).
- Site compound and designated refuelling areas being appropriately bunded and graded to a sump at the lowest point where spills collect. Cut-off drains being installed to direct runoff away from refuelling points.
- All spills being cleaned up immediately to avoid contamination of the soil or water course. All spills must be reported to the superintendent and relevant Authorities.
- Any soil contaminated from a spill being removed and disposed of at an appropriate EPA landfill licensed to receive the waste type. The extent of soil contamination must be assessed, classified and removed in accordance with relevant Authority guidelines.
- Spill kits being kept 10m from chemical storage and refuelling areas (accessible, but safely out of range).
- Spill kits being placed and clearly marked throughout work site.

## Refuelling Procedures:

Detail the procedure for refuelling, which should include:

- Appropriate refuelling point to be designated.
- Bunding and liners for chemical storage to be installed (see Authority guidelines).
- No refuelling to occur within minimum 10m of any drainage inlet, open drain, wetland, waterway or area of protection (e.g. conservation areas, tree protection zones and recreational infrastructure). Drain seals must be in place prior to refuelling.
- All refuelling and other hazardous materials use to only occur within appropriate bunded or portable sealed bunded area.
- Stormwater/rain protection measures to be installed for bunded areas.
- Minimal refuelling of vehicles to occur on site and wherever possible done off site.

## Other:

Detail other measures relating to chemical management which may include:

- Vehicular and machinery maintenance not occurring on site.

- Collecting all oily water from sumps, interceptors and drip trays and disposing at a suitably licensed waste disposal facility as soon as possible.

## 4.5. Erosion and Sediment

This section is to provide details on how the site works will be managed to limit erosion from disturbed or unstable soil and prevent sediment entering stormwater drains and waterways and address any identified risks. Some suggestions for acceptable management measures have been included below. These may be adjusted where necessary for individual sites and additional measures may be proposed or required for some sites. Further information on managing erosion and sediment can be found in the Civil construction, building and demolition guide, Publication 1834, Environment Protection Authority Victoria (2020). All measures must adhere to relevant Authority standards.

### Drainage Management:

Provide details of how the run-off and drainage will be managed on site, including:

- Drawing the drainage lines for the site on the Plan 1
- Incorporating measures to ensure that stormwater runoff from the site reflects patterns, volume and quality that exist prior to works.
- Drainage lines being naturalised as much as possible.
- Diverting upslope stormwater around areas that do not have a protective vegetation cover to reduce water sheeting.
- Diverting any contaminated flow generated on site to a sediment trap or settlement treatment prior to release from site or into receiving waters.
- Protecting outlet drains with sediment traps placed upstream of outlet points.
- Diverting site runoff away from exposed surfaces, batters or stockpiles.
- Details of wastewater treatment/on site waste water treatment systems.

### Soil stabilisation:

- Grading, excavation and construction must not proceed during periods of heavy rainfall.
- Limit disturbance when excavating and preserve as much native vegetation as possible to reduce erosion and act as natural sediment filter.
- Disturbed areas and exposed soil must be stabilised after completion of civil works before building commences using a suitable method such as re-grassing, revegetation, application of soil stabiliser or matting, according to reinstatement standards and Council satisfaction.
- Revegetation to be encouraged to minimise possible sediment runoff and wind erosion.

### Sediment Traps

Provide details of sediment traps:

- Acceptable sediment control measures include (but are not limited to): straw bales, geotextile sediment fences, grass filter strips, rock bunds, synthetic /biodegradable logs, gravel sausages, check dams, and sediment basins. Designs and specifications of all sediment control measures must be in accordance with relevant Authority guidelines.

- Sediment basins should be designed by a qualified engineer.
- Sediment run-off controls and drainage around all construction areas must be established prior to commencement of any building or works.
- All sediment control measures must be maintained and intact for the duration of the works (including reinstatement period) and inspected regularly including prior to (and after) rain events to ensure they are functioning properly.
- Immediate repair of sediment control measure damages.
- Extra sediment fencing and other sediment control measures must be stockpiled on site for emergency repairs.
- Sediment fencing (or other acceptable sediment control measures) must be installed downslope of disturbed areas.
- Sediment fencing (or other acceptable sediment control measure) along waterways must be located as far inland as possible.
- Hay bales wrapped in geofabric material (or other acceptable sediment control measure) must be placed inside all side entry pits and in front of their inlet to form a temporary sediment trap and filtration system.
- Filter socks (or other acceptable sediment control measure) must be implemented in any open channels.
- Storm water pits along established roadways subject to sediment deposits must be either fitted with kerb inlet protectors or (geofabric) filter material to capture sediments.

