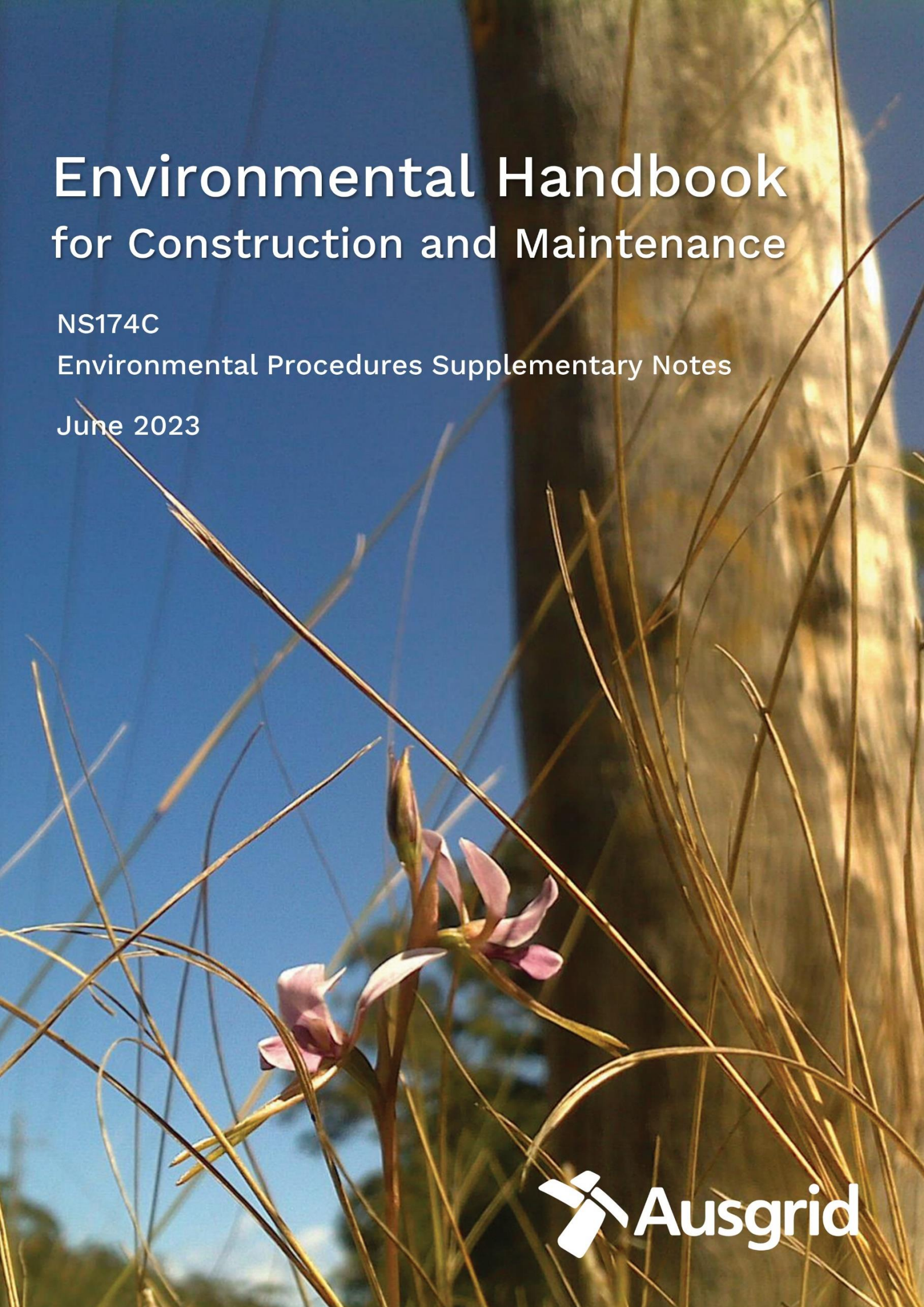
Environmental Handbook
for Construction and Maintenance

NS174C

Environmental Procedures Supplementary Notes

June 2023



Ausgrid

Acknowledgement of Country

We acknowledge the Traditional Custodians of the lands where the Ausgrid distribution network is located, and we pay our respects to the elders past, present and emerging. We recognise the Traditional Custodians as the first protectors of the land, water, sea and sky.

As set out in our Reconciliation Action Plan, it is important that this recognition leads to industry wide support and understanding of the knowledge, stories, languages and experiences of Aboriginal and Torres Strait Islander peoples, as our way of paying respect, and contributing to, some of the oldest continuous cultures of the world.

We understand that our customers and infrastructure reside on ancestral lands. Our network and operations span the traditional country of many languages, tribal and nation groups in Sydney, the Central Coast and Hunter regions of New South Wales.

At Ausgrid, we want to lead and foster a workforce, and approach our operations, to embrace the knowledge, voices, cultures and histories of Traditional Owners in our own organisation.

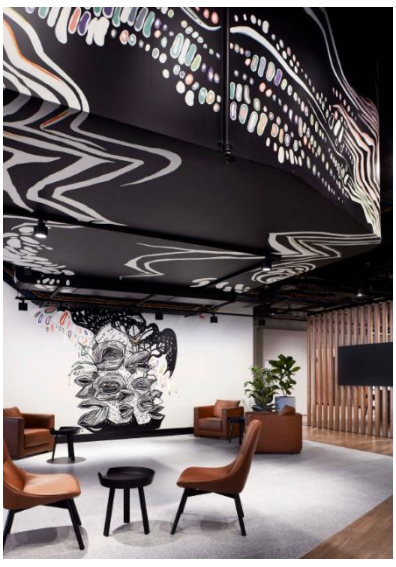
Baayangali

Baayangali is a Yuwaalaraay word from the north-west of New South Wales referring to the concept in nature of 'the system by which things work and are interconnected, or the natural order of all living things'.

The interior of our head office in the Sydney CBD, features an impressive visual design that tells a story unique to Ausgrid. The artwork is a collaboration between Yuwaalaraay designer, Lucy Simpson, and mural artist, Meg Minkley.

Three distinct elements in nature that represent POWER, ENERGY and LIFE (or Baayangali) are all interwoven and represented through the lightning, spark and renewal design series which incorporates the transfer of energy, knowledge systems and our role in sustaining the balance.

- **Power** – Lightning is a natural source of energy that brings rain and renewal of life to country. It represents the transfer of energy from one realm/entity/source to another.
- **Energy** – 'Spark' was used to signify First Nations people across the country having long practiced the cultural tradition of firestick farming (an old practice that continues today) – a harnessing of elements in nature to sustain balance and promote growth/continuity through care of country.
- **Life** – Renewal or the regeneration of life is symbolised by Banksia wildflowers. Plant life in Australia has adapted over tens of thousands of years to survive and thrive in the extreme conditions of the land. Lightning storms play an important part in the survival and regeneration of plant species like the Banksia, which have adapted to rely on fire to open the seed pods and begin the next stage of growth and life.



Ausgrid's Sydney Head Office

This *Handbook* also adopts the concept of Baayangali.

To embrace Baayangali, we will respectively work with and alongside First Nations communities, through adhering to cultural protocols, authentic engagement, truth telling, and protecting and preserving our planet and people.

Contents

Preface

This *Handbook* (NS174C Environmental Handbook) details the minimum environmental controls for planning and working on our network.

The *Handbook* forms part of Ausgrid's Environmental Management System (EMS) and is designed to provide *workers* and accredited service providers (ASPs*)* with the information and resources they need to comply with environmental laws.

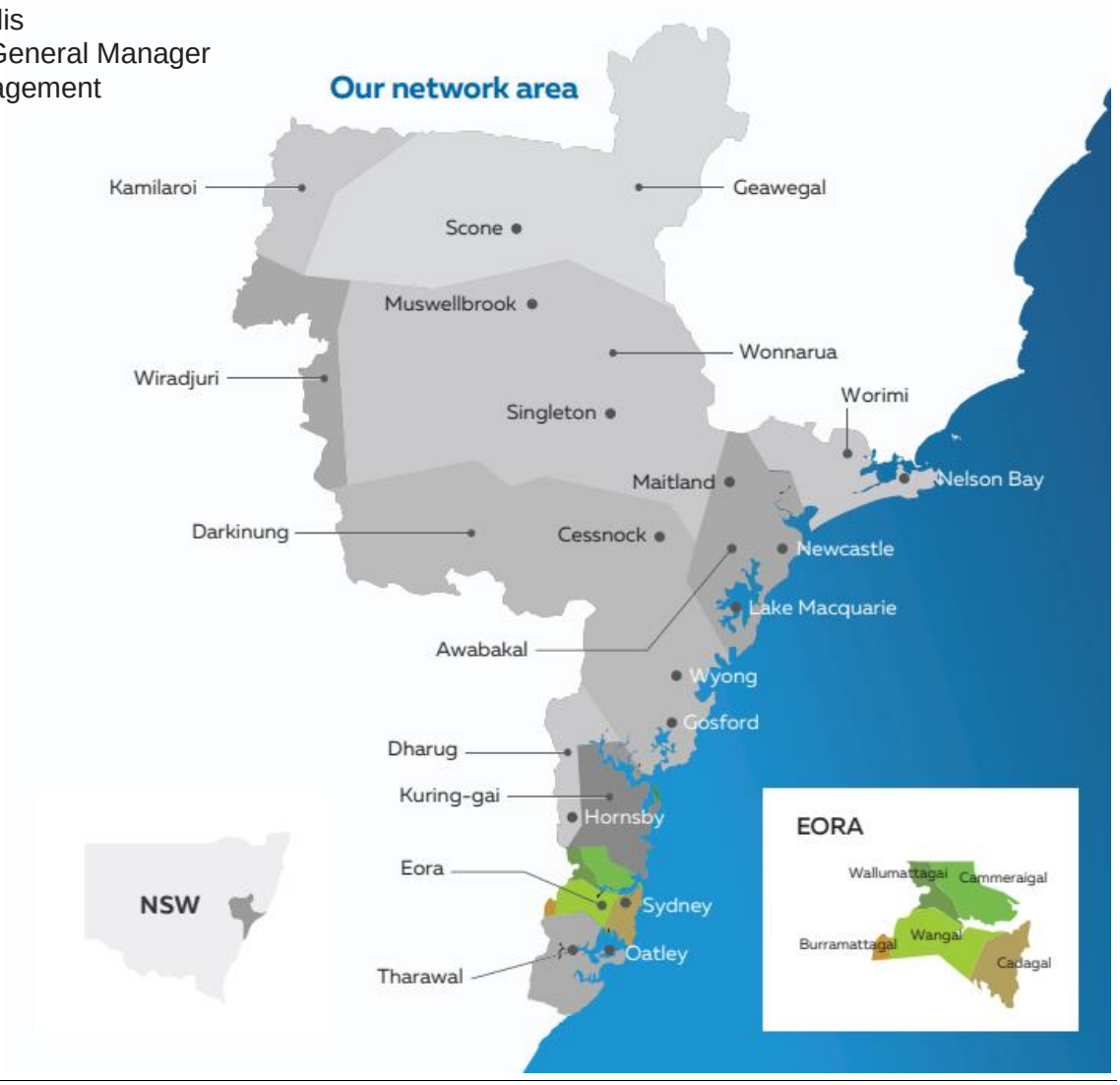
All *workers* and *ASPs* working on Ausgrid's network must comply with the requirements of this *Handbook* and have a copy readily accessible at the worksite.

Ausgrid's vision is for communities to have the power in a resilient, affordable, net-zero future. This means listening, responding to and playing an active role in the communities in which we operate, building an inclusive workforce that lives our values, maintaining a resilient network to meet future energy needs and lowering our impact on the environment.

As a custodian of a critical part of the energy system, we can honour First Nations' continual connection to their land, waters, sky, surrounding communities, and ancient history on this land. Ausgrid is on a journey to weave Indigenous knowledge into our environmental management system and our organisation as part of improving our performance and controls.

Junayd Hollis
Executive General Manager
Asset Management
Ausgrid

June 2023



All our actions can impact the environment.

We need to comply with our legal obligations, reduce our environmental impact and continually improve our performance.

Put simply, we all need to exercise due care, follow procedures such as this *Handbook* and speak up if something is wrong or could be improved.

Protecting the environment is everyone's responsibility.

1 INTRODUCTION

Purpose

This *Handbook* forms part of our Environmental Management System (EMS) and provides guidance for complying with our environmental responsibilities.

This *Handbook* prescribes the minimum environmental controls for works carried out on our network. Where the works cannot meet these environmental controls, or if advice is required, contact Environmental Services on 02 9394 6659 or environmentalservices@ausgrid.com.au.

This *Handbook* aims to:

- help identify and control environmental risks
- prevent incidents and minimise emissions
- improve environmental performance
- improve customer relationships
- reduce costs and increase efficiencies.

Applies to

All *Ausgrid workers* (employees, contractors) and accredited service providers (ASPs) involved in the construction and maintenance of Ausgrid's network.

Additional controls

Controls may also be required in project specific documentation such as *planning approvals*, *other approvals* and specific management plans (refer to section 1.5 for further detail and definitions).

Environmental laws, *planning approvals* and *other approvals* override other requirements (including this *Handbook*) in the event of an inconsistency.

Scope of works

Reference to 'works' in this *Handbook* means all activities related to the work, job or project.

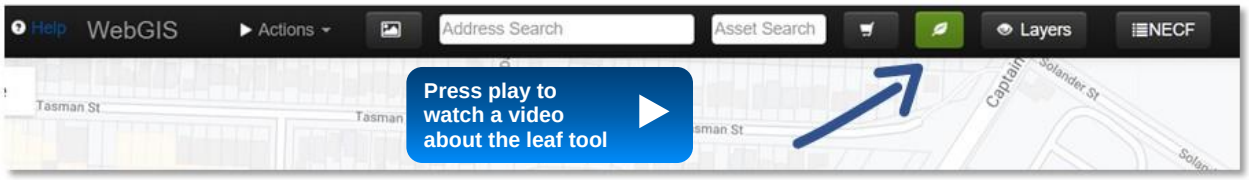
When scoping the works, consider the full area of the activities (environmental footprint), the type of plant and equipment to be used, as well as the smaller activities that make up the works, such as earth works including trenching, fencing, tree trimming, access tracks, stay wires/poles, pest treatments, lighting, site compounds, and construction pads.

WebGIS EL

Many sections in this *Handbook* refer to specific controls associated with *sensitive environmental areas/places*.

WebGIS EL is Ausgrid's environmental geographic information system which contains spatial data for *environmentally sensitive areas/places*.

An internal WebGIS EL is available to *employees* and an external WebGIS EL is available to authorised *workers*.



WebGIS EL data can be found by clicking the leaf button in Ausgrid's WebGIS

Definitions

ASP is accredited service provider, authorised with Ausgrid in the appropriate level and class to undertake design or contestable work on or near Ausgrid's network.

Employee means an Ausgrid or PLUS ES employee.

EMS is environmental management system.

Workers includes Ausgrid and PLUS ES employees and contractors.

How to read this Handbook

The activity reference table (Table 1.1-1) identifies the applicable sections of this *Handbook* to familiarise yourself with the requirements for the works.

Table 1.1-1 also contains a checklist that can be used as a prompt to help evaluate compliance with the requirements of this *Handbook*.

Flowcharts are used where possible to provide a visual representation of the process for determining requirements.

The *Handbook* sections are grouped by:

- **EMS overview** - Section 1 provides an overview of our *EMS*, defines responsibilities, summarises key legislative requirements and explains additional documents that could apply to the works.
- **Operational control** - Sections 2 to 8 specify the environmental controls and guidance for all construction and maintenance works on Ausgrid's network (refer to Figure 1.1).
- **Emergency preparedness** - Sections 9 and 10 describe what to do in the event of an environmental incident, including our spill response procedure and a list of emergency contact numbers.
- **Document information** – *Italicised items* are terms or acronyms defined within this *Handbook*. These are typically defined in the section where they appear and can also be found in the Glossary in Section 11. Section 12 lists the key changes since the last version and includes a document disclaimer.

Figure 1.1: Potential environmental impacts from Ausgrid's activities

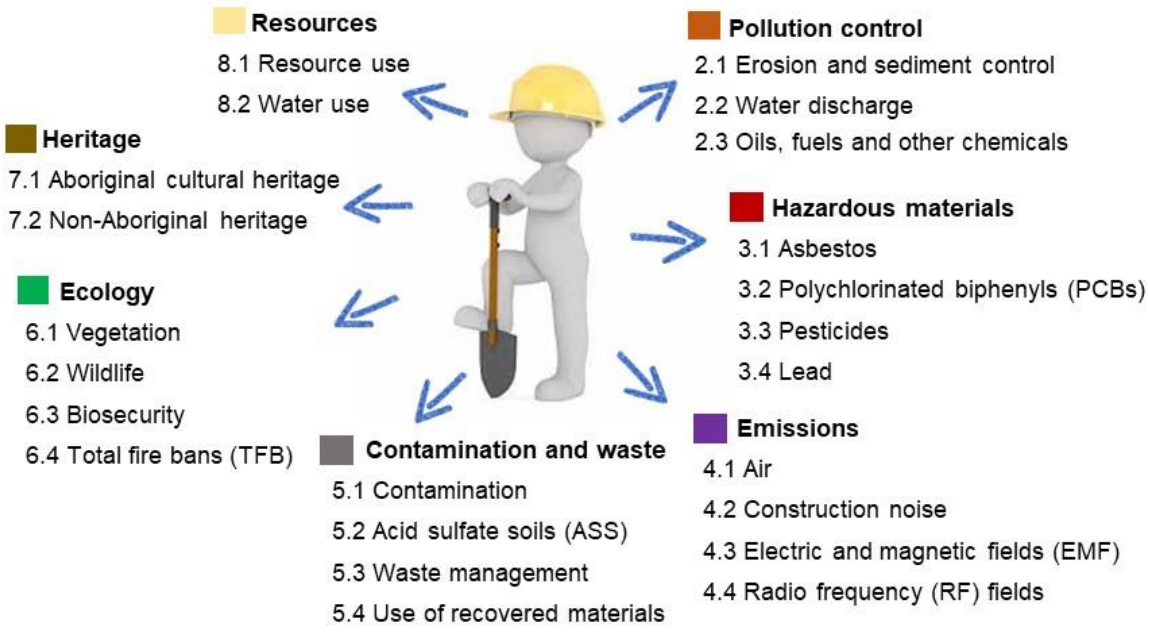


Table 1.1-1: Activity reference table and checklist

Activity	Section	Checklist
All works.	**1.2 Legislation** **1.3 Responsibilities**	✓ *Workers* are aware of their environmental responsibilities and appropriately trained.
Works that might impact the community.	**1.4 Community engagement**	✓ Impacted community know what is happening, when it is happening, why it is required and who to contact.
Environmental planning for projects.	**1.5 Environmental planning**	✓ All required *planning approvals*, *other approvals* and notifications/consultation have been obtained/undertaken. ✓ Works comply with all conditions of approval.
Excavating, trenching, concrete cutting, creating sediment, stockpiling, clearing vegetation or removing ground cover.	**2.1. Erosion and sediment control**	✓ Controls adequate to prevent sediment, drilling fluid/mud and saw-cutting runoff from entering a stormwater drain or *waterway*.
Managing accumulated water from excavations, pits, substations and bunds.	**2.2. Water discharge**	✓ Water discharges from pits, trenches and substations meet the required discharge criteria.
Handling, storing or transporting of oils, fuels, chemicals.	**2.3 Oils, fuels and other chemicals**	✓ Oils, fuels and other chemicals handled, transported and stored in a manner to prevent and, if necessary, contain and control a leak or spill.
Disturbing asbestos contaminated materials or dust.	**3.1 Asbestos**	✓ Potential for asbestos assessed and, where identified, managed in accordance with training, *PPE*, licensing, record keeping, notification, bagging, transport, tracking, and disposal requirements.
Handling oil and oil filled equipment (manufactured before 1997).	**3.2 Polychlorinated biphenyls**	✓ *PCBs* appropriately classified, handled, transported, stored, labelled, disposed and managed in accordance with Ausgrid's PCB licence.
Using *pesticides* (including herbicides, insecticides, fungicides, etc).	**3.3 Pesticides**	✓ *Pesticide* use restricted to target areas, approved for use, used in accordance with the label and with required training, record keeping, notification and signage.
Disturbing known/suspected lead products or dust.	**3.4 Lead**	✓ Potential for lead exposure assessed and where identified, managed in accordance with training, *PPE*, hygiene, notification and disposal requirements.
Generating fumes from vehicles or machinery, using SF_6, or generating dust.	**4.1 Air**	✓ Controls adequate to prevent dust, fumes and other gases from leaving the worksite or substation.
Noisy works from plant and equipment or works outside of *standard operating hours*.	**4.2 Construction noise**	✓ Controls adequate to minimise construction noise impacts (such as scheduling, equipment, awareness, site layout). ✓ Works compliant with the notification and *out of hours work* requirements.
Working near high current carrying conductors / equipment or close to antennas.	**4.3 Electric and magnetic fields** **4.4 Radiofrequency fields**	✓ All public enquiries referred to Environmental Services. ✓ Workplace assessments have been undertaken where *workers* with medical implants or who are pregnant work in *high field work environments* or close to antennas.