## Dewatering:

Document the dewatering procedure which may include:

- The reuse on site of water that is of suitable quality (e.g. for dust suppression).
- Treatment of water if necessary before discharge.
- Grading of site to avoid water ponding. In the event of water ponding, the water is pumped into a temporary sump pit and filtered through sediment fencing (or other acceptable sediment control measure) prior to discharge into any drains.
- Sump pit to be located 20-30m away from any outfall drains, drainage inlets, and water courses.

## Stockpile Protection:

Provide details of the protection of stockpiles from erosion, this should include:

- Minimising the number and size of stockpiles – maximum 2:1 height to width ratio.
- Placing stockpiles at least 10m away from drainage inlets, open drains, water courses and paved areas.
- Installing a cut off drain with earth bund on the up slope side of the stockpile to divert runoff away from the stockpile.
- Placing sediment retention structures downslope of any stockpile.
- Temporarily grassing stockpiles in place for more than 28 days.
- Covering stockpiles with geotextiles, stabilisation matting or other suitable material when necessary.

- Ensuring stockpile area is secure to prevent illegal dumping including asbestos, garden refuse and acid sulfate soils.

### **Vehicle and Road Management (site access, cleaning vehicles, street cleaning):**

Provide details on practices to reduce sediment deposition on roads, which should include:

- Restricting access to one point (as per approved Traffic Management Plan and truck route).
- Restricting vehicle movement to stabilised access area.
- Covering vehicle tracks and parking areas within the site with gravel to reduce soil disturbance and mud formation in wet weather. Wherever possible, vehicles and machinery should remain on gravelled areas.
- Washing all equipment in designated vehicle wash down area.
- Erecting sediment fencing (or other acceptable sediment control measure) around vehicle wash down area.
- Removing any excess sediments and clay from all vehicles leaving the site.
- Installing rumble strips (or other acceptable measure) near site access point to minimise carriage of mud and dirt onto roads.
- Regularly inspecting existing and finished roads until the end of the maintenance period and removing any sediment deposited there. Cleaning roads prior to rain/storm events.
- Street sweepers or other physical sweeps of material deposited on roads must not be used as a primary means of sediment control.

### **Other:**

Provide details for any other erosion and sediment management measures, and consider the following:

- Keeping topsoil separate from sub-soil when stockpiling soil.
- Ensuring imported soils, mulch and aggregate are free of weeds, debris, acid sulfate and other contaminants as per current Australian standards and Authority guidelines.

## **4.6. Waste**

This section is to provide details on how waste will be prevented from polluting the environment during site works and address any identified risks. Some suggestions for acceptable management measures are provided below. These may be adjusted where necessary for individual sites and additional measures may be proposed or required for some sites. Further information on managing and storing waste can be found in the Civil construction, building and demolition guide, Publication 1834, Environment Protection Authority Victoria (2020). All measures must adhere to Council and relevant Authority standards.

### **Movement of Soil and Contaminant Status:**

- Indicate whether soil will be moved on or off the site as part of the works.
- Indicate contaminant status of soils.
- Provide details of contamination (if applicable) and risk control methods.



- Refer to EPA guidelines for further information regarding contaminated soil management.

## **Waste Storage and Disposal:**

Provide details of waste and storage and disposal including waste present on site when works commence as well as waste generated through the works, which may include:

- Storing all litter and hard waste in designated area to prevent it being washed or blown away.
- Providing lidded rubbish and recyclables bins close to site office and/or lunch eating area for non-construction waste generated on site and emptying them before they become full.
- Locking bins at the end of each work day to prevent illegal or unwanted waste accumulation. Designing waste storage areas so that wind cannot spread waste.
- Containing all waste material on site in accordance with regulatory requirements.
- Adhering to regulatory requirements for waste disposal.
- Keeping waste records.

## **Waste Minimisation Methods:**

Provide details of waste generation minimisation methods, this may include:

- Reduction in the usage of materials/reuse materials where possible – avoid, reduce, reuse, and recycle.
- Separate recyclable waste and materials from general waste for recycling. Recycling bins must be clearly marked to avoid contamination of recyclable materials.
- Take care not to over order materials.

## **Concrete Wash Out**

Provide details of concrete washout areas, which may include:

- Locating concrete wash out areas at least 10metres away from drainage lines, stormwater drains and water bodies.
- Ensuring the concrete washout is appropriately designed, imperviously bunded area that can detain and store concrete waste water and solids.
- Not placing excess concrete in the designated wash out area
- Minimising the amount of washout water generated, by scraping all excess concrete off equipment before it is washed and placing it in site receptacles designated for concrete and masonry.
- Monitoring weekly, prior to forecast rainfall events, during rainfall events and as soon as practicable after the rainfall event to ensure the washout is functioning correctly and has adequate storage capacity.
- Removing set concrete to restore capacity to washout area to prevent overflows

## **Other:**

Provide details of any other measures and consider:

- Ensuring work sites are free of litter – collecting any litter visible on site daily.
- Removing all equipment, construction materials and waste from the site as part of the site clean-up works.
- Selection of recycled materials for use on site where possible.

## 4.7. Significant Flora and Fauna

This section is to provide details on how significant flora and fauna adjacent on and adjacent to the site will be protected during site works and any identified risks. Indicate whether any native or significant flora or fauna are present or potentially present on or adjacent to the site. Details must be provided including the type of flora/fauna, whether an assessment has been completed and any relevant management measures. Some suggestions for acceptable management measures (where relevant) are provided below. These aim to provide guidance for the level of protection required and may be adapted for individual site requirements. Additional protection measures or changes must be in line with regulatory requirements and are subject to approval by Council and other relevant authorities. Where threatened species are present additional species management plans may be required.

### **Significant Flora or Fauna includes (but is not limited to):**

- Native or landscaped vegetation. - Native flora or fauna species.
- Mature or memorial trees.
- Habitats, breeding areas or wildlife corridors for fauna.
- Rare, vulnerable, endangered or threatened species.

### **Environmental Protection and Biodiversity Act (1999) and Flora and Fauna Guarantee Act (1988) approval may be required before works commence, including:**

- Specific species protection requirements and management plans.
- Salvage and translocation plans.

### **Vegetation Protection Zones (VPZs):**

- All significant flora, fauna and habitat on or adjacent to the site must be protected and signed accordingly.
- Vegetation Protection Fencing must be erected around all native vegetation (including trees) and protected fauna habitat to be retained (VPZs); fencing must be cyclone fencing (or similar), with specifications to relevant Australian standards and Council satisfaction.
- Signage on Vegetation Protection Fencing marking area as a 'Vegetation Protection Area – No Unauthorised Personnel, Materials or Equipment Beyond this Point' must be clearly posted at all times for the duration of works.
- All Vegetation Protection Fencing must be installed from the construction site, with no entry to the VPZs. All waste materials must be sensitively removed immediately. Vegetation within protection areas must not be impacted during installation of fencing.
- No access at any time to VPZs. Areas within VPZs not to be used for vehicular or pedestrian access, trenching, soil excavation, storage/dumping of tools, equipment materials or waste and storage of any vehicles, machinery, equipment or other materials. VPZs may only be accessed by suitably qualified contractors for the purposes of weed control or other Council or Authority approved maintenance or inspection where necessary. Protected vegetation must not be damaged or destroyed.

- Each VPZ must be established prior to works commencing and fencing and signage must be maintained and intact until completion of works.
- Vegetation Protection Fencing must be monitored regularly. If protection fencing is damaged, it must be immediately repaired and secured along original alignment from construction site, with no entry or damage to VPZ.
- Vegetation Protection Fencing is not to be removed or relocated without prior approval from Council.