Activity	Section	Checklist
Disturbing known or suspected contaminated land or decommissioning substations.	**5.1 Contamination**	✓ Suspected contaminated land reported to Environmental Services and *workers* are aware of requirements for any known contaminated land.
Disturbing land in known or suspected *ASS*.	**5.2 Acid sulfate soils**	✓ *ASS* is classified, managed, stored, treated and disposed in a manner to prevent environmental harm or corrosion of assets.
Generating, transporting, storing or disposing of waste.	**5.3 Waste management**	✓ Wastes segregated, classified, handled, stored, transported and disposed in compliance with licence and waste tracking requirements.
Receiving or supplying recovered soil (such as *VENM*, *ENM)*, *recovered aggregates* (such as crushed concrete), stormwater, or mulch.	**5.4 Use of recovered materials**	✓ Supply and reuse of *recovered materials* (such as aggregates, mulch, spoil etc) comply with sampling, documentation, record keeping and usage requirements of the relevant RRO/RRE.
Impacting vegetation (*trees*, shrubs, *tree* roots, seagrass, mangroves etc) or working within *ecologically sensitive areas* or national parks.	**6.1 Vegetation**	✓ Controls in place to prevent the unauthorised harm to *ecologically sensitive areas,* vegetation impacts minimised, correct pruning methods used and the *SRZ* / *TPZ* controls implemented.
Removing or damaging vegetation near wildlife, *ecologically sensitive areas* or wildlife habitat (native vegetation, bushrock, *tree* hollows, nests etc).	**6.2 Wildlife**	✓ Controls in place to prevent the unauthorised harm to wildlife.
Working in bushland, national park estate, *agricultural land* or areas with weeds, pests or pathogens.	**6.3 Biosecurity**	✓ Controls in place to prevent the spread of weeds and pathogens.
Live works on *bushfire prone land* or *hot works* during a *TOBAN.*	**6.4 Total fire bans**	✓ Controls in place to prevent the spread of fire. *Live works* on *bushfire prone land* or *hot works* during a *TOBAN* are compliant with exemptions.
Disturbing the ground surface or clearing vegetation/ground cover near heritage or where heritage items might be found.	**7.1 Aboriginal cultural heritage** **7.2 Non-Aboriginal heritage**	✓ Controls in place to prevent the unauthorised harm to *Aboriginal cultural heritage* and *non-Aboriginal heritage*. ✓ Potential discoveries are reported to Environmental Services.
All works.	**8.1 Resource use**	✓ Resource reduction initiatives have been considered (avoid, reduce, reuse, recycle).
Using potable (drinkable) water for construction or washbays.	**8.2 Water use**	✓ Water use minimised and in accordance with the water restrictions, water use exemptions, water saving rules and washbays used in accordance with the relevant trade waste agreement.
All works.	**9 Environmental incidents** **10 Emergency contact numbers**	✓ Environmental incidents reported (including discovering contamination, unauthorised vegetation clearing, damage to *Aboriginal and non-Aboriginal heritage* and sediment, oils, fuels and other chemical spills).

1.1 ENVIRONMENTAL MANAGEMENT SYSTEM

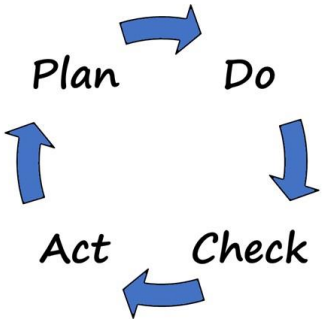
Background

An *EMS* provides a structured and integrated approach to managing our environmental impacts.

Our *EMS* is certified to International Standard Organisation (ISO) 14001 Environmental Management Systems.

At a company level, our *EMS* is a repeating cycle of plan, do, check and act:

- planning to implement our environmental policy, including setting objectives and targets
- implementing programs and procedures identified during planning
- providing training to our *workers*
- monitoring our performance
- responding to incidents
- taking action to continually improve
- periodically reviewing and challenging the entire system.

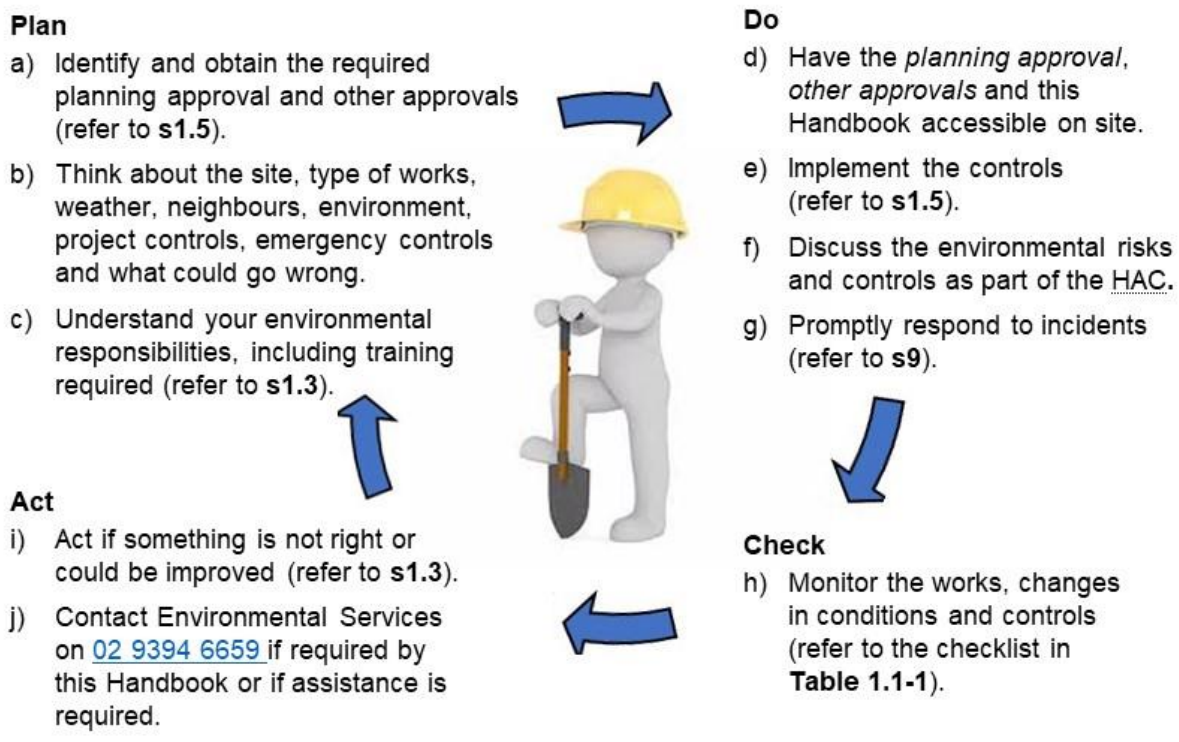


At a project level, these principles are the same and are outlined in Figure 1.1-1.

Definitions

HAC is a hazard assessment conversation.

Figure 1.1-1: Key principles of our EMS at a project level



1.2 LEGISLATION

Background

There are over 60 environmental laws that relate to our activities. The laws are designed to protect the environment and can either prohibit, restrict, control or authorise certain activities.

Definitions

EIA is an environmental impact assessment.

EP&A Act is the NSW *Environmental Planning and Assessment Act*.

EPA is the NSW Environment Protection Authority.

Planning Code is the NSW Code of Practice for Authorised Network Operators.

POEO Act is the NSW *Protection of the Environment Operations Act*.

REF is an *EIA* known as a review of environmental factors.

SER is an *EIA* known as a summary environmental report.

1.2.1 What do environmental laws require?

Environmental laws require our *workers* to:

- consider the environmental impact of their activities
- follow the correct environmental *planning approval* process
- not cause unauthorised harm to the environment
- immediately report environmental incidents.

1.2.2 Planning laws

The EP&A Act provides the overall framework for *EIAs* and *planning approvals* in NSW (refer to section 1.5). Ausgrid must also comply with the Planning Code.

A number of other Commonwealth and NSW laws also apply for issues such as heritage, threatened species, conservation areas and marine vegetation (refer to Table 1.2-1). These Acts may require *other approvals*.

1.2.3 Environmental protection laws

The POEO Act regulates air, water, noise and land pollution through a system of licensing, offences and penalties. We are required to:

- mitigate air, water, noise and land pollution
- report environmental incidents
- classify and appropriately manage waste
- hold an environmental licence for certain activities (such as waste and hazardous materials).

A number of other Commonwealth and NSW laws also apply for issues such as hazardous materials, contamination and *pesticides* (refer to Table 1.2-1).

1.2.4 Penalties

There are significant consequences for breaching environmental laws including:

- over $11 million in fines for a corporation
- over $1 million in fines and/or 7 years jail for individuals.

The *EPA* advises that a *worker* who acts in good faith and follows environmental procedures (such as this *Handbook*) would not normally be prosecuted.

Table 1.2-1: Key environmental Acts

Legislation	Issues covered by the legislation
Biodiversity Conservation Act	Threatened species, endangered ecological communities, areas of outstanding biodiversity value, and conservation agreements
Biosecurity Act	Weeds, pests and pathogens
Contaminated Land Management Act	Contaminated site assessments and reporting
Electricity Supply Act	Placement of works and notifications
Environment Protection and Biodiversity Conservation Act	Matter of national significance (threatened species, migratory birds, heritage, wetlands) and Commonwealth land
Environmental Planning and Assessment Act	*EIAs*, *planning approvals*, requirements for *exempt development*, and consultation. The associated Planning Code also covers training requirements, modifications, retention of and access to *EIAs*, monitoring and reporting.
Environmentally Hazardous Chemicals Act (EHC Act)	Scheduled Chemicals such as polychlorinated biphenyls (PCBs) and organochlorine pesticides
Fisheries Management Act	Marine vegetation (such as sea grasses, mangroves and marine algae) and dredging *waterways*
Forestry Act	Crown timber land and State forests
Heritage Act	State heritage items, archaeological areas, *relics*, movable heritage, Ausgrid's heritage register, and reporting
Hunter Water Act, *Sydney Water Act* and *Water NSW Act*	Special catchment areas, pollution, trade waste agreements, and water restrictions
Local Government Act	Local council approvals
Local Land Services Act	Vegetation clearing in rural areas
Marine Estate Management Act	Marine parks and aquatic reserves
National Greenhouse and Energy Reporting Act	Greenhouse gas emissions and reporting
National Parks and Wildlife Act	*Aboriginal cultural heritage*, national park estate, and conservation agreements
Native Title Act	Native Title
Pesticides Act	*Pesticides*
Protection of the Environment Operations Act	Air, noise, water and land pollution, management and disposal of waste, *environmental protection licences*, and notification of pollution incidents
Rural Fires Act	Total Fire Bans and preventing the spread of bushfires
Water Management Act	Aquifers and levee banks
Wilderness Act	Wilderness areas
Work Health and Safety Act	Asbestos, lead and hazardous chemicals

1.3 RESPONSIBILITIES AND TRAINING

Background

Our Code of Conduct outlines the standards and behaviours that are expected of all *workers*. The Code includes our Environmental Code of Conduct (Green Rules). Breaches of this Code could result in disciplinary action.

Ausgrid's External Partner Code of Conduct communicates our expectations of our external partners and their supply chains in providing goods and services to our organisation.

1.3.1 All workers

It is all *workers'* responsibility to:

a) Comply with the requirements in any required *planning approvals*, *other approvals*, this *Handbook* and environmental training (refer to Table 1.3-1).

b) Use due care, skill and foresight to minimise environmental harm.

c) Act in good faith when performing your job.

d) Speak up when you think an environmental document is missing or cannot be followed, when something appears to be wrong, when you are not sure what to do, or when something could be improved.

e) Discuss environmental risks and hazards when preparing a *HAC*.

f) Immediately report environmental incidents to your supervisor.

1.3.2 Supervisor and Manager

In addition to the above, it is the Supervisor or Manager's responsibility to:

a) Understand environmental risks and legal requirements relevant to your area of influence.

b) Check there are specific procedures and instructions for your *workers* to effectively manage environmental risks.

c) Make environmental documents accessible to your *workers*.

d) Check your *workers* have adequate supervision and resources to comply with procedures and instructions.

e) Check your *workers* have current environmental training relevant to their work (refer to 1.3.3).

f) Have appropriate contingency plans for dealing with environmental emergencies.

g) Investigate all relevant environmental concerns.

h) Share information with other areas of the company.

i) Evaluate the operational performance of your *workers* and discuss results with your manager (refer to the checklist in Table 1.1-1).

1.3.3 Training

a) All *workers* must be competent and have current environmental training relevant to their work (refer to Table 1.3-1).

b) Other training may be required depending on the task and nature of the requirements.

Table 1.3-1: Environmental training courses

Code	Course	Target audience	Registration
HSEEMS	Environmental Management & Sustainability	New *employees* as part of the company induction process	Employees
I0102REF	Environmental Awareness Assessment (NS174 Environmental Procedures)	For all *workers* who work on or near Ausgrid's network to increase awareness of their environmental responsibilities (course is based on this *Handbook*)	Employees ASPs Contractors
HSESER	Summary Environmental Report (SER)	Electrical designers and others (including *ASPs*) who prepare and verify *SERs* (refer to section 1.5.2)	Employees ASPs Contractors
HSEWG_ PLAN/ASP/ VEG/MAIN	WebGIS EL (reporting tool)	Electrical designers, *ASPs*, vegetation contractors and *workers* who need to use WebGIS EL reporting features	Employees ASPs Contractors
NA	Project specific inductions	This will be specified in the *planning approval* and/or *other approvals* (refer to section 1.5)	Project manager
ET001_EL	Erosion and Sediment Control	*Employees* who undertake activities that have the potential to generate sediment runoff (refer to section 2.1.1)	Employees
ET019_EL	Discharging Water	*Employees* who supervise discharges through filter bags (refer to section 2.2)	Employees
ET008_EL	Oil Handling & Spill response	*Employees* who regularly handle, transport or store oil (refer to section 2.3.2)	Employees
Various	Ausgrid Asbestos Awareness	All *Workers*	Employees ASPs Contractors
	Working with Asbestos Containing Materials (ACM)	*Workers* who work near *ACM* and where *ACM* might be disturbed by the work	
	Task specific asbestos	*Workers* who work with *ACM* and perform specific tasks	
NA	*EPA* approved pesticide use	*Workers* applying *pesticides* that meet the commercial use criteria (refer to section 3.3.4)	TAFE
ET047	Organo-Chlorine Pesticides Awareness	*Employees* handling spoil from 132kV cable trenches (refer to section 5.3.8)	Employees
NP_PROTOCOL	National Parks Protocol Induction	*Workers* undertaking inspection or maintenance work in national park estate	Employees Contractors
NA	Ausgrid recognised tree trimming course	Vegetation maintenance contractors (refer to section 6.1.6)	TAFE

1.4 COMMUNITY ENGAGEMENT

Background

Working closely with residents, businesses, councils and other groups can minimise disruption to the community, provide valuable input into the project, and reduce the duration and cost of works.

Community engagement can range from notifications for planned localised disruptions, to collaborative community engagement programs for major projects.

Working with the community can minimise disruption and improve project outcomes

1.4.1 Where to get more information

Employees can find information on Ausgrid's Community Engagement System on The Wire, including a wide range of procedures and tools to help plan and carry out community engagement in line with our Community Engagement Policy and Good Neighbour Protocols.

Ausgrid's Consultation Protocol outlines our process for engaging with the community for major projects in accordance with the Planning Code.

1.4.2 Pre-work checks

a) Check the requirements of any applicable *planning approval* or *other approvals* (refer to section 1.5).

b) Check the requirements of any applicable community engagement plan. *Employees* can find an outline of an engagement plan in the Consultation Engagement Handbook (typically prepared for major projects).

c) Check that the required notifications have been provided both in the planning phase and construction phase (refer to section 1.5.4).

1.4.3 Community engagement principles

To minimise disruption to the community, complaints and delays, consider the following principles:

a) Think about what your needs and expectations would be if you were affected.

b) Be genuine and clear about what is proposed.

c) Be open and acknowledge concerns.

d) Take a 'no surprises' approach. People are generally cooperative if they know what is happening, when it's happening and why it's required.

e) Provide a point of contact to deliver consistent messages and to record any commitments.

f) Keep messages factual and current.

g) Update the community and stay in touch with those who are heavily affected.

h) Ask affected parties how they are finding the works.

i) Honour any commitments made to the community.

1.5 ENVIRONMENTAL PLANNING

Background

All development in NSW is governed by the EP&A Act. The *planning approval* pathway and the need for *other approvals* or community engagement will depend on the nature and location of the development.

Routine repairs and maintenance are generally defined as *exempt development* and do not require a *planning approval*.

Failure to obtain and comply with any *planning approval* or *other approvals,* where they are required, could result in substantial fines.

Environmental impacts must be assessed before starting works

When to contact Environmental Services 02 9394 6659

a) Assistance is required to determine the type of *planning approval* or *other approvals*.

b) When preparing *SERs*, a Level 3 risk is identified in Table 2 of the SER.

c) Works require an *REF*, *SIS*, *EIS* or *DA*.

d) Missing, inadequate or non-compliance with any *planning approval or other approvals*.

Definitions

CEMP is a construction environmental management plan that typically applies to projects requiring an *REF, DA, SIS* or *EIS*. *CEMPs* detail conditions of approval and procedures for compliance (such as auditing, training, incident response).

DA is a development application, prepared in accordance with Part 4 of the EP&A Act and submitted to council for approval.

Determination means the decision to proceed based on the *EIA*.

EIA is an environmental impact assessment (*SER*, *REF*, *SIS* or *EIS*) required under Part 5 and 5.1 of the EP&A Act.

EIS is an environmental impact statement that is prepared for proposals that are likely to significantly affect the environment.

EPC means Ausgrid's environmental planning calculator.

Exempt development means development that does not require a *planning approval*, providing the works meet certain conditions.

Other approvals are approvals that exist outside of the EP&A Act and may be required despite the *planning approval* or despite being *exempt development*.

Planning approval means the approval of the *EIA* or *DA* to undertake certain works under the EP&A Act.

REF is a review of environmental factors, prepared in accordance with Part 5 of the EP&A Act and approved by Ausgrid.

SER is a summary environmental report where impacts are "minor and neither extensive nor complex", prepared in accordance with the Planning Code and approved by Ausgrid.

SIS is a species impact statement, prepared for proposals that are likely to significantly affect threatened species or endangered ecological communities.

1.5.1 Determining the planning approval process

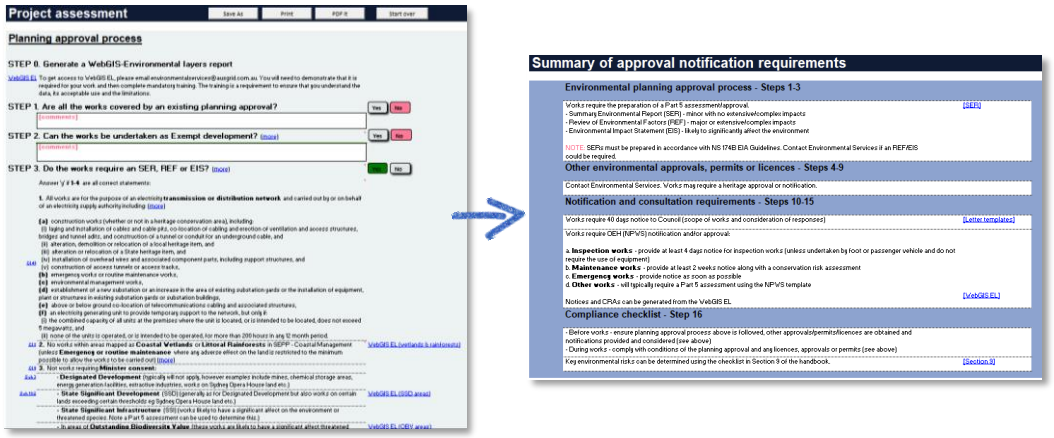
The NSW *planning approval* framework is complex. Figure 1.5-1 and Table 1.5-1 summarise the *planning approvals*, consultation / notification requirements and conditions of approval for different types of development. More detail can be found in NS174B Environmental Assessment Guidelines.

a) A WebGIS EL report is required for all works involving excavation, native vegetation clearing or building alterations.

b) The WebGIS EL and EPC can be used to determine:

- the *planning approval* process (such as exempt development, *SER*, *DA*)
- the need for *other approvals* (including licences and permits) – refer to section 1.5.3
- community engagement requirements (for example works in a National Park or *out of hours work*) – refer to section 1.5.4.

c) If required, use the EPC as documented evidence of the decision.



Environmental planning calculator

1.5.2 Preparing an EIA

a) Prepare *SERs* using NS174A SER in accordance with NS174B Environmental Assessment Guidelines. Detailed guidance on preparing *SERs* can be found in EGN 174B SER Guidance Notes and Ausgrid's Environmental Planning website.

b) To prepare *SERs*, current SER training and WebGIS EL training is required (refer to Table 1.3-1).

c) For other types of assessments (such as *REF*, *SIS*, *EIS* or *DA*), discuss the process with Environmental Services on 02 9394 6659.

Ausgrid's Environmental Planning website

Figure 1.5-1: Environmental planning and construction process

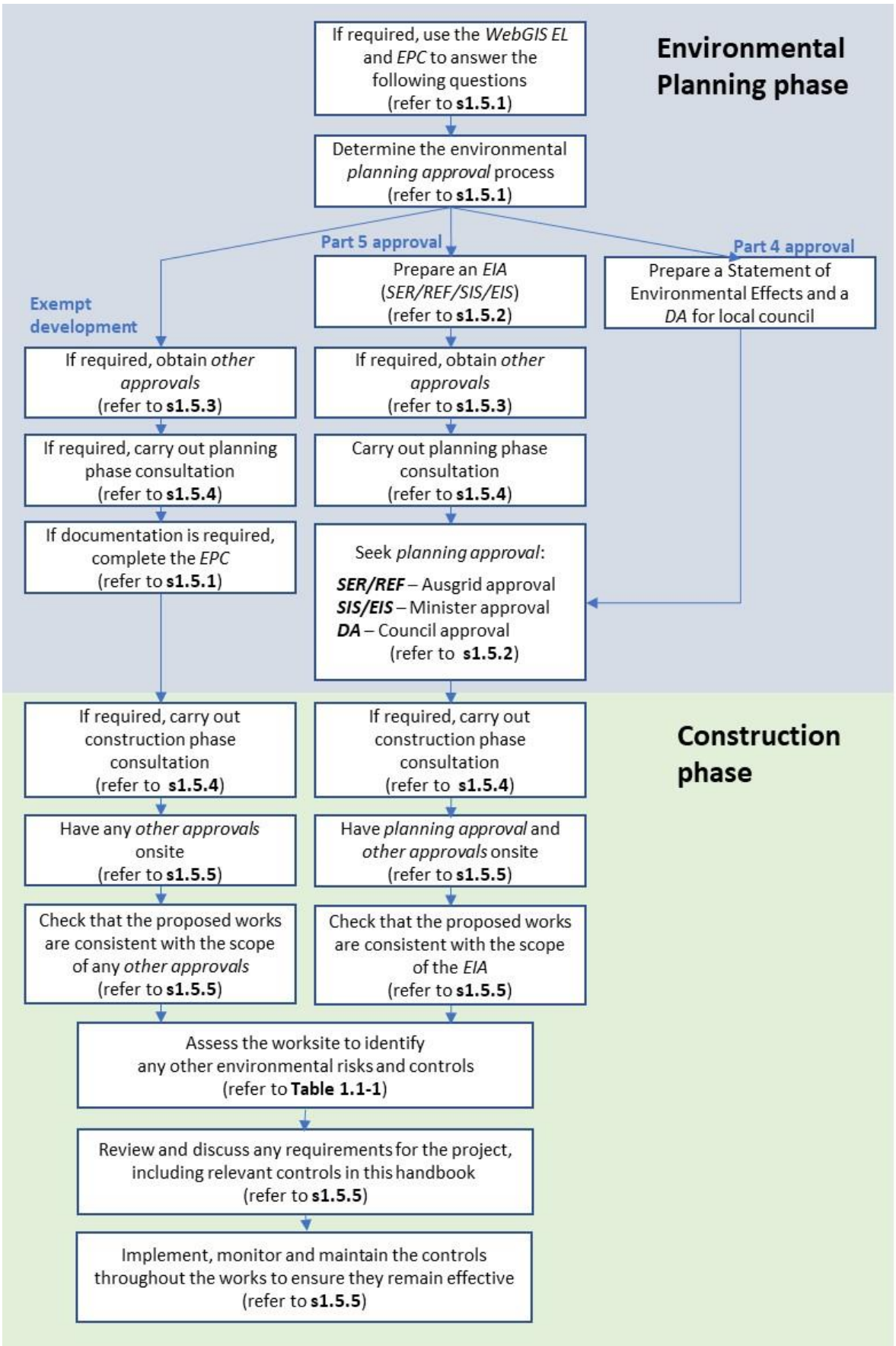


*Table 1.5-1: Planning approval processes^*

Planning approval process	Level of impact	Typical projects	Planning approval authority	Other approvals, notifications	Conditions of approval*
Exempt development (Class 2)	Defined by a planning instrument as "minor impact"	Routine repairs and maintenance	NA	Potentially (refer to section 1.5.3)	*Other approvals* (if required) and this *Handbook*
Part 5 SER (Class 3)	Assessed as "Minor and neither extensive nor complex"	New distribution works	Ausgrid (or public authority) *determination*	Yes (refer to section 1.5.3)	*SER* and *other approvals* Works must also comply with this *Handbook*
Part 5 REF (Class 4)	Assessed as more than *SER* but less than *EIS*	New zone substations / transmission lines Works covered by a 3rd party *REF*	Ausgrid (or public authority) *determination*	Yes (refer to section 1.5.3)	*REF determination* and *other approvals* Works must also comply with the *CEMP* and this *Handbook*
Part 5.1 SIS/EIS (Class 5/6)	Assessed as "Likely to significantly affect the environment"	Large transmission projects Works covered by a 3rd party *SIS/EIS*	Generally Minister approval	Yes (refer to section 1.5.3)	*SIS/EIS determination* and *other approvals* Works must also comply with the *CEMP* and this *Handbook*
Part 4 DA (Class 2)	Varies	New depots Works covered by a 3rd party *DA*	Generally Council approval	Yes (refer to section 1.5.3)	*DA* approval and *other approvals* Works must also comply with this *Handbook*

^ Refer to the Planning Code for additional information.

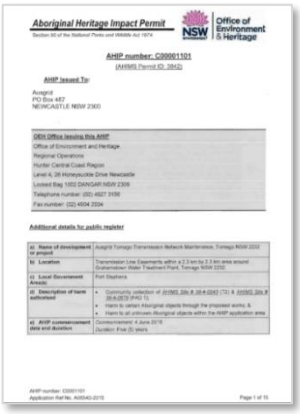
* Where there is an inconsistency between the *planning approval / other approvals* and requirements in this *Handbook*, the *planning approval / other approvals* will prevail.

1.5.3 Other approvals (including licences and permits)

Other approvals may be required under various Acts and Regulations, depending on the nature and location of the project, and the *planning approval* process.

Examples of activities requiring *other approvals* include:

- impacting *Aboriginal cultural heritage*
- impacting seagrass or mangroves
- new works in national park estate
- some new infrastructure within mine subsidence areas
- working on or impacting *non-Aboriginal heritage*
- working on a classified road (includes freeways, highways, main roads, tourist roads and secondary / collector roads (refer to the WebGIS EL).



Aboriginal heritage impact permit (AHIP)

Ausgrid has several standing approvals and exemptions which, if using, should be checked to make sure they have not expired.

The environmental approvals, licences, permits and exemptions applicable to the works can be identified by using the EPC in conjunction with the WebGIS EL.

1.5.4 Community engagement

Community engagement may be required under various Acts and Regulations. The need for consultation will depend on the nature and location of the project and the *planning approval* process.

Examples of activities requiring consultation and notification include:

- all works excluding routine repairs, maintenance or *emergency works*
- excavating roads or footpaths
- installing new substations
- upgrading existing substations
- impacting heritage (refer to section 7.2)
- noisy works (refer to section 4.2)
- night works (refer to section 4.2)
- entering private property
- using *pesticides* (refer to section 3.3)
- licensed asbestos removal (refer to section 3.1)
- maintenance works and inspections in national park estate (refer to section 6.1.4).

National Parks Protocol for working in national park estate

Some community engagement is a requirement of the *planning approval* process and needs to be completed before approval can proceed. Other community engagement, such as noisy works, impacting access or working on classified roads, is completed during the construction phase.

The environmental consultation and notification requirements applicable to the works can be identified by using the EPC in conjunction with the WebGIS EL.

1.5.5 Construction phase

Works can proceed when environmental planning requirements have been met and all *workers* understand any conditions of approval, environmental risks and associated controls that are applicable to their work.

a) Undertake community engagement required during the construction phase.

b) Have any *planning approval* and *other approvals* (including licences and permits) accessible at the worksite. Refer to the job package, otherwise approved *SERs* can be obtained by emailing eforms@ausgrid.com.au with the subject 'Get project x' (replacing 'x' with the project number).

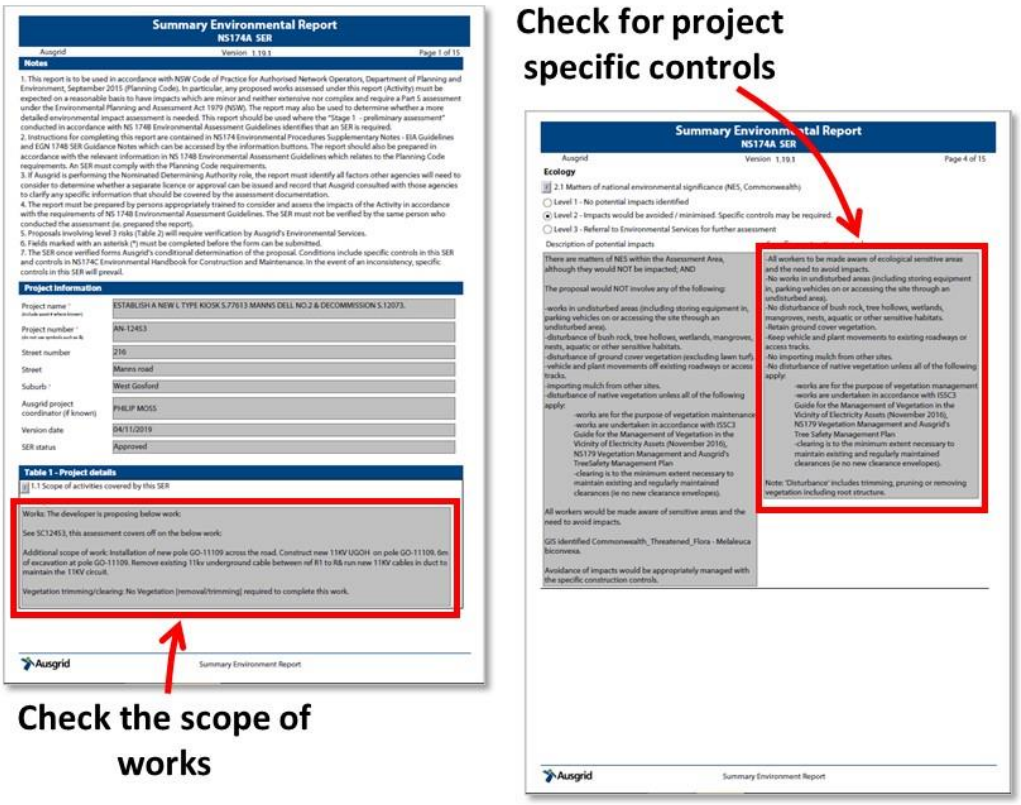
c) Check the proposed works are consistent with the scope of works described in any *planning approval* and *other approvals*.

d) Assess the worksite to identify any additional environmental risks and controls that could apply to the works as part of the *HAC* process (refer to the checklist in Table 1.1-1).

e) Review and discuss the environmental requirements including relevant controls in this *Handbook*.

f) Implement monitor and maintain controls throughout the works to ensure they remain effective.

g) For *REFs*, submit a post construction compliance report (REF T375) to environmentalservices@ausgrid.com.au.



Example SER – before starting construction or maintenance work, remember to check the scope of works (Table 1) and project specific controls (Table 2) in the SER

2 POLLUTION CONTROL

2.1 EROSION AND SEDIMENT CONTROL

Background

Erosion and sediment controls keep sediment on the worksite and out of drains and *waterways*.

Sediment runoff can result from excavating, stockpiling, clearing or removing ground cover. This can pollute *waterways* and harm aquatic ecosystems.

It is a legal requirement to prevent sediment from entering a *waterway* or drain.

When to contact Environmental Services
02 9394 6659

a) Incidents involving erosion and sediment.

b) Ground disturbance > 250m^2 at any one time.

c) Ground disturbance > 50m^2 of *vulnerable land*.

d) Ground disturbance > 50m^2 within 40m of a natural *waterway*.

e) Disturbing a natural *waterway*, including dredging (excavating) and reclamation (filling).

f) Works cannot meet the requirements in this section of the *Handbook*.

A specialist assessment and/or erosion and sediment control plan (ESCP) may be required.

Definitions

Ecologically sensitive areas refer to section 6.1.

ESCP is a site-specific erosion and sediment control plan prepared in accordance with the *Blue Book* (Managing Urban Stormwater – Soils and Construction (Volume 1)).

pH (potential of hydrogen) is a measure of the acidity or alkalinity of a solution.

Vulnerable land means mapped areas of NSW that are especially vulnerable to soil erosion, sedimentation and landslip. It includes steep, highly erodible or protected riparian land (the interface between land and a natural *waterway*).

Waterway includes a creek, river, canal, stormwater drain, beach, lake or lagoon.

Wet-vac is a vacuum cleaner that can be used to clean up wet or liquid spills.

Zone of influence means the area next to an excavation where applying a load to the ground can affect the stability of the excavation. It extends from the base of the excavation to the surface at an angle that is dependent on the soil type.

2.1.1 Pre-work checks

a) Check the requirements of any applicable *planning approval* or *other approvals* (refer to section 1.5). If *a planning approval* is not required, and the works involve excavation, then check the WebGIS EL.

b) Check the requirements of any applicable *ESCP*.

c) Check drainage diagrams for substations and depots (*Employees* can access these on The Wire and the Vault respectively).

d) Have current erosion and sediment control training if undertaking activities that have the potential to generate sediment runoff (refer to Table 1.3-1).

2.1.2 Six steps for effective erosion and sediment control

Note: Preventing erosion is the most efficient and effective way to ensure sediment stays on the worksite and out of drains and *waterways*. Once eroded, fine soil particles are difficult and expensive to remove from site run-off.

STEP 1 - Assess the site and proposed works for risks of erosion and sedimentation

a) Identify potential water flows and the receiving environment, such as:
- slopes, drainage lines, grates, drains and inlets
- areas subject to bogging
- waterways and ecologically sensitive areas.

b) Identify potential for erosion, such as:
- *vulnerable land* (refer to WebGIS EL)
- existing exposed areas
- areas likely to be disturbed by the works.

c) Identify requirements for activities with high erosion and sedimentation risk, such as:
- stockpiling (refer to section 2.1.3)
- underboring (refer to section 2.1.4)
- access track works (refer to section 2.1.5)
- saw-cutting (refer to section 2.1.6)
- depot material bays (refer to section 2.1.7).

Locating slopes, drainage lines and inlets will help determine the controls required

STEP 2 - Minimise erosion potential

a) Minimise ground disturbance and the removal of groundcover.

b) Avoid disturbed areas and areas prone to bogging, especially during wet weather.

c) Where required, provide additional ground cover such as grass, mulch or temporary construction mats (refer to section 5.4).

d) Phase works to minimise land exposed at any one time.

e) Minimise surface water flowing onto the worksite using barriers such as diversion drains, sandbags or sediment fences (refer to section 2.1.8).

f) Stabilise disturbed areas if a break in works of > 21 days will occur (such as turf, geotextile, mulch, soil binders or fast-growing seed).

Place soil upslope of excavations, outside of the *zone of influence* (refer to Figure 2.1-1).

Spoil temporarily placed on tarp to contain spoil and assist clean up

Temporary construction mats help minimise ground disturbance

STEP 3 - Install sediment controls

a) Place sediment control devices to protect drainage lines, grates, drains, inlets, and *waterways*. Common examples include geotextile bags, coir logs, sediment fences, diversion drains, grass filter strips and stabilised entry/exit points (refer to section 2.1.8).

b) Sediment control devices should be installed:

- before work starts
- as close as practicable downslope of disturbed areas and stockpiles
- in a manner that doesn't impede drainage or cause localised flooding
- so that disturbance to ground cover is minimised.

c) Install adequate controls at vehicle entry and exit points (such as an aggregate bed, rumble grid or wheel wash).

Grass filter strips can be used as an effective natural barrier

STEP 4 – Practice good site management

a) Separate topsoil, ground cover and contaminated spoil to aid reuse or disposal (refer to section 5.3).

b) Clean mud from wheels and vehicle underbodies before leaving the worksite to prevent tracking sediment, and sweep streets as required.

c) Cover loads to prevent spilling material during transport.

d) Apply the appropriate controls for managing accumulated water (refer to section 2.2).

e) Clean the worksite and put adequate controls in place before finishing for the day.

Cover loads to prevent dropping spoil or creating dust

STEP 5 - Inspect and maintain controls

a) Regularly inspect controls (especially before and during periods of rainfall) to check they are working effectively and no sediment leaves the worksite.

b) Regularly maintain controls:

- **clean**: remove sediment build up
- **repair**: fix defects
- **replace**: replace degraded products
- **improve**: incorporate additional controls as required.

Regularly inspect and maintain erosion and sediment controls

STEP 6 - Rehabilitate disturbed areas

a) Stabilise disturbed areas promptly (such as turf, mulch, jute mesh, grass seeding). Include progressive rehabilitation where required.

b) Restore all surfaces to their original condition or as specified by the relevant authority.

c) Maintain rehabilitated lands to establish sufficient groundcover to prevent erosion.

d) Remove temporary erosion and sediment controls once the worksite is stabilised or rehabilitation is complete.

Rehabilitate disturbed areas to prevent erosion

2.1.3 Stockpiling

a) Reduce the need for stockpiling. Controls could include:

- tip spoil directly into a truck or skip bin
- schedule deliveries so that materials are delivered as required
- have materials delivered in containers such as bulk storage bags
- reuse spoil elsewhere on-site.

b) When stockpiling is required:

- avoid placing stockpiles near roadways, gutters, *waterways*, drains slopes and concentrated flow paths.
- avoid placing materials within the *zone of influence* (refer to Figure 2.1-1)

c) Protect stockpiles at risk of wind or water erosion. Controls could include:

- place stockpiles on a tarpaulin
- cover or contain stockpiles if the worksite is left unattended or when rain is expected
- divert surface water flowing onto the stockpile using upslope barriers such as a sediment fence
- install sediment controls downstream of the stockpile.

Tipping spoil directly into a truck or skip avoids stockpiling

Bulk storage bags help contain materials

Stockpile covered to prevent dust and a sediment fence used to filter run-off

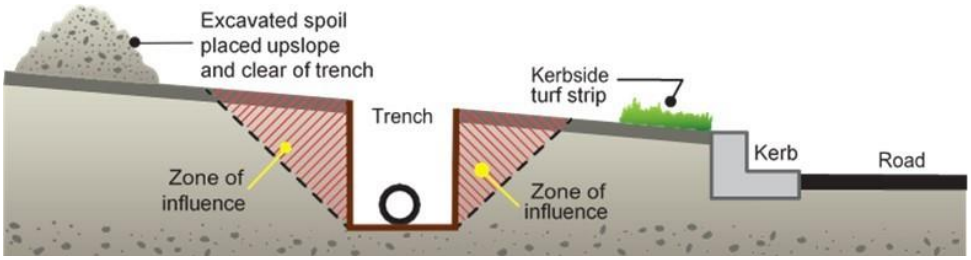


Figure 2.1-1: Stockpile located upslope of the excavation to prevent sediment entering the gutter

2.1.4 Underboring

a) Use a recirculating drilling fluid system.

b) Prepare a contingency plan to deal with a potential frac-out (inadvertent release of drilling lubricant).

c) Monitor for frac-outs during underboring.

2.1.5 Access tracks

a) New access tracks, widenings and realignments require a *planning approval* (refer to section 1.5).

b) Maintenance of access tracks requiring vegetation removal may require a *planning approval* (refer to 6.1.2).

c) Maintenance of access tracks in national park estate will require a conservation risk assessment (CRA) (refer to 6.1.4).

d) Undertake maintenance of tracks in accordance with the requirements of NSW Erosion and sediment control on unsealed roads.

e) Where possible, avoid using access tracks where damage could result (such as wheel ruts, sedimentation, affect drainage).

2.1.6 Saw-cutting

Slurry from saw-cutting must be contained as it has a high *pH* (alkaline). Controls include:

a) Use minimal water during cutting to create a slurry that can be readily contained.

b) Contain slurry using a *wet-vac* and sandbags, where possible.

c) If not using a *wet-vac*, contain slurry using sandbags or barriers and remove from the worksite.

d) Sweep slurry residue into a contained area before it dries.

e) Dispose of spadeable slurry as general solid waste and liquid slurry to a liquid waste treatment facility (refer to section 5.3).

Wet-vac used to collect saw-cutting slurry

Saw-cutting slurry has not been contained effectively

2.1.7 Depot material bays

a) Do not overfill the bays – keep material within the marked area of the bays to control sediment and dust.

b) Sweep any spilled material back into the bays before leaving site.

c) Supervise deliveries to confirm materials are unloaded within the bays.

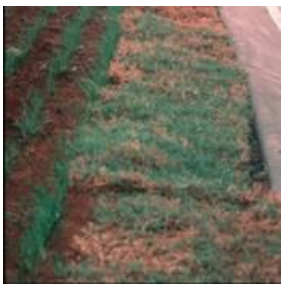
d) Inspect and maintain the material bay facility after each use and after periods of rainfall.

e) Rectify or report any issues such as clogged weep holes and gravel drains (for Ausgrid properties, report via PropertyOneCall).