## **Tree Protection:**

- All trees to be retained must be protected in Tree Protection Zones (TPZs). The radius of the TPZ is to be calculated by multiplying the trunk diameter measured at 1.4 m above ground (the diameter at breast height, DBH) x 12, with a minimum radius of 2m, unless otherwise stated by Council Arborist.
- Trees must be protected by Vegetation Protection Fencing erected around the TPZs.
- Any encroachment into TPZs must only be undertaken in accordance with Council requirements and approval.
- Any works in the vicinity of street trees must only be undertaken in accordance with Council Arborist requirements.
- No disturbance within the drip line and damage to the bark, roots and limbs of trees and shrubs to be retained.
- Trenching must not occur within the drip line of trees with a trunk diameter of 10cm or higher at Breast Height without Council approval.
- An approved tree management plan is required for retained trees and any work in the vicinity trees.

## **Vegetation Removal:**

- Restrict the removal of trees and other vegetation to the minimum required.
- Retain/relocate hollow bearing trees, hollow logs and trees containing large nests where possible.
- Where possible, salvage native vegetation approved for removal and use in any associated landscaping or reinstatement works. Only to be undertaken with Council and relevant Authority approval.
- Roots and limbs permitted to be removed must be removed by a suitably qualified practitioner.
- Permits and offsets may be required where vegetation is removed. Illegal damage and removal is enforceable under relevant legislation.
- Suitably qualified wildlife rescue/animal handling contractors must be present during the removal of trees, native vegetation and other potential animal habitat.

## **Vehicle Management:**

- No parking or storage of any vehicles, equipment or materials outside of the construction site. - No vehicles, plant or equipment to be driven over or stored on roadside vegetation (including grassed areas).

## Other:

- Stormwater and dust management controls must be regularly inspected to ensure no damage to native vegetation.
- All contractors, subcontractors and others working on site must be made aware of VPZs and associated requirements.
- Other site specific flora and fauna management measures.

## 4.8. Weeds and Pests

This section is to provide details on how the site works ensure weeds and pest animals do not adversely impact native vegetation or waterways and address any identified risks. All Council and relevant Authority requirements must be adhered to in relation to weed and pest animal control. Provide details on weeds or pests present on site and management measures. The protection of significant flora and fauna must be taken in to account when controlling weeds and pests on site.

- *Catchment and Land Protection Act (1994), Agricultural and Veterinary Chemicals (Control of Use) Act (1992) and Agricultural and Veterinary Chemicals (Control of Use) Regulations (2007)* must be complied with for weed and pest control, along with manufacturer's instructions with any herbicide use.
- Any weed or pest animal control is to be undertaken by a suitably qualified contractor.
- Site must be kept free from all target weeds for the duration of works and the reinstatement and maintenance period. Target weeds include all noxious weed species and highly invasive weeds.

### Weed/Pest Control:

- Only vehicles and machinery free of weed seed to be allowed on site.
- Herbicide use in or adjacent to water bodies and drainage lines must be minimised, with waterway sensitive products used where necessary.
- Weeds are to be controlled by spot spraying with appropriate, non-residual herbicide, no off target killing of native flora species via herbicide drift/herbicide over spraying.
- Other weed control options may include mechanical and manual removal, subject to native vegetation protection.
- Any weed disposal must be undertaken according to relevant Authority standards.

### Weed/Pest Spread Control:

- All contractors, sub-contractors and others working on site must be trained in issues relating to weed hygiene at a compulsory induction prior to commencing works.
- Slashing must not occur when the targeted weeds are setting seed.
- Wash down any machinery and vehicles that have come into contact with mud or water off-site by first scraping off all soil and wash down in a designated wash down area.
- Hosing down, air-blasting and vacuuming of vehicles, equipment and machinery to removing weed seeds must occur when entering and leaving site (in designated wash down area only).

- Shade-cloth must be installed on the perimeter fence to catch weed seeds and prevent the spread of seed by wind where necessary.
- Commence working with clean machinery in weed-free areas and subsequently move into weed affected areas where possible.

### **Wash Down Area:**

- Machinery, vehicles and equipment entering and leaving site must be cleaned of excess soil and organic matter in designated wash down area only.
- Periodic cleaning of excess soil and organic matter from vehicles, machinery and equipment as required in designated area.
- Sediment fencing (or other approved sediment control measure) must be located around the wash-down area to prevent water and sediment runoff.
- Any weeds that might germinate from soil accumulated in wash down area to be controlled.