Store material in correct bays to avoid cross contamination

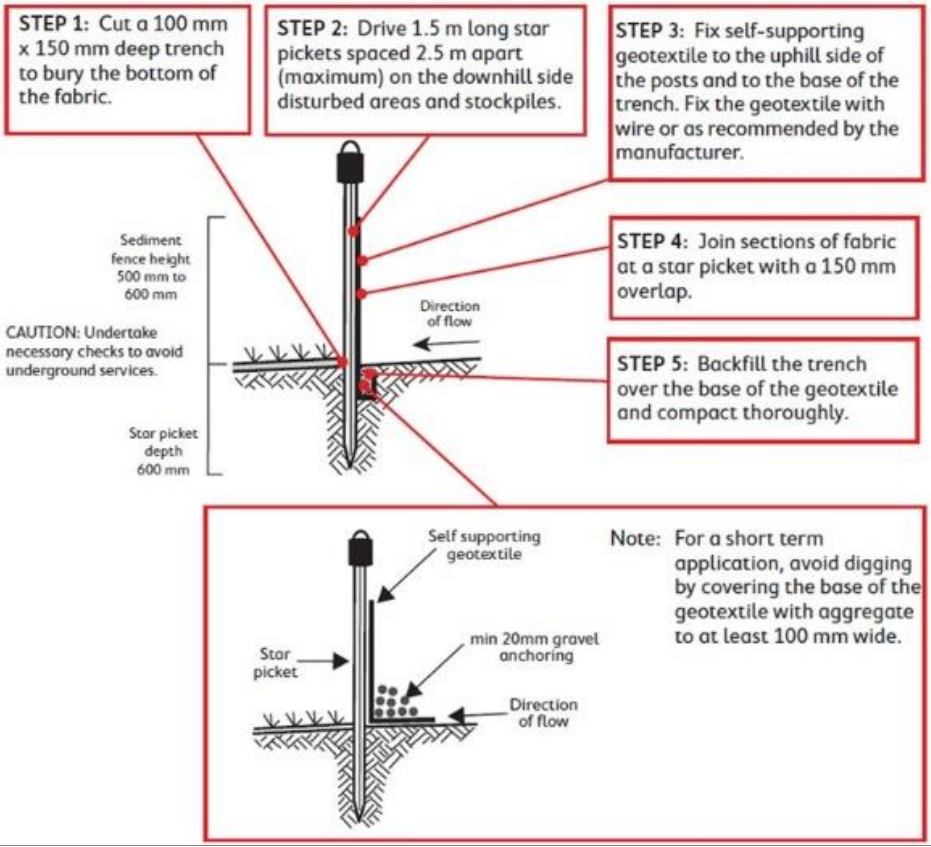
2.1.8 Erosion and sediment control devices The system of erosion and sediment controls will depend on site specific circumstances and should consider advantages and limitations of each control (refer to Table 2.1-1).

Table 2.1-1: Erosion and sediment control devices

Device	Example	Use
Geotextile bags	 	**When to use:** Limit sediment build up in stormwater drains by collecting coarse sediment. **How to use:** Fill the filter bags to two-thirds capacity with minimum 20mm aggregate. Form a seal against the kerb to prevent sediment bypassing the filter. **Advantages:** Simple to construct and can limit sediment build-up in stormwater drains. **Limitations:** Designed to filter small flows. Will not filter fine particles <0.02mm, such as clay or silt. Can easily be damaged by traffic.
Coir logs (densely packed coconut fibre)	 	**When to use:** For unsealed surfaces or where filtering is required. **How to use:** Level the area beneath the logs prior to placement. Stake logs at regular intervals on either side to prevent movement. **Advantages:** Natural, biodegradable logs can be used in *ecologically sensitive areas*, steep slopes and gullies. **Limitations:** Can become heavy when wet. Require suitable anchorage due to low buoyant weight.
Grass filter strip		**When to use:** Reduce the risk of rill erosion on steep slopes and filter sediment from run-off. **How to use:** Place 300mm wide turf strips along the contour where possible. If not possible, place lateral strips every 5m to prevent rill erosion. Peg on steep slopes if necessary. **Advantages:** Effective at preventing erosion. Well-suited to linear excavations adjacent to the road/footpath. **Limitations:** Will allow fine particles to flow through as flow increases.
Temporary construction mats		**When to use:** Prevent vehicles bogging in soft or muddy ground and minimise damage to ground cover to prevent erosion. **How to use:** Place end-to-end to create an all-weather track. **Advantages:** Prevents damage to turf and groundcover, reducing restoration costs, and minimises mud tracking off-site. **Limitations:** Can be difficult to manoeuvre in muddy conditions (Ausgrid has a purpose made tool, with instructions, to assist).

Device	Example	Use
Sediment fence		**When to use:** Settle coarse sediment from sheet flow or to contain stockpiles. **How to use:** Place slightly convex to the site contours with ends turned up to create a settlement pond. Bury at least 150mm deep and stake every 2.5m (see Figure 2.1-2). Use geotextile, not shade cloth. **Advantages:** Very effective if installed and maintained correctly. **Limitations:** Not designed to filter concentrated flows. Will not filter fine particles <0.02mm, such as clay or silt.

Figure 2.1-2: Sediment fence installation instructions



Upslope diversion drain		**When to use:** Divert stormwater around the work area. **How to use:** Create small turf or geotextile lined catch drains or use diversion banks. Avoid diverting onto neighbouring properties. **Advantages:** Prevents erosion, reduces the amount of run-off that must be managed and keeps the site drier. **Limitations:** Depending on water flows, it may be necessary to line the drain or bank with turf or geotextile to avoid soil erosion.
Stabilised site access		**When to use:** Prevent vehicle access routes from becoming a source of sediment and reduce the likelihood of vehicles bogging on site. **How to use:** Level, compact and cover the area with geotextile. Then cover with a 200mm deep layer of 30-75mm aggregate. **Limitations:** Extra crushed rock or recycled concrete may need to be added to maintain its effectiveness. Street sweeping on adjacent roads may still be required.

2.2 WATER DISCHARGE

Background

Water discharge may be required to deal with accumulated water from excavations, pits, substations or bunds.

Improper water discharge can harm the environment. Only clean rainwater is allowed to enter a *waterway* or drain, any other liquid or solid is considered a pollutant.

Accumulated water requiring removal must be assessed to determine discharge/ disposal options. In some cases, sampling, tracking and licensing requirements apply.

Sediment filter bag

Preventing accumulated water in the first instance reduces the need to assess and discharge/dispose, which minimises project costs and delays.

When to contact Environmental Services
02 9394 6659

a) Incidents involving water discharges.

b) Water discharge is required that will be automatic (eg float switch activated pump), long-term or more than 100,000L.

c) Water has an unusual smell, colour, scum, foam or other evidence of contamination (refer to section 5.1).

d) Groundwater extraction is required.

e) Works cannot meet the requirements in this section of the *Handbook*.

Oil filter bag

A specialist assessment and/or site-specific water management plan may be required.

Definitions

NTU (Nephelometric Turbidity Unit) is the unit of measure of a liquid's *turbidity*.

pH (potential of hydrogen) is a measure of the acidity or alkalinity of a solution.

Turbidity is a measure of a liquid's cloudiness caused by suspended particles.

2.2.1 Pre-work checks

a) Check the requirements of any applicable *planning approval* or *other approvals* (refer to section 1.5).

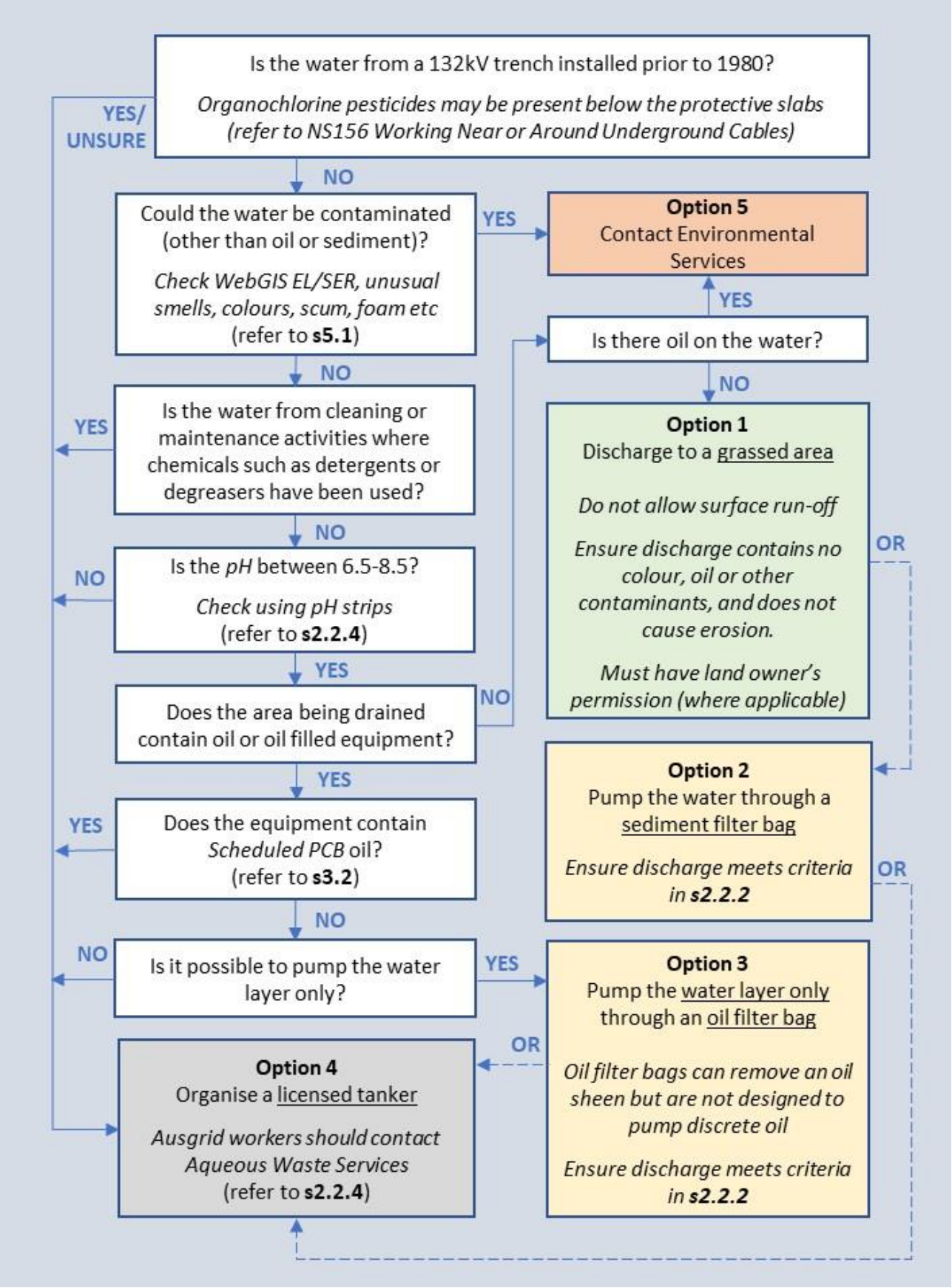
b) Use Figure 2.2-1 to determine options for managing accumulated stormwater from excavations, pits, substations or bunds.

c) Check the requirements of any applicable water management plan.

d) Check for drainage lines, grates, drains, inlets, *waterways*, exposed surfaces, and areas subject to poor drainage.

e) Have current discharging water training if supervising discharges through filter bags (refer to Table 1.3-1 and section 2.2.2).

Figure 2.2-1: Process for managing accumulated water from excavations, pits, substations or bunds



2.2.2 Discharging through filter bags

a) *Employees* can find the filter bag work instruction in EWMS 163 Discharging through a filter bag (PLUS ES).

b) The *worker* supervising the discharge must have current discharging water training (refer to Table 1.3-1).

c) Monitor the discharge to ensure the:

- *pH* is between 6.5 and 8.5 - follow the instructions on the *pH* test strip packet
- *turbidity* < 50 *NTU* (refer to section 2.2.3)
- discharge contains no colour, oil or other contaminants
- discharge does not cause erosion (refer to section 2.1).

pH test strips

Note: Oil filter bags can remove an oil sheen but will fail if filtering large amounts of oil.

Note: Sediment filter bags can remove sediment but will fail if filtering large amounts of sediment, such as from unlined excavations.

2.2.3 How to check turbidity

Check the *turbidity* of the discharge is < 50 *NTU*.

a) Collect a sample of the discharge in a clean bucket/other container.

b) Fill the tube to the 50 *NTU* mark.

c) Hold the tube upright and out of direct sunlight.

d) Look vertically down the tube to check the indicator symbol on the bottom of the tube is distinguishable. If not, the turbidity is > 50 NTU.

Note: To measure the turbidity, keep adding water to the tube until the indicator symbol is only just distinguishable. Note the reading in NTU from the scale on the side of the tube.

Indicator symbol at the base of the tube

Indicator symbol no longer visible in the tube

2.2.4 Organising a licensed tanker removal

Ausgrid employees can contact Aqueous Waste Services:

a) 3 days' notice is required for planned works. Use the liquid waste removal form available on The Wire.

b) For emergency pump-outs, call the Aqueous Waste Services' after-hours number (refer to section 10).

2.2.5 Discharges to sewer

a) Non-domestic discharges to sewer (such as washbays) must be in accordance with a permit from the relevant sewerage authority (refer to section 8.2.5). Domestic discharges include wastewater from amenities.

b) An approval from the relevant sewerage authority is required to install, operate or alter a septic tank.

2.3 OILS, FUELS AND OTHER CHEMICALS

Background

Oils, fuels and other chemicals are used at various locations across the network. Examples of chemicals include paints, solvents, resins, glues, lacquers, thinners, detergents, cleaning agents, lubricants and PFAS (per- and poly-fluoroalkyl substances).

Spills and leaks can cause water pollution, land contamination and harm the environment.

Oils, fuels and other chemicals must be prevented from entering the environment and must be handled, stored, transported and disposed in accordance with legal requirements.

When to contact Environmental Services
02 9394 6659

a) Incidents involving oils, fuels and other chemicals (refer to section 9).

b) Oil transfers > 25,000 litres (L).

c) Works cannot meet the requirements in this section of the *Handbook*.

A specialist assessment and/or environmental work method statement (EWMS) may be required. Additional *WHS* requirements may apply. Refer to the *SWMS*, *SDS* and product label. *Employees* can use ChemAlert.

Definitions

EWMS is an environmental work method statement.

HAZCHEM is hazardous chemicals.

PCB is polychlorinated biphenyls (refer to section 3.2).

PPE is personal protective equipment.

ppm is parts per million (equivalent to milligram per kilogram (mg/kg)).

Scheduled PCBs means material that has a *PCB* concentration ≥ 50ppm.

SDS means safety data sheet. Available to *employees* from ChemAlert.

SWMS means safe work method statement.

WHS is work health and safety.

2.3.1 Pre-work checks

a) Check the requirements of any applicable *planning approval* or *other approvals* (refer to section 1.5).

b) Check the requirements of any applicable *EWMS* (oil transfers > 25,000L).

c) When using oil storage areas, check signage for requirements.

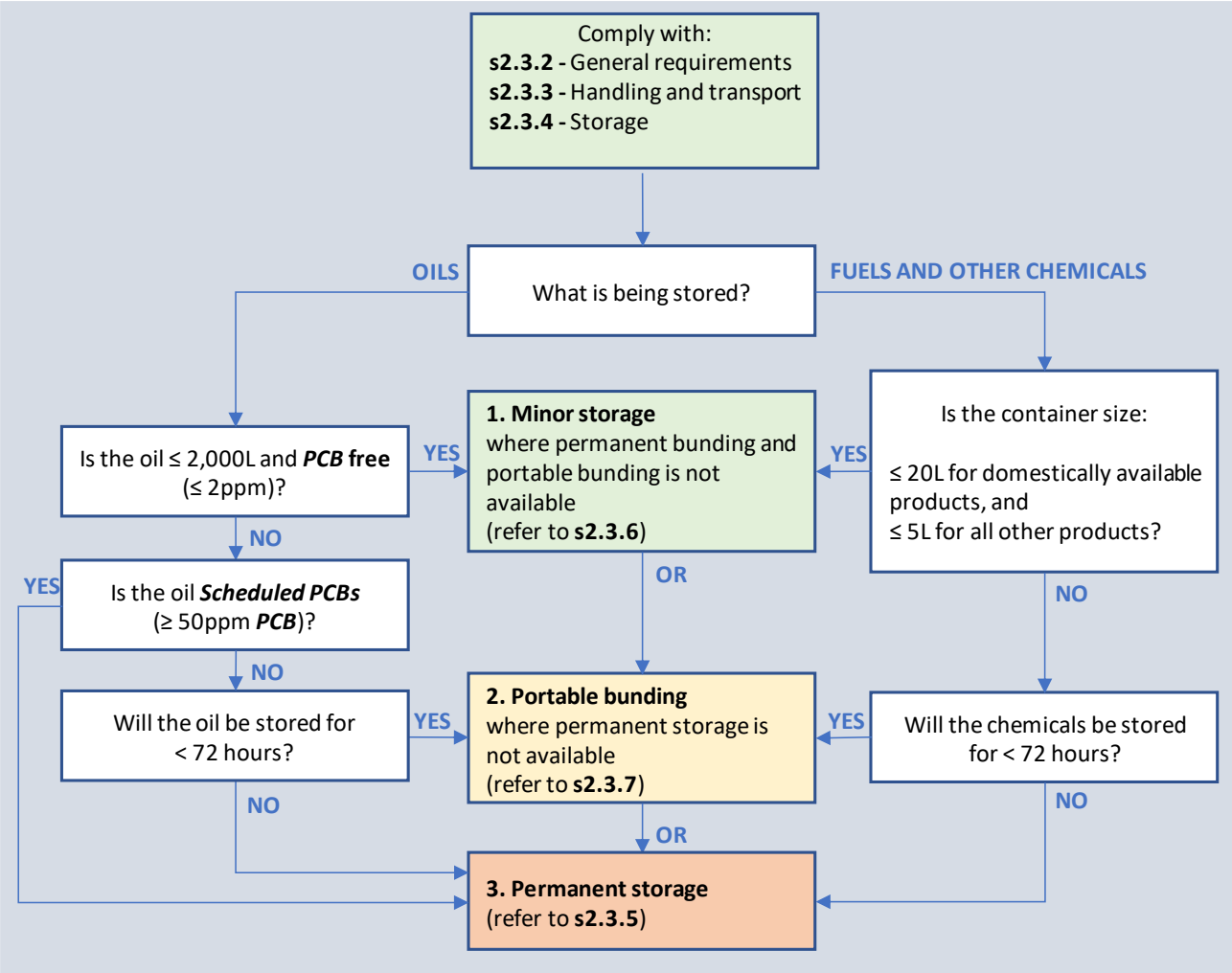
d) Check for drainage lines, grates, drains, inlets and *waterways*. Drainage and oil containment diagrams are available for depots and substations (*Employees* can check The Wire and the Vault respectively).

Check whether nearby drains go to stormwater, sewer or the oil containment tank

e) Use Figure 2.3-1 to determine oil and chemical storage options.

f) Have current oil handling and spill response training if regularly handling, transporting or storing oil (refer to Table 1.3-1).

Figure 2.3-1: Environmental requirements for storing oils, fuels and other chemicals



2.3.2 General requirements

a) Comply with the requirements of the *HSMS*, *SWMS*, *SDS* and product label. *Employees* can access *SDS* from ChemAlert.

b) Handle, store, transport and dispose of oils, fuels and other chemicals in an environmentally responsible manner.

c) Have an appropriate spill kit(s) on-site and response procedures accessible when handling, storing or transporting oils, fuels and other chemicals (refer to section 2.3.9).

Spill kits should be readily available near oil storage areas

d) Clearly label containers (refer to section 3.2.4 for labelling *PCB* oil).

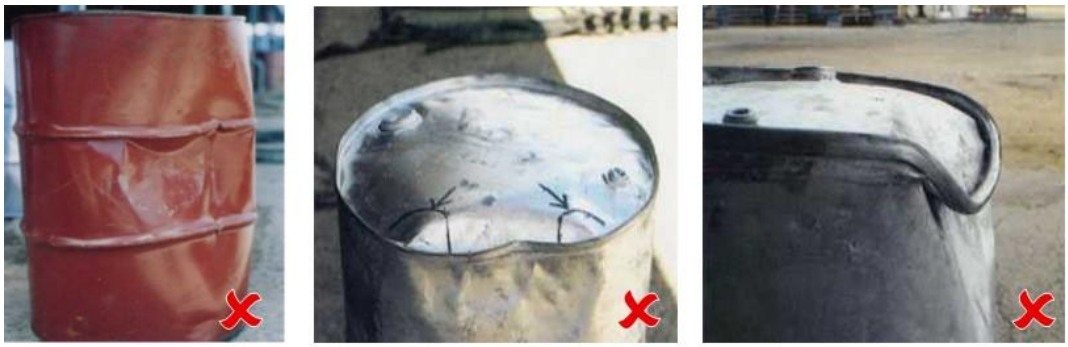
e) Check equipment, drums and containers are in good condition and fit for purpose (no leaks or structural defects such as rust, corrosion, dents or damage on flanges).

f) Immediately respond to, clean up and report spills and leaks (refer to section 9).

g) Dispose of used oil spill response absorbent material as general solid waste if the oil is *PCB free* and contains no free liquids (refer to section 5.3).

h) If used oil spill response material contains *PCBs,* contact Environmental Services on 02 9394 6659.

i) Record network asset oil top-ups in SAP.



Sharp indents and damage to the rolling hoops or edges are potential leak points

Drums in poor condition, not bunded, labelled or covered can leak and contaminate land or waterways

2.3.3 Handling and transport

a) Handle oils, fuels and other chemicals such that spills can be recovered before entering a drain or *waterway* (for example, on hard stand, within a bunded area, under cover).

b) Position transfer equipment as far as practicable away from drains and property boundaries.

c) Monitor hoses, connections, taps and pumps while in use.

d) Protect drains, *waterways* and property as necessary when handling oil filled equipment.

e) Regularly inspect and maintain plant, equipment and containers used in the handling and transport of oils, fuels or other chemicals.

f) Secure equipment and containers prior to transport.

g) Transport equipment and containers in a manner that prevents leaks.

h) Oil transport tankers should not be used for storage of oil unless in accordance with section 2.3.4.

2.3.4 Storage

a) Use Figure 2.3-1 to determine storage options.

b) Permanent storage facilities should be the first preference for storage of oils, fuels, other chemicals and oil filled equipment.

c) Spare transformer bays that are bunded and drain to an oil containment system should be used for oil storage, where permanent storage facilities are not available.

d) Store oils, fuels and other chemicals such that potential spills:

- can be recovered and not enter a drain or *waterway*
- would not contaminate land
- would not reach ignition sources, stores of other chemicals, combustible materials or incompatible chemicals.

e) Keep the area in and around the storage area free of combustible materials.

f) When storing equipment and containers consider the suitability of the location (such as level ground, not susceptible to vehicular impact, hard stand, under cover, secure area).

g) When storing drums and containers, label them with a point of contact and the contents (if these may not be readily identified).

h) Separate incompatible chemicals (refer to the *SDS* and product label to check for any incompatibilities. *Employees* can use ChemAlert).

i) Dispose of Ausgrid equipment that does not meet reuse requirements in MRPA 118 (for example, pole transformers more than 20 years old and most other transformers manufactured before 1997).

Equipment stored too close to the bund wall means leaks may not be contained

Permanent storage facilities should be the first preference for storage

Self-bunded (double-walled) transportable tanks can be used for permanent storage

Use bunded chemical storage cabinets to store fuels and chemicals

2.3.5 Permanent storage

a) Comply with the general storage requirements (refer to section 2.3.2 and 2.3.4).

b) Confirm the bund is at least 110% of the volume of the largest container.

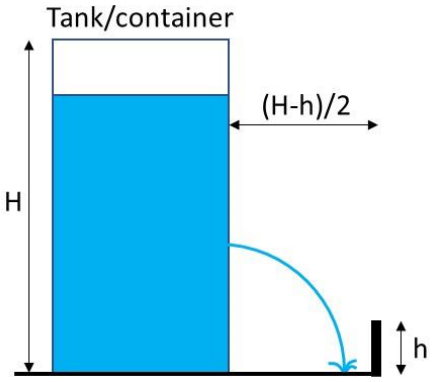
c) Check bunds are in good condition (for example, not leaking, free of debris, drain valve closed, emptied of accumulated rainwater – refer to section 2.2).

d) Rectify or report any issues via PropertyOneCall (for *employees*).

e) Maintain the required spray distance from the bund wall (half the height of the container above the bund wall) – refer to the spray distance diagram.

f) Comply with section 3.2.4 when storing *scheduled PCBs*.

g) Permanent storage facilities are to be located and constructed in accordance with relevant standards specific to the liquid being stored (such as AS 1940 The storage and handling of flammable and combustible liquids).



Spray distance diagram

2.3.6 Minor storage

a) Comply with the general storage requirements (refer to sections 2.3.2 and 2.3.4).

b) Use permanent storage or portable bunding where available.

c) Minor storage is not suitable for storing:

- > 2,000L oil
- > 2ppm *PCBs*
- > 20L of domestically available fuels and chemicals
- > 5L of all other fuels and chemicals.

d) Position minor storages in accordance with relevant standards. For example, AS 1940 requires minor oil storage areas to be:

- separated by 20m indoors or 15m outdoors, from other minor storage areas
- separated by 5m from other stores of flammable or combustible liquids, ignition sources or building openings, and by 1m from a property boundary
- near a readily accessible portable fire extinguisher where > 1,000L is stored.

e) For fuels and chemicals, store in a bund unless the following requirements are met:

- container size is < 20L for domestically available products, or < 5L for all other products
- all other *WHS* requirements have been met.

2.3.7 Portable bunding

f) Comply with the general storage requirements (refer to section 2.3.2 and 2.3.4).

g) Use permanent storage where available.

h) Portable bunding is not suitable for *scheduled PCBs*.

i) Portable bunding is not suitable for storing for > 72hrs if storing:

- > 2,000L oil
- > 2ppm *PCBs*
- > 20L of domestically available fuels and chemicals
- > 5L of all other fuels and chemicals.

j) Confirm the bund is at least 110% of the volume of the largest container.

k) Check bunds are in good condition (for example, impervious, free of debris, emptied of accumulated rainwater – refer to section 2.2).

l) Cover portable bunding when it might be exposed to rain.

m) Keep portable bunds at least 5m from ignition sources, flammables, combustibles or building openings and 1m from a property boundary.

n) Keep a portable fire extinguisher readily accessible where > 1,000L is stored.

Bunded pallets can be used for temporary storage of drums

Bunded pallets should be covered when exposed to the weather

2.3.8 Surplus chemicals

Storage of excess or redundant chemicals can present an unnecessary safety and environmental risk.

a) Dispose of surplus chemicals in a timely manner.

b) Dispose of surplus chemicals correctly (refer to section 5.3).

c) Use appropriate *PPE* when handling chemicals – refer to the *SDS* and advice from your safety advisor if required. *Employees* can use ChemAlert.

d) Update *HAZCHEM* manifests as required.

2.3.9 Spill kits

e) Refer to Table 2.3-1 for a summary of how and when to use different products for spills. *Employees* can find advice on kit contents and their use in EFS 022 Oil Spill Kits and EGN 101 Spill Response Information.

f) Check the *SDS* / label of the spilled product for any specific instructions.

g) For *pesticide* spills, powder absorbent and hydrated lime are often used. Do not use sawdust as it is a fire hazard. Use sodium carbonate (soda ash) to clean reusable equipment if available, otherwise use water.

h) The contents of each spill kit should reflect the risk and will depend on where and how oils, fuels and other chemicals are stored, handled or transported. The three main oil spill response kits used at Ausgrid, including their typical capacity are:

- elevated work platform (EWP), lifter/borer & van kits – 22L capacity
- truck kit (transporting oil or oil filled equipment) – 70L capacity
- depot kit – 250L capacity.

Spill kit contents include:

- spill response procedure or QR code (refer to section 9)
- safety equipment and *PPE* (gloves, P1 mask, safety glasses etc)
- absorbent material and booms (socks, pads, loose absorbent etc)
- general equipment and tools (brush and pan, bags, tape etc).

The general types of spill kits available are:

- oil only – for oil-based liquids such as oils, fuels and lubricants (these products are hydrophobic and will float on water)
- general purpose – for oil and water-based liquids, including weak acids and alkalis (these products absorb water and will not float on water)
- *HAZCHEM* – for aggressive chemicals (toxic, corrosive, *pesticides* etc).

The contents of each spill kit should reflect the risk and will depend on where and how oils, fuels and other chemicals are stored, handled or transported

Ausgrid's spill response procedures are available by scanning the above QR code

Table 2.3-1: Oil spill response material

Product	Example	Use
Socks		**When to use:** Spills and leaks requiring containment. **How to use:** Surround leaking drums, place in the flow path, or as a floating boom. **Capacity:** A 3m sock will hold approximately 6L of oil. **Comments:** Netted socks are available for use with high water flows. Product is not designed to float for long periods and will sink when full of oil.
Booms		**When to use:** Spills and leaks requiring containment in an aquatic environment (such as a creek, stormwater channel). **How to use:** Booms are similar to socks but are generally larger and can be used to extend across a *waterway* to contain a spill. Booms are used to create a floating barrier. **Capacity:** Booms may or may not be absorbent. **Comments:** May require more than one person to install and maintain.
Pillows		**When to use:** Spills and leaks involving pits and drains. **How to use:** Place in drain, pit or gutter. **Capacity:** Approximately ½ the volume of the absorbent (for example, a 20L pillow will absorb 10L of oil). **Comments:** Netted pillows are available for use with high water flows.
Loose absorbent		**When to use:** Spills, leaks, drips and clean up. **How to use (land):** Place on spill and spread with a broom for maximum absorption. **How to use (water):** Spread over the spill, usually in conjunction with a boom and then collect product with a pool scoop. **Capacity:** Approximately ½ to 1 times the volume of the absorbent (for example, a 50L bag will absorb 25-50L of oil). **Comments:** Product is not designed to float for long periods and will sink when saturated.
Pads		**When to use:** Oil and fuel spills, leaks, drips, and clean up. **How to use:** Place under leaks/drips, as a floating pad, in trafficable areas, in drip trays, or use as a wipe. **Capacity:** Approximately 1L of oil per pad. **Comments:** Product is not designed to float for long periods and will sink when saturated.
Putty		**When to use:** Quick temporary seal for damaged equipment or storage tank. **How to use:** It may be a putty or granular (requiring mixing with water). Wearing gloves, apply putty over the damaged area to create a seal and stop the leak. **Comments:** Not to be used as a permanent repair. Damaged item should be drained immediately.

3 HAZARDOUS MATERIALS

3.1 ASBESTOS

Background

Asbestos has unique properties, such as fire resistance and low conductivity, that led to its widespread use. It was used as insulating material in cable bandages, joints, pits and conduits, switchboards and LV Boards, and was routinely installed in substation buildings in the form of asbestos cement sheeting and floor tiles.

Asbestos fibres

Asbestos is a known carcinogen. Inhalation of fibres can cause lung damage. The risk is dependent on the type of fibre, the amount of asbestos dust in the air and the duration of exposure. When in good condition and managed correctly, asbestos containing material (ACM) presents negligible risk to *workers* and others.

ACM must be assessed, classified, registered, stored, handled, transported and disposed in accordance with legal requirements. Labelling and licensing may be required for the removal, transport, storage and disposal of asbestos wastes.

When to contact Hazmat 0417 295 157

Ausgrid's Asbestos Register identifies work locations where asbestos may be present and details what could be found at a location. The register is accessible to *employees* via the Asbestos Gateway (PLUS ES). *ASPs* and contractors can access records from the register via their Ausgrid point of contact.

Contact Ausgrid's Senior Project Officer – Hazmat (refer to section 10) if:

a) Asbestos sampling is required.

b) A new asbestos hazard has been identified.

c) *Asbestos in soil* is identified (refer to section 5.1 for the additional requirements regarding *asbestos in soil*).

d) Asbestos has been illegally dumped on Ausgrid property (for asbestos dumped on public property, refer to the Asbestos Quick Guide).

e) Information in the Asbestos Register does not reflect current observed conditions.

f) Works cannot meet the requirements, or requirements are unclear in NS211 Working with asbestos products or relevant training (refer to Table 1.3-1).

g) Works cannot meet the requirements in this section of the *Handbook*.

Definitions

ACM is asbestos containing material, which is any material or part of a thing that, as part of its design, contains asbestos. Products that contain asbestos are considered as being either *friable asbestos* or *non-friable asbestos*.

Asbestos in soil means soil contaminated with asbestos or inappropriately buried asbestos. This does not include asbestos conduit, joint boxes and troughing installed in accordance with Ausgrid's Network Standards.

Asbestos Register is an Ausgrid register that identifies work locations where asbestos could be present and details what could be found at a location.

Asbestos removal work means works involving the removal of asbestos or *ACM*, including removal by an independent *LAR*.

Friable asbestos means any material that contains asbestos and is in the form of a powder or can be crumbled, pulverised or reduced to powder by hand pressure when dry.

Hazmat is hazardous materials (such as asbestos, mercury, lead).

LAA is an external independent Licensed Asbestos Assessor.

LAR is an external independent Licensed Asbestos Removalist.

Non-friable asbestos means material containing asbestos (other than *friable asbestos*), including material containing asbestos fibres reinforced with a bonding compound. It can degrade and become *friable asbestos* over time or following an incident such as a fire.

3.1.1 Pre-work checks

a) Check the requirements of any applicable *planning approval* or *other approvals* (refer to section 1.5).

b) Check the WebGIS EL or Asbestos Register for the presence of known asbestos, suspected asbestos and naturally occurring asbestos (refer to Figure 3.1-1).

c) For underground assets, refer to Before You Dig Australia plans (*Employees* can refer to Network Viewer).

d) Check for equipment/buildings older than 2003 that have not been surveyed. If a *hazmat* survey is required, contact Ausgrid's Senior Project Officer – Hazmat (refer to section 10).

e) Undertake a visual assessment of the worksite and equipment for suspected asbestos (refer to Figure 3.1-3 and NS211 Annexure G – Asbestos product guide for examples of different types of *ACM*).

f) Use Figure 3.1-2 to determine requirements for working with asbestos.

g) Have current Asbestos training. All *workers* must have completed Asbestos Awareness training. *Workers* who work near ACM and where ACM might be disturbed by the work require current working with ACM training and *workers* who work with ACM and perform specific tasks require task specific asbestos training (refer to Table 1.3-1).

Figure 3.1-1: WebGIS EL showing a substation with known asbestos and naturally occurring asbestos

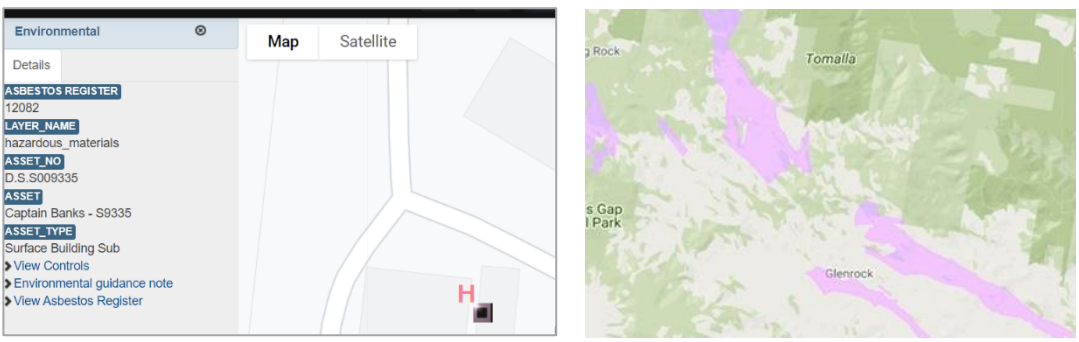
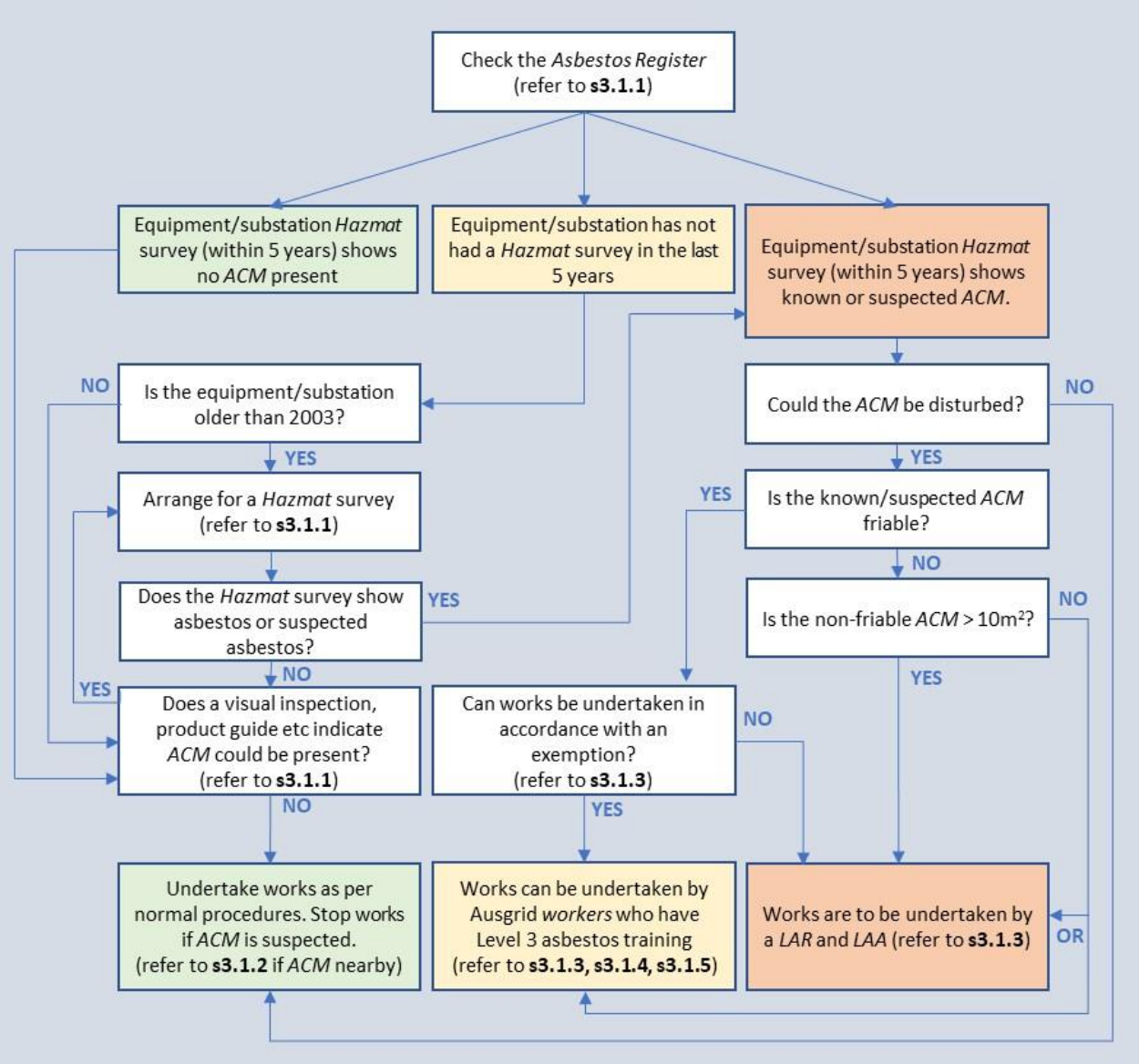


Figure 3.1-2: Process for working with asbestos



3.1.2 Working near asbestos

a) All *workers* are made aware of the presence of known and suspected *ACM*.

b) All works with the potential to disturb *ACM* must be undertaken in accordance with NS211 and relevant training (refer to Table 1.3-1).

c) If suspected asbestos is discovered, contact Ausgrid's Senior Project Officer – Hazmat (refer to section 10).

3.1.3 Working near or with asbestos

a) Undertake all works with *ACM* in accordance with NS211, relevant training (refer to Table 1.3-1), required PPE and conditions of any applicable current exemption for *employees* (PLUS ES).

b) No removal of > 10m^2 of *non-friable asbestos* without a *LAR* and *LAA*.

c) No removal of *friable asbestos* without a *LAR* and *LAA* (unless allowed by an exemption (for *employees* (PLUS ES)).

d) Notify occupants of the site and neighbouring properties of the commencement date and expected duration of any *asbestos removal work*.

e) At the completion of *asbestos removal work*, the following documents must be submitted to hazmat@ausgrid.com.au:

- HRR - Hazmat Remediation & Removal Form for all remediation and removal work
- Air monitoring results and clearance certificates (for licensed work).
- Landfill tipping dockets (for any waste disposed).

3.1.4 Transport and disposal of asbestos

a) Contain all asbestos waste and potentially contaminated materials on the worksite by:

- double bagging using 200µm thick clear asbestos waste bags and duct tape to close using a 'gooseneck' seal (PLUS ES), or
- wrapping in two individual layers of 200µm thick plastic sheeting (builders' plastic) with all joins overlapping by 300mm and taped to seal.

Note: Do not use cloth or electrical tape for sealing asbestos waste.

b) Clearly label as asbestos waste. Where builders' plastic has been used, this can be achieved by taping asbestos bags or asbestos barrier tape to the outer layer.

c) Protect the waste bags from tears or punctures from tools or other objects.

d) Transport asbestos waste using a covered and leakproof vehicle.

e) Wet down asbestos contaminated soil prior to transport.

f) Dispose of asbestos waste as soon as practicable.

g) Dispose of asbestos waste in an approved asbestos waste bin or to a licenced waste facility:

- *Employees* can deposit appropriately wrapped and labelled asbestos waste in secure asbestos bins located at certain depots (*employees* can refer to the Asbestos Gateway (PLUS ES)).
- If disposing directly to an *EPA* licensed facility, contact the facility before transporting to confirm any delivery requirements. On arrival inform the landfill operator that the waste contains asbestos.

h) If transporting asbestos waste to a waste facility, use WasteLocate to monitor loads >100kg or >10m^2 of asbestos sheeting (refer to section 5.3).

3.1.5 Resource recovery for network equipment older than 2003

a) Equipment identified as containing, or suspected of containing, asbestos should be tagged or labelled when removed from the network.

b) All asbestos must be removed from equipment before resource recovery. This must be done in accordance with NS211 and a clearance certificate issued by a *LAA*.

c) When scrapping equipment containing asbestos, Ausgrid *employees* can contact Supply Chain Operations (request forms are available on The Wire).

Figure 3.1-3: Examples of asbestos containing materials

Damaged fire door exposing asbestos core

Conduits in substation concrete floor

Non-chalking compound in substation wall

Distribution substation fence

Zelemite board phase barriers

Busbar trunking and fuse box

Moulded cement sheet troughing

Slydlok fuse

Millboard lining inside the fuse box

Asbestos containing paint

Moulded cement Asbestos rope inside broken fuse

Debris

Feeder cables at zone substation

Low voltage collar

Low voltage high rupturing capacity (HRC) fuse

Seal of 11kV oil circuit breaker (OCB) contactor box

3.2 POLYCHLORINATED BIPHENYLS

Background

PCBs are a group of synthetic compounds once used for their insulating properties and durability. *PCBs* could be present in transformers, current transformers (CTs), voltage transformers (VTs), oil circuit breakers (OCBs), fluid filled cables and lighting capacitors.