### **Site Inspections:**

- Site must be inspected and surveyed regularly for any noxious or highly invasive weeds.
- Any infestations of target weed species must be immediately eliminated prior to seeding during the period of construction and the duration of the reinstatement and maintenance period.

## **4.9. Archaeological and Heritage**

This section is to provide details on how the site works will meet the specified requirement (stated on the template) and address any identified risks. Indicate whether any places, sites and/or objects of archaeological or heritage value are or are likely to be present on site, and provide details of management techniques and/or specific Cultural Heritage Management Plan. Management measures should be included on the EMP even when nothing of archaeological or heritage value is present on site or a Cultural Heritage Management Plan is not required. The following set of standards provides some suggestions for acceptable management measures.

- Develop Cultural Heritage Management Plan (if required) for approval.
- Should any artefacts be uncovered during the process of the works the superintendent must be contacted immediately and relevant procedures followed.
- Management Measures
  - Contact community/traditional landowners.
  - Procedures and monitoring. - Collection and relocation by relevant authorised persons.
  - Design changes.
  - Stop works.
  - Protection zones.
  - Any other management measures as identified in approved Cultural Heritage Management Plan.
- Other site specific archaeological and heritage management measures.

## 4.10. Reinstatement Standards

This section is to provide details on how you will ensure that the site works will meet the specified requirement (stated on the template). A separate landscaping or reinstatement plan may be required for approval. All reinstatement works and maintenance must be to Council and relevant Authority satisfaction. The following set of standards provides some suggestions for acceptable reinstatement standards and management measures.

- Develop full detailed landscape/revegetation plan for Council approval (if necessary), including quantity, density and types of species.

### Topsoil:

- Topsoil must be carefully removed, stored and replaced to maximise the potential for native vegetation recovery. All weeds must be controlled.
- If appropriate, topsoil replacement must be evenly spread over the disturbed area. All sites must be top dressed with clean soil. Imported soils, mulch and aggregate must be free of weeds, debris, acid sulphate and other contaminants as per current Australian standards and relevant Authority guidelines.
- No surface rocks or soil clods in areas of landscaping and mowing.

### Revegetation:

- Reinstatement/revegetation must include whole work zone, including all disturbed areas.
- Rehabilitate and revegetate works of extracted strips progressively.
- Adequate stabilisation must be maintained until plant cover is established.
- Minimum 95% cover in year 1 and each subsequent year.
- When sowing fails to establish and meet requirements, re-sowing must occur.
- Erect Vegetation Protection Fencing around all areas to be revegetated or fencing/bollards as detailed in the Council approved landscape/reinstatement plan.
- Re-sown grasses must be established and percentage groundcover target achieved before temporary fencing can be removed.
- Mulch appropriate to situation must be used in revegetation.
- Nature strips, batters and other disturbed surfaces must be topsoiled, seeded and cultivated to establish a consistent grass cover according to Council satisfaction.

### Weed and Pest Control:

- Control target weed species on areas of reinstated soil prior to sowing and following the first significant rainfall event (at least 5mm).
- Undertake follow up weed control (e.g. spot spraying) for revegetation areas every 3 months for the duration of the works and maintenance period.
- Control populations of rabbits that may threaten the success of revegetation works in accordance with relevant legislation and regulations.

### Other:

- Interval between clearing, soil stabilisation and replanting must be kept to an absolute minimum.
- Site must be reinstated and landscaped (if required) to Council satisfaction before handover.
- An Asset Protection Permit must be submitted to Council prior to commencement of use of the approved access point. Once works are finished, the access and any other assets damaged during the course of construction must be reinstated to Council satisfaction.
- Consent must be obtained from Council to work within Council road reserves.
- Other site specific reinstatement measures.

## 5. SUBMISSION TO COUNCIL

Where an EMP is a condition of a planning permit, the EMP must be prepared on the Council templates by a suitably qualified person and submitted to Council for endorsement. Works must not commence without an approved EMP.

When submitting your EMP you must include:

Plan 1 of the Template

Site Environment Protection Measures section

Plan 2 of the Template

Any other relevant documentation required