Incorrect handling of *PCBs* can harm human health, aquatic life, animals and the environment, and can cause land contamination.

PCBs must be prevented from entering the environment. *PCBs* must be classified, stored, handled, transported and disposed in accordance with legal requirements. Labelling and licensing are required for some activities.

When to contact Environmental Services
02 9394 6659

a) Incidents involving *PCBs*.

b) Works cannot meet the requirements in this section of the *Handbook*.

A specialist assessment, treatment or disposal may be required.

Additional *WHS* requirements may apply. Refer to the *SWMS*, *SDS* and advice from your safety advisor. *Employees* can use ChemAlert.

Definitions

ADG Code means the Australian Code for the Transport of Dangerous Goods by Road and Rail.

Articles includes oil filled equipment (such as transformers and switchgear).

DG is dangerous goods, which are solids, liquids, or gases that can harm people, other living organisms, property or the environment, and include *scheduled PCBs* in accordance with the ADG Code.

GHS means the Globally Harmonised System of Classification and Labelling of Chemicals.

IBC means intermediate bulk container.

Non-scheduled PCBs means material that has a *PCB* concentration > 2ppm and < 50ppm.

PCB free means material that has a *PCB* concentration ≤ 2ppm.

PCB licence (link for *employees*) means a licence issued under the EHC Act.

PCB material and waste includes oil, equipment, rags, oil absorbent products and soils that are contaminated with > 2ppm *PCBs*.

Receptacles means a container holding material (such as oil in a drum, container, tank or *IBC*, or soil in a Hazibag), but not equipment.

Scheduled PCBs means material that has a *PCB* concentration ≥ 50ppm.

3.2.1 Pre-work checks

a) Check the requirements of any applicable *planning approval* or *other approvals* (refer to section 1.5).

b) Use Figure 3.2-1 to determine *PCB* requirements.

c) When using oil storage areas, check signage for requirements.

d) Check for drainage lines, grates, drains, inlets and *waterways*. Drainage and oil containment diagrams are available for depots and substations (Ausgrid *employees* can check The Wire and the Vault respectively).

e) Have current oil handling and spill response training if regularly handling, transporting or storing oil (refer to Table 1.3-1).

3.2.2 Determine the PCB concentration

a) Determine the *PCB* concentration prior to disposing.

b) For equipment manufactured before 1997, *employees* should check the PCB Register or arrange testing. If not tested, assume the equipment contains *PCBs*.

c) For sampling, refer to EWMS 107 PCB Sampling.

d) Treat equipment manufactured from 1997 onwards as *PCB free*.

3.2.3 Labelling, transporting and storing PCBs

a) Refer to section 3.2.4 for a summary of *scheduled PCB* requirements.

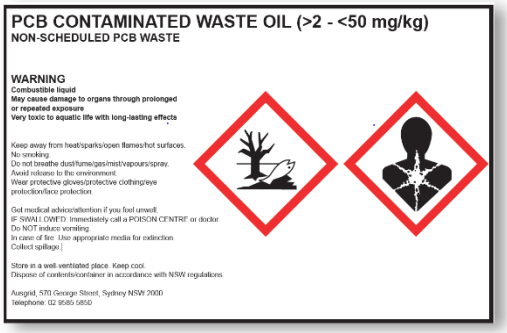
b) Clearly label *PCB waste* and have appropriate spill kits, response procedures and *PPE* accessible (refer to sections 2.3.9 and 9.1.2).

c) Label *non-scheduled PCBs* with the *non-scheduled PCB* waste *GHS* label.

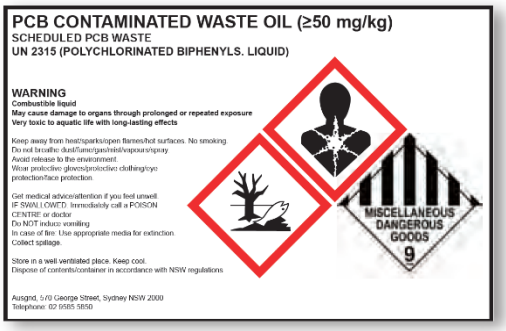
d) Label *scheduled PCBs* with the *scheduled PCB* waste *GHS* label.

e) Store *PCB material and waste* in accordance with section 2.3.4.

f) Transport *PCB material and waste* in accordance with section 2.3.3.



Non-scheduled PCB waste GHS label



Scheduled PCB waste GHS label

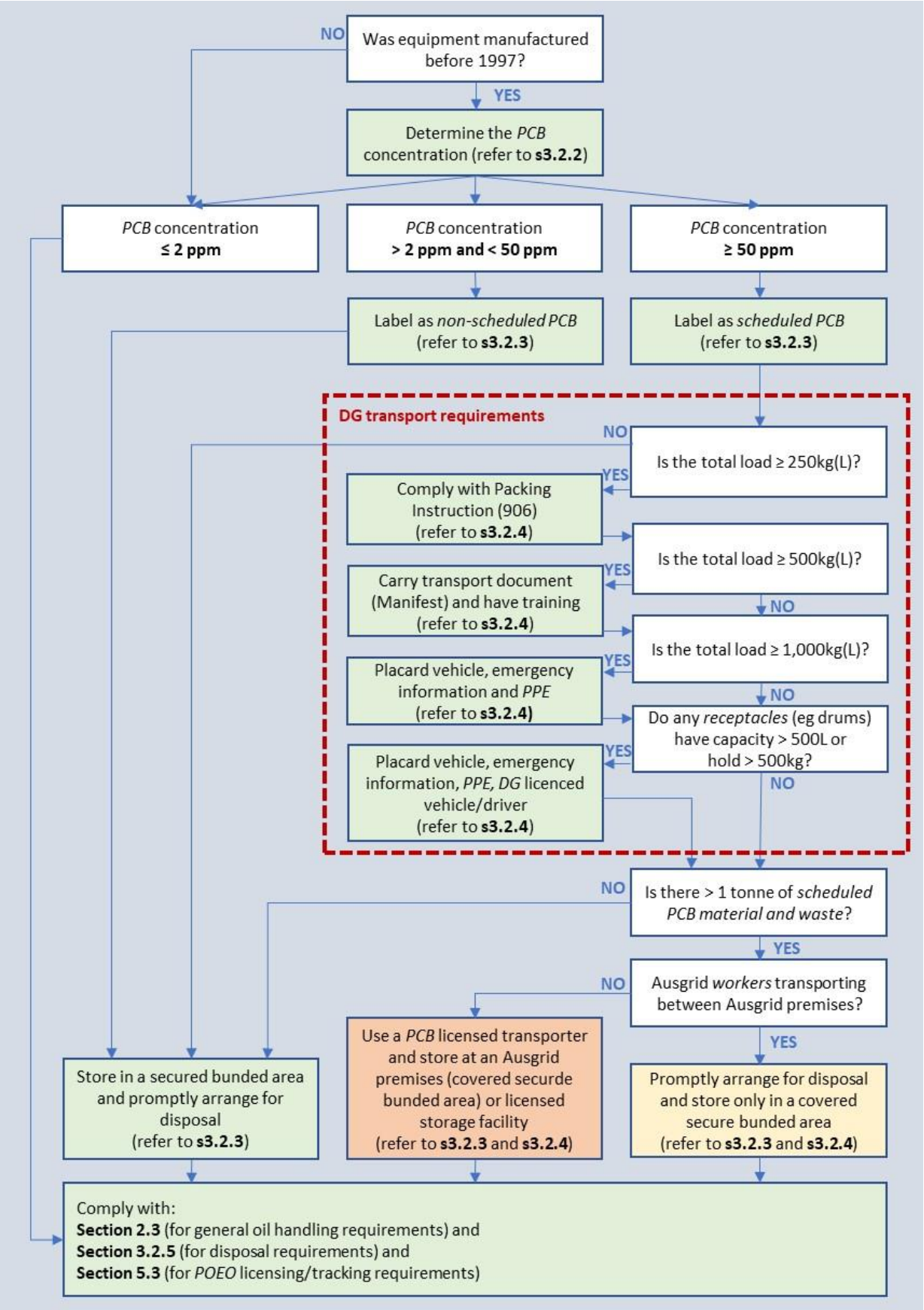
Dangerous Goods transport documentation

Ausgrid

Consignors name: Ausgrid 24 Campbell Street, Haymarket NSW 2000				**Consignors contact number:** (02) 9585 5850			
Consignees name: Ausgrid 24 Campbell Street, Haymarket NSW 2000				**Consignees contact number:** (02) 9585 5850			
Deliver to:				Date:			
				Transported by:			
UN number*	**Proper shipping name***	**Class / division***	**Subsidiary hazard**	**Packing group***	**Container type* (eg Drum, Transformer)**	**Number of containers***	**Aggregate quantity***
2315	Polychlorinated Biphenyls, liquid	9	-	II	205L drum	2	410L

Ausgrid Dangerous goods transport manifest (EF 106)

Figure 3.2-1: Process for managing of PCBs



3.2.4 Transporting and storing scheduled PCBs

a) When involved in the handling, transport or storage of oil, have current oil handling and spill response training (refer to Table 1.3-1).

b) Ensure loads are, secured, segregated and transported in a way that packaging remains fit for purpose, and risks to people/property/environment are minimised.

c) A *PCB licence* is required for the transport or storage of *scheduled PCBs* > 1 tonne. *Employees* and Ausgrid contractors can transport and store in accordance with Ausgrid's PCB licence including:

- transport between Ausgrid premises by *workers*
- promptly arrange disposal
- store in a permanent bunded area which is covered, secure and separated > 12m from other storage areas containing flammable or combustible liquids (refer to section 2.3.5).

d) When transporting ≥ 250 kg(L) of *scheduled PCBs*, comply with the *ADG Code* requirements are summarised in Table 3.2-1.

Figure 3.2-2: Summary of requirements for transporting scheduled PCBs

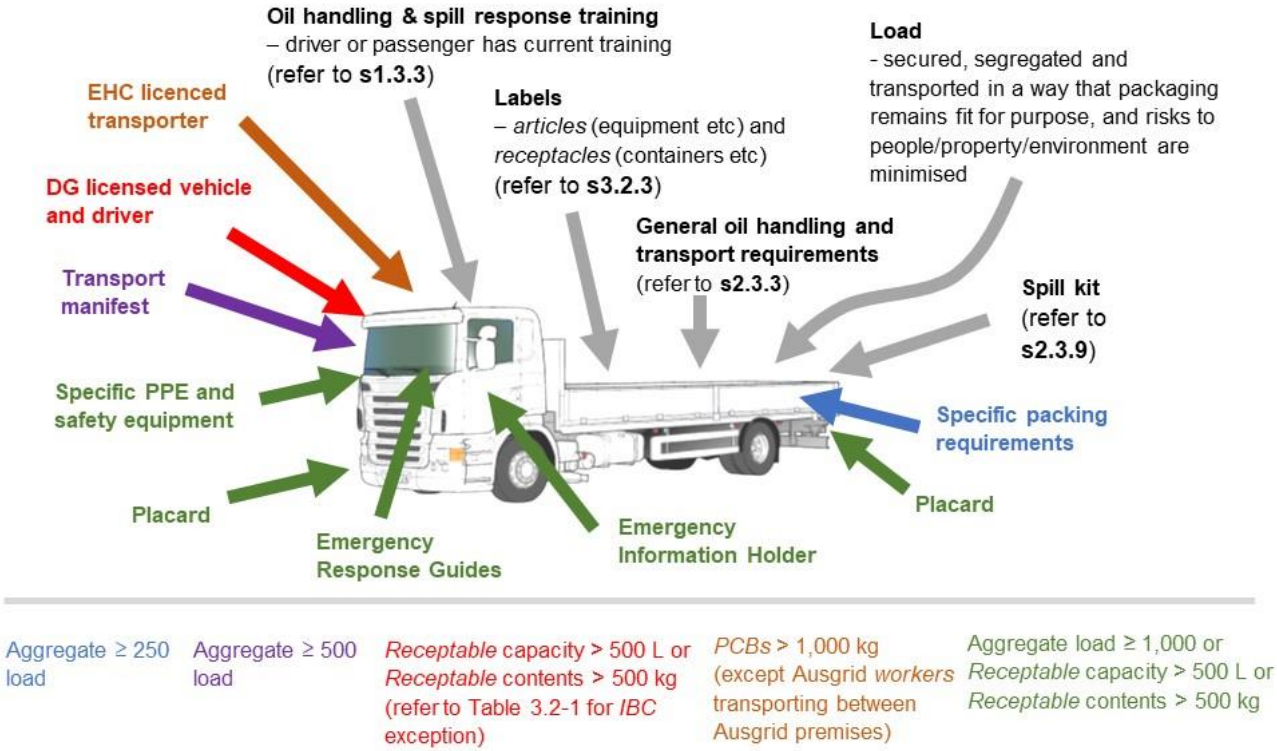


Table 3.2-1: DG requirements when transporting ≥ 250kg(L) of Scheduled PCBs

Thresholds	DG Requirements
Check each threshold as multiple thresholds could apply.	
Aggregate quantity^ ≥ 250	Comply with Packing Instruction (P906). For example, transformers need to be placed in leakproof metal tray with 800mm sides containing sufficient absorbent material to absorb at least 110% the volume of any free liquid.
Aggregate quantity^ ≥ 500	• Carry transport documentation – Manifest (employees can use EF 106 Dangerous goods transport documentation (PLUS ES)) • Have appropriate instruction and training
Aggregate quantity^ ≥ 1,000 **OR** Individual *receptable* has: - capacity >500L **OR** - contains >500kg	• Placard vehicle (Class 9 diamond 250mm x 250mm front and rear) • Carry emergency information – Emergency Response guides 00 & 171 • Carry Emergency Information Holder in the drivers' door (with 'emergency information' in red 10mm text on white background) • Carry specific PPE and Safety equipment: – Eye wash (250ml) – PPE (chemical resistant gloves, eye protection) – Torch – 30B fire extinguisher fixed in the vehicle near driver's door – 3 double-sided reflectors (break down triangles). • No driving through tunnels
Individual *receptable* has: - capacity >500L **OR** - contains >500kg	• Vehicle to be *DG* licensed, tested and inspected* • Driver to be *DG* licensed* • Placard vehicle (Emergency Information Panel) • Carry specific PPE and Safety equipment • Have telephone advisory service available throughout transport

^ Aggregate quantity = [Contents of all *receptacles* (L liquids, kg solids)] + [Mass of all *articles* (kg)]

* Except *DGs* transported in *IBCs* (<3,000L total capacity) not filled or emptied while on the vehicle

3.2.5 Disposal

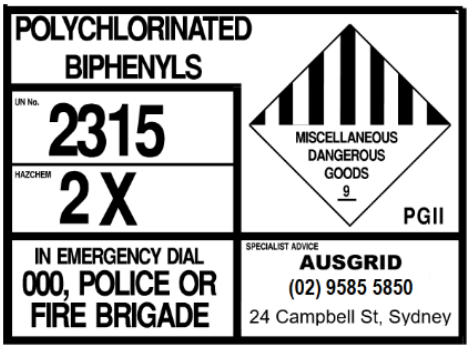
a) Dispose of *PCB waste* to a facility licensed to accept the waste.

b) Comply with waste tracking requirements (refer to section 5.3).

c) When scrapping *PCB* contaminated oil or equipment containing *PCBs*, Ausgrid *employees* can contact Supply Chain Operations (request forms are available on The Wire).

d) For disposal of other *PCB* wastes, refer to section 5.3.

PCB waste labelled ready for collection



Scheduled PCB placard

3.3 PESTICIDES

Background

Ausgrid uses *pesticides* for controlling weeds, pests and vegetation around substations, depots, offices, power lines and poles.

Incorrect handling of *pesticides* can harm human health and the environment including animals, *waterways*, non-target species and groundwater.

Harm to non-target species by *pesticides* must be prevented. *Pesticides* must be used, labelled, stored, transported and disposed in accordance with legal requirements. Notification, record keeping and specific training is required for certain applications.

When to contact Environmental Services
02 9394 6659

a) Incidents involving *pesticides*.

b) Works cannot meet the requirements in this section of the *Handbook*.

A specialist assessment may be required.

Additional *WHS* requirements may apply. Refer to the *SWMS*, *SDS* and advice from your safety advisor. *Employees* can use ChemAlert.

Definitions

APVMA is the Australian Pesticides and Veterinary Medicines Authority**.**

Domestic use criteria applies if ALL the following are met when using *pesticides*:

a) Applied by hand or hand-held applicator.

b) Available to the general public at retail outlets.

c) Ordinarily used for domestic purposes.

d) Not applied in a public place.

e) Outdoor use does not exceed:

- 20L or 20kg of ready-to-use product
- 5L or 5kg of concentrate.

f) Indoor use does not exceed:

- 5L or 5kg of ready-to-use product
- 1L or 1kg of concentrate.

Ecologically sensitive areas refer to section 6.1.

HSMS means Health & Safety Management System.

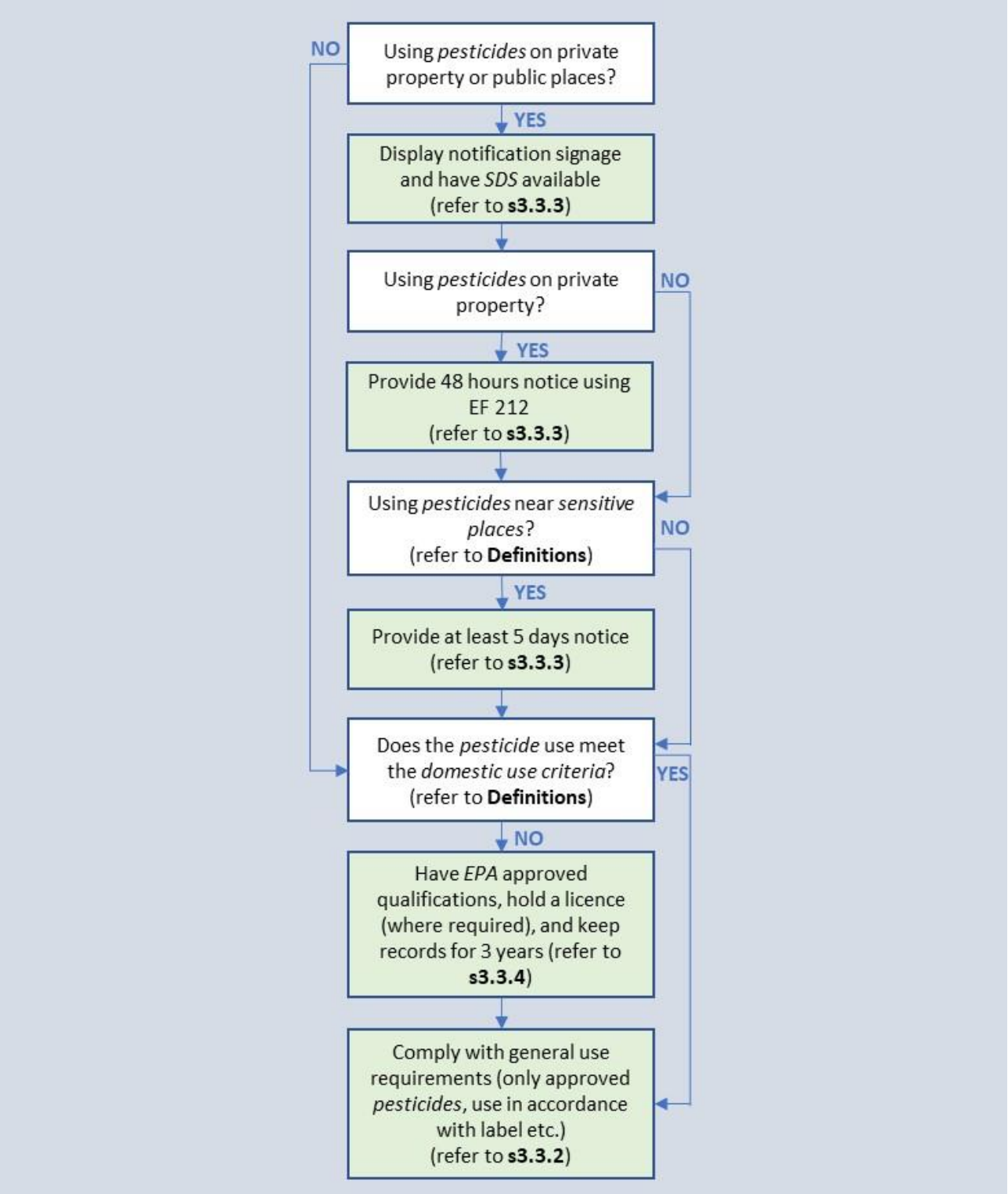
Pesticides include herbicides, termiticides, insecticides, biocides, fungicides and baits.

Restricted pesticides are determined by *APVMA* to be inherently hazardous and are listed in Schedule 4 of the Agricultural and Veterinary Chemicals Code Regulations.

Sensitive places include:

- schools, pre-schools, kindergartens and child care centres
- hospitals, community health centres, and nursing homes.

Figure 3.3-1: Process for managing pesticides



3.3.1 Pre-work checks

a) Check the requirements of any applicable *planning approval* or *other approvals* (refer to section 1.5).

b) Check the requirements of any applicable Pesticide Control Orders (for *restricted pesticides*).

c) Use Figure 3.3-1 to determine *pesticide* requirements.

d) Check the *pesticide* label requirements.

e) Check for drainage lines, grates, drains, inlets, *sensitive places*, *ecologically sensitive areas* (refer to WebGIS EL) and *waterways*.

f) Check if a *pesticide* use licence is required. Exemptions apply for:

- pesticide use which meets the domestic use criteria
- grounds maintenance, landscaping and arboriculture
- *workers* controlling pests/decay on electricity power poles (refer to NS145 Pole Inspection and Treatment and the Exemption Order).

g) For *agricultural land*, check with the landowner if the property has agriculture accreditation (such as organic, biodynamic). Use of *pesticides* on accredited properties could impact their accreditation and income.

h) Have current *pesticide* training if applying *pesticides* that meet the commercial use criteria (refer to Table 1.3-1 and section 3.3.4).

3.3.2 General use

a) Use only *pesticides* with an approved Ausgrid *HSMS* risk assessment.

b) Handle, store, mix, use and dispose of *pesticides* in accordance with the label or off-label permit issued by the *APVMA*.

c) Use the right equipment and *pesticide* for the job.

d) Use well maintained equipment that is in good working order.

e) Mix only the quantity needed for the job.

Mix only the quantity of pesticides needed for the job

f) Prevent spray from drifting outside the target area.

g) Do not spray during periods of rain or high wind.

h) Provide an adequate buffer area between the application and dwellings, *waterways*, animals or *ecologically sensitive areas*.

i) Store *pesticides* only in a container with an Agricultural and Veterinary Chemicals Code approved label.

j) Additional controls apply for storage, handling and transport of liquid *pesticides* (refer to section 2.3).

k) Store in areas that are bunded, secure, cool and well ventilated.

l) Transport only enough *pesticide* as is reasonably required for the job.

m) Carry an appropriate spill kit and response procedures in all vehicles used to transport *pesticides*.

3.3.3 Notifications – public and private property

a) Display approved notification signage when using *pesticides* in public places in accordance with Ausgrid's Pesticide Notification Plan (refer to Figure 3.3-2).

b) Have the *SDS* available during use for *workers* or members of the public.

c) Notify owners and occupiers of private property at least 48 hours prior to using *pesticides* on their property. Ausgrid *employees* can use the Notice of pesticide application form (EF 212).

Notification signage is required when pesticides are used in public places.

d) Notify owners and occupiers of *sensitive places* at least 5 *clear business days* prior to using *pesticides* on or within 20m of their premises.

e) Allow additional notification time for *agricultural land*. Use of *pesticides* on agricultural properties could impact their accreditation and income.

f) Comply with all reasonable requests from owners and occupiers.

g) When engaging the community consider the principles in section 1.4.3.

3.3.4 Commercial use – training and records

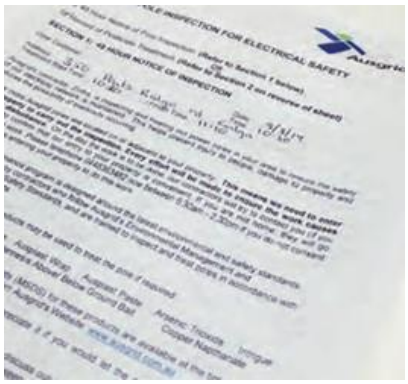
Commercial use includes all *pesticide* use which does not meet the *domestic use criteria*. To undertake commercial use of *pesticides*, the user must:

a) Have current *EPA* approved qualifications.

b) Where required, hold a pest management technician licence (refer to 3.3.1 as exemptions apply).

c) Keep records in accordance with *EPA* requirements, such as making records within 48 hours of application and keeping records for a period of 3 years. *Employees* can use the EF 213.

d) Provide a copy of the completed application record to the owner/occupier if requested.



Retain records of commercial pesticide use for 3 years

Figure 3.3-2: Notification arrangements for pesticide applications in public places (extract from Ausgrid's Pesticide Use Notification Plan)

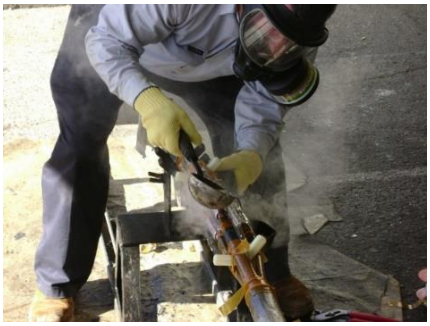
Prescribed public place	Type of pesticide use							
	Timber pole treatment				Vegetation control	Equipment	Insects	Rodents
	Hand application of solid or paste fungicide inside pole and around pole base, beneath the soil	Hand painted application of liquid fungicide to treat damaged areas of CCA* treated poles	Hand application of liquid residual termiticide to soil immediately around pole base	Hand application of solid bait termiticide inside protective cover mounted on pole	Hand application of dust termiticide inside pole or inside termite gallery on the pole	Spot or spray application by hand of liquid herbicide to vegetation, including painting stumps of cut vegetation	Hand application of aerosol insecticide spray to pole top equipment and substation cabinets	Hand application of aerosol insecticide spray to floors, walls, cupboards, etc	Hand application of solid rodenticide baits
Public parks and gardens	⊘	⊘	■	⊘	■	■	⊘	N/A	N/A
Playgrounds	⊘	⊘	■	⊘	■	■	⊘	N/A	N/A
Picnic areas	⊘	⊘	■	⊘	■	■	⊘	N/A	N/A
Sporting fields, ovals and golf courses	⊘	⊘	■	⊘	■	■	⊘	N/A	N/A
Road verges, reserves, footpaths, laneways and pathways	⊘	⊘	⊘	⊘	⊘	■	⊘	N/A	N/A
Easements accessible to the public (including National Parks etc, State forests or Crown lands)	⊘	⊘	⊘	⊘	⊘	■	⊘	N/A	N/A
Schools and TAFEs (excluding building interiors)	⊘	⊘	■	⊘	■	■	⊘	N/A	N/A
Interiors of certain Ausgrid buildings and within depot grounds	⊘	⊘	⊘	⊘	⊘	⊘	⊘	⊘	⊘
Within or adjacent to sensitive places	⊘	⊘	■ and ★	⊘	■	■ and ★	⊘	N/A	N/A

■ - Notice by display of signage during the pesticide application. ⊘ - No specific notice will be given N/A – Not applicable.
★ - When applying liquid pesticides outdoors, sensitive places must be notified 5 days prior to application as outlined in Section 3.1.
* Copper Chrome Arsenic (a common wood preservative).

3.4 LEAD

Background

Lead has been widely used in the Ausgrid work environment including covering conductors (to protect them from corrosion) and in paint (to accelerate drying, increase durability, maintain a fresh appearance, and resist moisture that causes corrosion). It can also be found in solder, lead acid batteries, building flashing and accumulated dust.



Lead wiping a cable joint

Lead has the potential to cause detrimental health effects and have a negative impact on the environment if not managed appropriately.

Lead must be assessed, classified, stored, handled, transported and disposed in accordance with legal requirements.

When to contact Hazmat 0417 295 157

Contact Ausgrid's Senior Project Officer – Hazmat (refer to section 10) if:

a) A new lead hazard has been identified.

b) Information in Ausgrid's Asbestos Register (contains lead sample results) does not reflect current observed conditions.

c) Works cannot meet the requirements in HS014-P0100 - Workplace Hazardous Materials (for *employees* (PLUS ES)) or relevant *SWMS*.

d) Works cannot meet the requirements in this section of the *Handbook*.

Definitions

LCD is lead containing dust.

3.4.1 Pre-work checks

Before working on any Ausgrid network or property asset (such as substations, pits, depots):

a) Check the requirements of any applicable *planning approval* or *other approvals* (refer to section 1.5).

b) Check for the presence of known lead and suspected lead (refer to Ausgrid's Asbestos Register or SAP notification for the site).

c) Undertake a visual assessment of the worksite, buildings and equipment for suspected lead hazards (such as paint or *LCD*).

d) If lead sampling or cleaning is required, contact Senior Project Officer – Hazmat (refer to section 10).

e) If there are known or suspected lead hazards, determine who can remove the material, the level of *PPE* required, and the appropriate procedures to use (*employees* can refer to HS014-P0100 (PLUS ES)) and relevant *SWMS*).

3.4.2 Works that might disturb lead

Requirements for working with lead are detailed in WHS Regulation and include:

a) Arrange cleaning of the proposed work area prior to works commencing, (where works might disturb surface dust or paint). Refer to section 3.4.1.

b) Works that disturb lead (including *LCD*) must be undertaken in accordance with HS014-P0100 (for *employees*) or relevant *SWMS*.

c) Wear appropriate *PPE*. Minimum requirements typically include:

- disposable half face respirator with a P2 particulate filter or other respirator as determined by a successful 'fit test'
- disposable or wipeable gloves
- Type 5, Category 3 coveralls
- safety gumboots or lace-less safety boots (non-suede).

d) Practice good personal hygiene:

- No eating, drinking, chewing gum, smoking or any practice that involves the potential for hand to mouth transfer.
- Wash hands and face and scrub nails before eating, drinking or smoking.
- Avoid biting nails.

3.4.3 Lead removal works

a) Prior to works commencing, notify occupants of the site and residents in the immediate vicinity that might be affected by the lead removal work.

b) When engaging with the community consider the principles in section 1.4.3.

c) Removal of lead (including *LCD*) must be undertaken in accordance with HS014-P0100 (for *employees* (PLUS ES)) or relevant *SWMS*.

d) Where works can be undertaken without a *LAR* and *LAA*:

- Use a Class H vacuum cleaner fitted with a HEPA (high-efficiency particulate absorbing) filter and/or wet wipes. Domestic vacuums are unsuitable.
- Do not use compressed air/gas or dry sweeping cleaning methods.

e) At the completion of works, the following documents must be submitted to hazmat@ausgrid.com.au.

- HRR - Hazmat Remediate & Removal Form for all remediation and removal work
- air monitoring results and clearance certificates (for licensed work)
- tipping dockets (for waste taken to landfill).

3.4.4 Transport and disposal

a) When scrapping equipment containing lead, Ausgrid *employees* can contact Supply Chain Operations (request forms are available on The Wire).

b) Seal bags of lead waste during transport.

c) Dispose of the waste to a facility licensed to accept the waste.

d) Comply with *EPA* waste tracking and licensing requirements (refer to section 5.3.2).

4 EMISSIONS

4.1 AIR

Background

Air pollution sources can include particulates (such as dust and smoke) and odours, fumes and gases.

Air pollution can result from excavating, stockpiling, grit blasting, demolition, sanding, grinding, welding, storing and transporting waste, using vehicles and equipment, handling sulfur hexafluoride (SF_6), and using chemicals such as paints, solvents, resins and adhesives.

Air pollution can lead to complaints and harm human health, amenity and the environment, and contributes to global problems such as climate change.

Vehicles and equipment must be operated and maintained, and activities must be carried out, to prevent air pollution in accordance with legal requirements.

When to contact Environmental Services
02 9394 6659

a) Incidents involving air pollution.

b) *SF_6* leaks > 5kg.

c) Disturbing areas > 250m^2 at any one time – a specialist assessment and/or *ESCP* may be required (refer to section 2.1).

d) Works cannot meet the requirements in this section of the *Handbook*.

Definitions

Sensitive places refer to section 3.3**.**

SF_6 is sulfur hexafluoride.

4.1.1 Pre-work checks

a) Check the requirements of any applicable *planning approval* or *other approvals* (refer to section 1.5).

b) Check the requirements of any applicable *ESCP* (for high risk dust generation activities such as disturbing > 250m^2).

c) Check for exposed surfaces and *sensitive places*.

d) Check vehicles and equipment are serviced regularly and operate efficiently.

4.1.2 Dust prevention

Implement controls to prevent dust leaving the worksite:

a) Where required, use water sprays to dampen disturbed areas and stockpiles (while preventing water run-off).

b) Stabilise disturbed areas if a break in works of > 21 days will occur (such as turf, geotextile, mulch, soil binders or fast-growing seed).

Prevent dust from leaving the worksite

c) Minimise ground disturbance (refer to section 2.1).

d) Minimise excavation on windy days.

e) Where required, install dust barriers on fences and gates.

f) Where required, create temporary wind breaks.

g) Cover loads on trucks (such as using 'enviro-tarps').

h) Keep roads clean to minimise dust.

Cover loads to prevent pollution

i) Minimise traffic movements and vehicle speeds on disturbed areas and unsealed roads.

j) Use dust collection devices on construction equipment, where available.

k) Undertake consultation with those potentially impacted (refer to section 1.5.4).

4.1.3 SF_6 gas

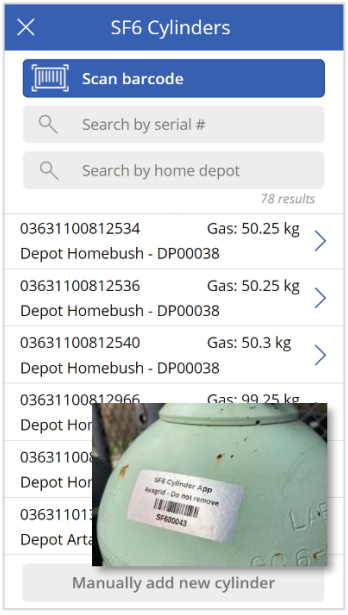
SF_6 is a greenhouse gas with 23,500 times the global warming potential of carbon dioxide. Pure SF_6 is inert, colourless, odourless and non-toxic, but under arcing conditions could decompose to produce toxic compounds.

a) Handle *SF_6* in accordance with approved work practices.

b) Weigh the cylinder before and after every use and record using the SF6 Cylinders App. Do not use a cylinder before it has been weighed and registered on the app.

c) Record *SF_6* top-ups and equipment movements in SAP (*Employees* can refer to TSS02 – Corrective SF_6 equipment top-ups procedure).

d) Promptly arrange for recycling / disposal of surplus *SF_6* cylinders (via Homebush Workshop) and equipment (*Employees* can refer to The Wire). If disposing via other processes such as returning faulty equipment to a supplier, contact Environmental Services on 02 9394 6659.



SF_6 Cylinders App and cylinder barcode

4.1.4 Other emissions

a) If a vehicle emits smoke for a continuous period of > 10 seconds, return it to be serviced.

b) Position vehicles and equipment such that emissions will least affect receivers, where practicable.

c) Avoid leaving vehicles or equipment idling when not required.

d) Manage oils, fuels and other chemicals in accordance with section 2.3.

e) Manage wastes in accordance with section 5.3.

4.2 CONSTRUCTION NOISE

Background

Construction noise can consist of both airborne and ground-borne noise. The impacts are dependent on the type of plant and equipment, extent and nature of the works and proximity to residences and other sensitive land uses.

Noise emissions can lead to complaints, harm human health and reduce amenity. Proper management and consultation minimises impacts on the community and can help avoid costly worksite shut downs and delays.

Plant and equipment must be operated and maintained, and activities carried out to minimise noise pollution in accordance with legal requirements. Restrictions and notifications apply for certain hours of work and for specific plant/equipment.

When to contact Environmental Services
02 9394 6659

a) Incidents involving the *EPA*, local council or other authorities.

b) Impacting a receiver for > 3 consecutive weeks.

c) Complaints about asset noise (transformer, CLC (consumer load control) etc).

d) Works cannot meet the requirements in this section of the *Handbook*.

A specialist assessment, community engagement plan and/or a noise management plan (*NMP*) may be required. *Employees* can use EF 553 Noise Management Plan (PLUS ES) for works if impacting a receiver for < 3 weeks.

Definitions

Clear business day is a day other than the weekend or a public holiday and does not include the notification date or the date of works commencing.

High impact activities include using beeper style reversing alarms, saw-cutting, vibratory rolling, grinding, rock breaking, jack hammering, asphalt milling or profiling, underboring/directional drilling and impact piling.

NMP means a site-specific noise management plan.

Noise impacted represents the level above which there could be some community reaction to noise. For *standard operating hours* this is Rated Background Level + 10 dB(A) with a strong community reaction to noise > 75 dB(A). For *out of hours work* this is Rating Background Level + 5 dB(A).

Out of hours work are activities undertaken outside of *standard operating hours*.

Feasible and reasonable involves assessing the overall noise benefit of the identified work practices and controls that can be implemented for an activity against the overall adverse social, economic and environmental effects, including the cost of mitigation.

Sensitive receivers include residences, education facilities, hospitals, places of worship, recreation areas or other receivers who could be highly impacted by the works. Commercial premises (such as accommodation or restaurants) may, at certain times, be considered *sensitive receivers*.

Standard operating hours (unless local council policy states otherwise) are:

- **Monday to Friday** - 7am to 6pm
- **Saturday** - 8am to 1pm
- **Sunday & public holidays** - no work.

TfNSW is Transport for NSW.

4.2.1 Pre-work checks

a) Check the requirements of any applicable *planning approval* or *other approvals* (refer to section 1.5).

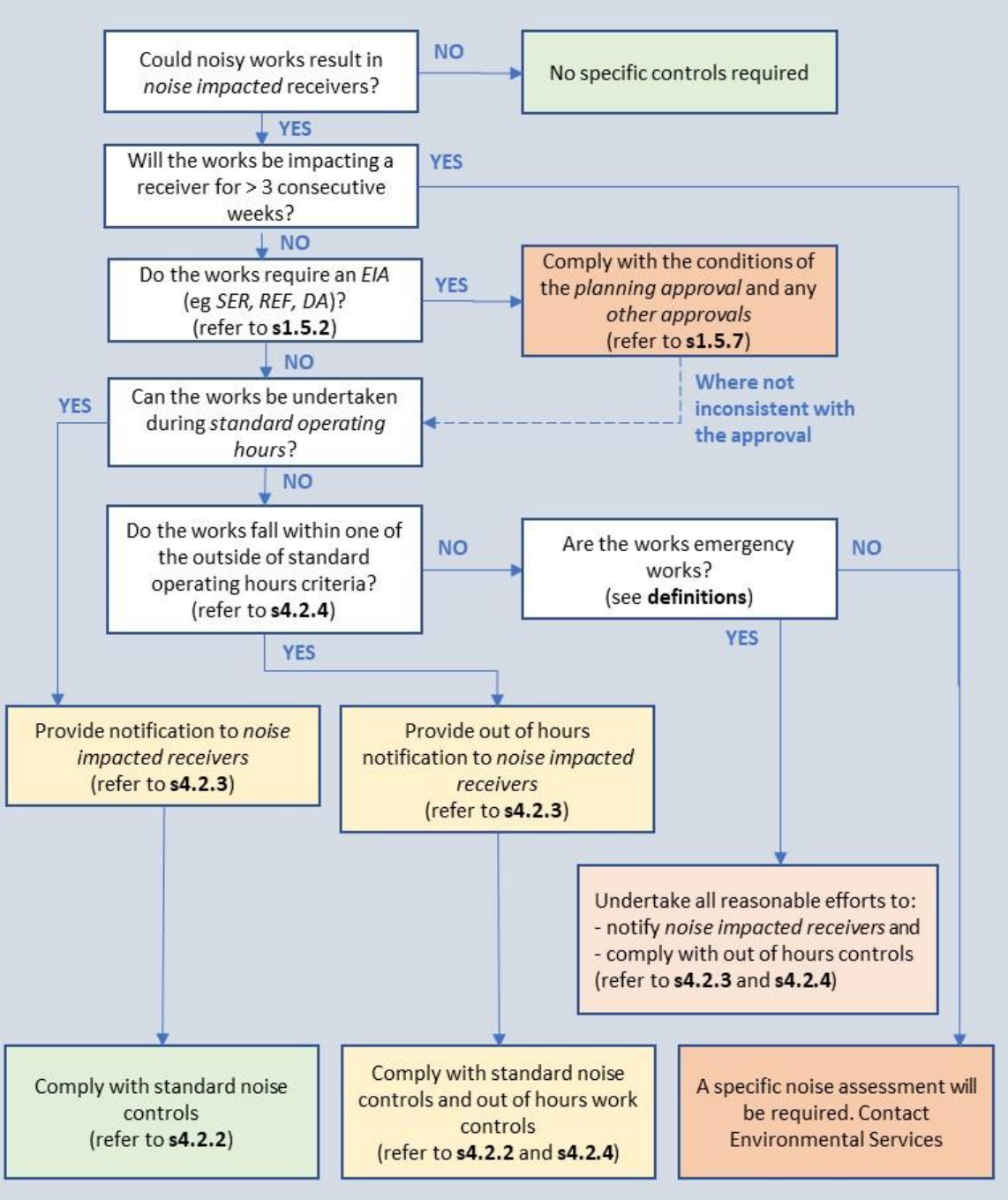
b) Check the requirements of any applicable *NMP*.

c) Check that the required notifications have been provided (refer to section 1.5.4 and 4.2.3).

d) Identify *sensitive receivers*.

e) Use Figure 4.2-1 to determine construction noise requirements.

Figure 4.2-1: Process for managing construction noise



4.2.2 General requirements

When causing a receiver to be *noise impacted*:

a) Keep noisy works to *standard operating hours* unless the works comply with section 4.2.4.

b) Operate and maintain plant and equipment in a proper and efficient manner (service and operate in accordance with the manufacturer's specifications).

c) Implement all *feasible and reasonable* measures to minimise construction noise. Considerations include:

Scheduling

- avoid noisy works during sensitive time periods (such as school class/exam times, restaurant meal times, religious services, childcare centre rest periods)
- provide respite periods for *sensitive receivers* subject to *high impact activities*. Examples include:
  - 1-hour respite after 3 consecutive hours
  - 1-day respite after 3 consecutive days.

Equipment

- use low noise plant and equipment (such as excavators with rubber tyres, electric engines instead of internal combustion, vibratory piling instead of impact, broadband reversing alarm instead of tonal)
- choose lower noise construction techniques (such as poured concrete piles instead of sheet piles).

Awareness

- avoid dropping materials from heights
- avoid dragging equipment and materials (such as road plates)
- line metal trays, tipper bodies or bins
- undertake loading and unloading operations away from *sensitive receivers*
- shut down or throttle down machinery when not in operation
- be considerate on worksites (for example, avoid shouting, radios, inappropriate vehicle use).

Site Layout

- arrange the worksite to take advantage of natural barriers (like hills, trees) and structures (such as fences, work trucks, stockpiles) to break the line of sight between working equipment and receivers. Consider reflective noise of the barriers and structures
- position work compounds and access points away from *sensitive receivers*
- site the noisiest plant and equipment furthest away from the most *sensitive receivers*
- minimise simultaneous operation of multiple items of noisy plant/ equipment in close proximity to *sensitive receivers*

- orientate plant and equipment so that noise is directed away from *sensitive receivers*
- install barriers for *high impact activities* so noise is absorbed or directed away from *sensitive receivers*. Barriers work best when close to the source or receiver (consider reflective properties of the screen)
- install road plates to the TfNSW specification (such as recessing, inspecting and assessing noise impact, plate thickness, bearing support, additional or modified fixings to reduce noise)

Portable noise screen used to mitigate noise

- arrange the worksite layout to minimise movements that would activate audible reversing and movement alarms (such as drive through sites).

4.2.3 Consultation

a) Provide written notification to *noise impacted* receivers between 4 and 14 *clear business days* prior to starting works unless it is *emergency works* or it is discussed with the impacted receivers face-to-face and records kept (refer to section 4.2.5).

b) Provide additional notification information for works outside *standard operating hours* (refer to section 4.2.4).

c) Give due consideration to any feedback received.

Notification is required for impacted receivers

d) Provide signage at the worksite detailing who is undertaking the works and a contact number.

e) Provide regular updates to impacted receivers. As a minimum, monthly updates are required for ongoing projects.

f) Notify impacted receivers when the program changes.

g) When engaging the community consider the principles in section 1.4.3.

4.2.4 Out of hours work

The requirements for *out of hours work* when impacting a receiver are:

a) Noisy works outside of *standard operating hours* can only be undertaken if the works are justified as necessary and meet one of the following criteria:
   1. *Emergency works* and *noise impacted* receivers have been notified as soon as reasonably practicable OR
   2. Complies with the conditions of any applicable *EIA* that demonstrates the need for *out of hours work* OR
   3. Delivery of oversized plant or structures that has special approval OR
   4. Maintenance and repair of essential public infrastructure that is unable to occur during *standard operating hours,* OR
   5. Works have majority support by the *noise impacted* community as demonstrated by community consultation.

b) Unless *emergency works*, provide *noise impacted* receivers with written notification between 4 and 14 *clear business days* prior to the works using an *out of hours work* notification letter (refer to section 4.2.5).

c) Unless *emergency works* or justified by unavoidable and exceptional circumstances and undertaken with targeted consultation, do not impact a receiver:
   - for more than 2 nights in any 7-day period
   - on Sunday after 6pm
   - on a Monday before 7am
   - on a public holiday
   - after 12am (midnight) if undertaking *high impact activities*.

d) Undertake all reasonable efforts to comply with the above controls for *emergency works*.

e) Provide reasonable respite following *out of hours work* for *sensitive receivers*.

f) Use broadband reversing alarms on vehicles and plant unless tonal alarms are justified by a safety risk assessment.

g) Schedule the noisiest works to start at the most *sensitive receivers* and progressively move away, where practicable.

h) Provide signage at the worksite detailing who is undertaking the works and a 24-hour contact number.

i) Advise (door knock or call) impacted receivers in advance if works are expected to continue past approved construction hours.

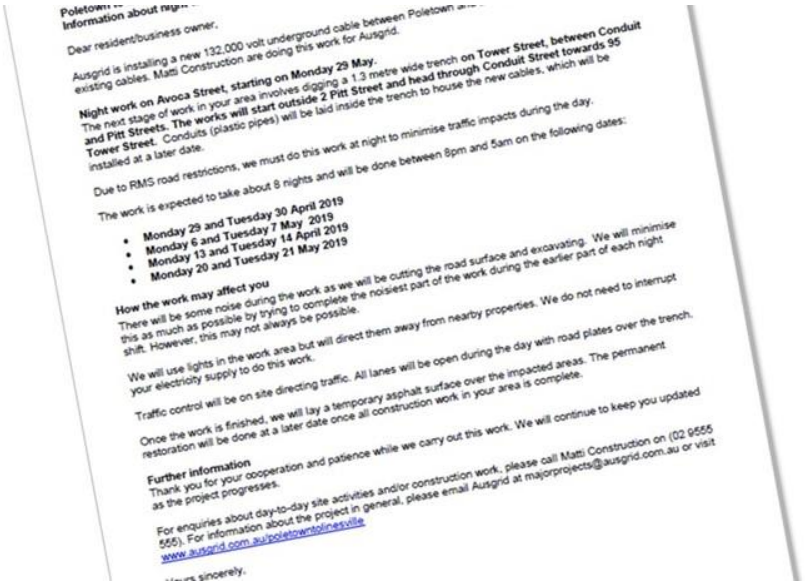
4.2.5 Contents of notification letters

Table 4.2-1 details the minimum information required in notification letters.

Template letters for *Employees* are available on The Wire.

Table 4.2-1: Minimum requirements for notification letters

Timing of work	Required information
Standard operating hours	a) Description of the works and why they are being undertaken. b) Details of the works and the activities that will be noisy. c) Work dates and expected duration and hours. d) Contact number. e) Contact details to facilitate understanding of the notification by community members with limited English proficiency (the Commonwealth's Translating and Interpreting Service, TIS National). f) A marked-up map or diagram clearly showing the location of the works (where beneficial).
Out of hours work	a) Information contained in the *standard operating hours* notification letter (above). b) The justification for undertaking *out of hours work*. c) Work dates, expected duration and hours during which noisy activities will be undertaken and the type of plant and equipment involved. d) Details of what is being done to minimise the impacts including any respite or curfew periods. e) How and when complaints can be lodged including a 24-hour contact number for someone involved in the project.



Dear resident/business owner,

Ausgrid is installing a new 132,000 volt underground cable between Poletown and Tolmie to replace existing cables. Matti Construction are doing this work for Ausgrid.

Night work on Avoca Street, starting on Monday 29 May.

The next stage of work in your area involves digging a 1.3 metre wide trench **on Tower Street, between Conduit and Pitt Streets. The works will start outside 2 Pitt Street and head through Conduit Street towards 95 Tower Street.** Conduits (plastic pipes) will be laid inside the trench to house the new cables, which will be installed at a later date.

Due to RMS road restrictions, we must do this work at night to minimise traffic impacts during the day.

The work is expected to take about 8 nights and will be done between 8pm and 5am on the following dates:

- **Monday 29 and Tuesday 30 April 2019**
- **Monday 6 and Tuesday 7 May 2019**
- **Monday 13 and Tuesday 14 April 2019**
- **Monday 20 and Tuesday 21 May 2019**

How the work may affect you

There will be some noise during the work as we will be cutting the road surface and excavating. We will minimise this as much as possible by trying to complete the noisiest part of the work during the earlier part of each night shift. However, this may not always be possible.

We will use lights in the work area but will direct them away from nearby properties. We do not need to interrupt your electricity supply to do this work.

Traffic control will be on site directing traffic. All lanes will be open during the day with road plates over the trench.

Once the work is finished, we will lay a temporary asphalt surface over the impacted areas. The permanent restoration will be done at a later date once all construction work in your area is complete.

Further information

Thank you for your cooperation and patience while we carry out this work. We will continue to keep you updated as the project progresses.

For enquiries about day-to-day site activities and/or construction work, please call Matti Construction on (02 9555 555). For information about the project in general, please email Ausgrid at majorprojects@ausgrid.com.au or visit www.ausgrid.com.au/poletowntolinesville

Yours sincerely,

Example of an out of hours work notification letter

4.3 ELECTRIC AND MAGNETIC FIELDS

Background

Electromagnetic energy (EME), also known as electromagnetic radiation (EMR), occurs naturally - with the earth, the sun, and the ionosphere all natural sources of EME in our everyday lives.

All forms of *EME* are collectively referred to as the electromagnetic spectrum.

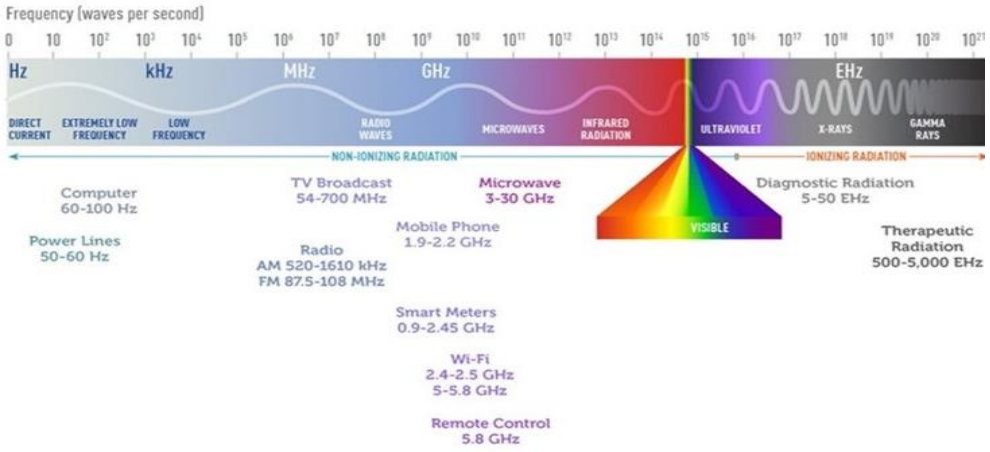
Electric and magnetic fields (EMF) are in the extremely low frequency part of the electromagnetic spectrum. Electric fields are present in the atmosphere and static magnetic fields are created by the earth's core. In contrast with natural *EMF,* which is static, power-frequency fields oscillate at a frequency of 50 Hertz (Hz).

EMF is also produced wherever electricity is in use, such as powerlines, electrical wiring, household appliances and other electrical equipment.

At 50Hz, the electric and magnetic components are independent of one another, drop off rapidly with distance and disappear when the source is removed. *EMF* should not be confused with *EMR* which travels through space, including after the source is turned off (refer to section 4.4).

50Hz magnetic fields can induce very weak voltages and currents in the body. If high enough, the first known effect is a faint flickering visual sensation. The levels that cause this are well above those that exist around Ausgrid's electricity network.

50Hz electric fields can charge isolated conductive surfaces. If high enough, these fields can result in spark discharges when touching either the isolated conductive surface or a grounded object. The sensation is similar to static discharges when crossing a nylon carpet for example.



Electromagnetic spectrum

When to contact Environmental Services
02 9394 6659

a) There is suspected medical implant interference.

b) You are pregnant or have a medical implant and you work in *high field work environments* (near high current carrying conductors / equipment).

c) You or a member of the public have enquiries about possible health effects associated with *EMF*.

In the case of pregnant *workers* and *workers* with medical implants in *high field work environments*, a workplace assessment may be required in consultation with Ausgrid, you and your doctor.

Definitions

ARPANSA is the Australian Radiation Protection and Nuclear Safety Agency.

EME is electromagnetic energy.

EMF is electric and magnetic fields alternating at 50Hz. Electric fields are measured in volts/metre (V/m). Magnetic fields are expressed in microtesla (µT) or milligauss (mG).

EMR is electromagnetic radiation.

High field work environments are areas where *EMF* could exceed the public reference levels (typically high current carrying equipment and conductors). Examples of *high field work environments* are shown in Figure 4.3-1.

ICNIRP is International Commission on Non-Ionising Radiation Protection.

WHO is World Health Organization.

4.3.1 Pre-work checks

a) Check the requirements of any required *planning approval* or *other approvals* (refer to section 1.5).

b) Check for signage indicating the presence of high *EMF*.

c) Check for *high field work environments* (refer to Figure 4.3-1) and note susceptibility of instruments to interference (such as defibrillators).

If you are fitted with an active medical implant (such as a pacemaker) and work in *high field work environments:*

d) Discuss your work and working environment with your doctor.

e) Provide Ausgrid with information describing the circumstances in which the proper functioning of the medical implant could be at risk.

If you are pregnant and work in *high field work environments:*

f) Discuss your working arrangements with Ausgrid.

Signage is sometimes used to indicate the presence of very high magnetic fields

4.3.2 How are you protected against EMF?

ARPANSA recommends compliance with the ICNIRP guidelines.

These guidelines protect against known adverse health effects and include a significant safety margin. Ausgrid complies with these guidelines for both the public (200µT and 5kV/m) and our *workers* (1,000µT and 10kV/m).

More information is available in this *ARPANSA* fact sheet and *WHO* fact sheet.

4.3.3 Are there health effects below the guideline limits?

There are no known adverse health effects at levels below the limits in the ICNIRP guidelines. *ARPANSA* advise:

"*The scientific evidence does not establish that exposure to the electric and magnetic fields found around the home, the office or near powerlines causes health effects."*

This is consistent with the advice of other authoritative health agencies such as the *WHO*.

Figure 4.3-1: Examples of high field environments

Transformer tails

Cable terminations and pits

Live line work

Low voltage busbars

Cable tunnels

Air cored reactors

4.4 RADIOFREQUENCY FIELDS

Background

Radiofrequency (RF) EME is the transfer of energy by radio waves.

Radio communications systems use the RF part of the electromagnetic spectrum between 3 kilohertz (kHz) and 300 gigahertz (GHz). These include television, AM and FM radio broadcasting, mobile phones and their base stations, paging services, cordless phones, baby monitors, and emergency and rural communication systems.

Example of an RF antenna

Heating of body tissues is possible if exposed to *RF EME* above recommended exposure limits. Shocks are also possible if touching an energised *RF* transmitter.

When to contact Environmental Services
02 9394 6659

a) There is suspected medical implant interference.

b) You have a medical implant and you work in close proximity to energised mobile phone antennas/base stations.

c) You or a member of the public have enquiries about possible health effects of *RF EME* associated with Ausgrid assets.

In the case of *workers* with medical implants working in close proximity to energised mobile phone antennas, a workplace assessment may be required in consultation with you, Ausgrid and your doctor.

Definitions

RF is radiofrequency *EME* or *EMR* that continues to travel away from the source even after the source is turned off.

RFNSA is Radio Frequency National Site Archive.

4.4.1 Pre-work checks

a) Check the requirements of any applicable *planning approval* or *other approvals* (refer to section 1.5).

b) Check for known *RF* transmitters near the work area (refer to WebGIS EL for the location of *RF* antennas on Ausgrid poles, or Radio Frequency National Site Archive (RFNSA) for all *RF* antennas).

c) Look for identifier plates located near the *RF* transmitter.

Example of identifier plate located near an RF transmitter

If you are fitted with an active medical implant (such as a pacemaker or hearing aid) and work in close proximity to energised mobile phone antennas:

d) Discuss your work and working environment with your doctor.

e) Provide Ausgrid with information describing the circumstances in which the proper functioning of the medical implant could be at risk.

4.4.2 General requirements

a) Where work might come within an antenna's general public exclusion zone comply with NS102 Working on or near poles with telecommunication transmitters which requires notification, de-energisation, testing, confirmation and isolation of mobile phone transmitter antennas.

Testing the antenna

The RF EME meter is calibrated to the general public limit

4.4.3 How are you protected from RF EME?

ARPANSA's recommended maximum exposure limits for *EME* in the 3kHz to 300GHz range depend on whether the exposure is:

- occupational (for persons classified as 'RF workers')
- non-occupational (for the general public).

Workers complying with NS102 are not considered 'RF workers' and so the general public limits apply. The basic restrictions for the general public have included a safety margin of 50-times the level of the first known adverse health effect (nominally a 1°C rise in core body temperature).

More information is available in this *ARPANSA* fact sheet and Australian Communications and Media Authority (ACMA) fact sheet.

4.4.4 Are there health effects below the guideline limits?

There are no known adverse health effects at levels below the limits in *ARPANSA's* guidelines.

In relation to effects below the guidelines, *ARPANSA* advise:

"Based on current research there are no established health effects that can be attributed to the low RF EME exposure from mobile phone base station antennas."

5 CONTAMINATION AND WASTE

5.1 CONTAMINATION

Background

Contaminated land contains substances (typically from commercial or industrial activity) that exceed levels considered suitable for the current land use.

Exposure to contaminated soil or water, such as when excavating, can pose a risk for *workers* and the public. Contamination can also harm the environment and impact infrastructure such as cables, conduits and footings.

When encountered, contaminated soil must be assessed, stored and managed or disposed in accordance with legal requirements.

When to contact Environmental Services
02 9394 6659

a) Disturbing known contaminated land and the works have not been assessed/approved.

b) Disturbing land with *indicators of contaminated land* and the works have not been assessed/approved.

c) Decommissioning substations on private property (other than a pole top substation) and the works have not been assessed/approved.

Working in contaminated areas may require special PPE

d) Decommissioning substations with *indicators of contaminated land.*

e) Works cannot meet the requirements in this section of the *Handbook*.

A specialist assessment, remedial action plan and/or site management plan may be required.

Additional *WHS* requirements may apply. Refer to the *SDS*, if known, and advice from your safety advisor. *Employees* can use ChemAlert.

Definitions

Indicators of contaminated land include:

- unusual odours (such as fuels, solvents, rotten egg gas)
- oil staining or oil sheen in groundwater
- underground storage tanks (UST)
- buried waste (such as *asbestos in soil*, construction waste, containers)
- imported fill (such as ash, coke, slag, coal tar, asbestos)
- unusually coloured material (such as green clay).

Unusually coloured water is an indicator of contamination

Areas more likely to be contaminated include substations, 132kV transmission cable trenches (installed before 1980), fuel or chemical storage areas (including fire-fighting foam), where oil filled equipment has been used/stored, petrol stations, dry cleaners, workshops, airports, or industrial areas.

5.1.1 Pre-work checks

a) Check the requirements of any applicable *planning approval* or *other approvals* (refer to section 1.5). If *a planning approval* is not required, and the works involve excavation, then check for known contaminated land (refer to WebGIS EL).

b) Check the requirements of any applicable site management plan.

c) Check for *indicators of contaminated land*.

5.1.2 Encountering potential contamination

a) Stop work immediately and restrict access.

b) Notify the supervisor, Environmental Services on 02 9394 6659 and your safety advisor.

c) Use appropriate *PPE* and good hygiene practices.

d) Isolate suspected contaminated spoil (such as in a lined skip, Hazibag, cover or contain in builders' plastic).

e) Assess and classify spoil to determine handling, transport, tracking, licensing and disposal requirements (refer to section 5.3).

Unknown material seeping into trench will need to be assessed

Environmental Services will advise if specialist assessments, approvals, restrictions, management plans or notifications are required.

5.1.3 Minor remediation for oil leaks and spills

For minor leaks and spills on soil or grassed areas (for example, *PT* or kiosk leaks), *employees* can follow the process in EF 177 Remediation method (PLUS ES).

Typical requirements include:

- taking photos before, during and after remediation
- excavation of impacted material to a minimum depth of 300mm or 100mm below *indicators of contamination* (whichever is greater)
- placing excavated material in a lined skip bin or Hazibag
- undertaking waste classification and disposal (refer to section 5.3).

Contamination from a leaking pole transformer

Prior to scheduling the works, contact Environmental Services on 02 9394 6659, as validation samples may be required.

5.2 ACID SULFATE SOILS

Background

Acid sulfate soils (ASS) are naturally occurring soils and sediments that contain iron sulfides. They are generally found in low lying areas and near *waterways* such as rivers, estuaries, wetlands and mangroves.

When *ASS* is exposed to air, such as by excavating or lowering the water table, the iron sulfides can oxidise to form sulfuric acid. The acid can harm aquatic life, impact groundwater and corrode infrastructure.

ASS must be stored, handled, treated and disposed in accordance with legal requirements. Additional requirements apply for managing water from *ASS* areas. Specialist assessments, restrictions and management plans are required for certain activities or sites.

When to contact Environmental Services
02 9394 6659

a) Incidents involving *ASS*.

b) Excavating > 50m^3 of *ASS*.

c) Extracting or discharging water from *ASS* areas.

d) There are *indicators of ASS*.

e) Works cannot meet the requirements in this section of the *Handbook*.

A specialist assessment and/or *ASS* management plan (ASSMP) may be required.

Definitions

ASS is acid sulfate soils.

ASSMP is an acid sulfate soil management plan prepared in accordance with the NSW ASS Manual and ASS Assessment Guidelines**.**

Indicators of ASS include:

- the presence of mangroves, reeds, rushes or swamp vegetation
- sulfurous (rotten egg) smell
- marine or estuarine sediments
- unripe muds or sediments (soft, buttery, blue/grey or dark greenish grey)
- milky blue/green water
- shell fragments in the soil
- low lying, waterlogged, scalded or backswamp areas
- jarosite (a pale-yellow mineral deposit) or iron oxide (rusty) mottling
- extensive iron stains on drain surfaces or iron stained runoff and ochre deposits
- corrosion of concrete and/or steel structures
- surface or groundwater has a *pH* < 5.5 or is unusually clear (where turbid or dirty water would otherwise be expected).

Indicator of ASS - milky blue/green water

Indicator of ASS - unripe muds or sediments

5.2.1 Pre-work checks

a) Check the requirements of any applicable *planning approval* or *other approvals* (refer to section 1.5). If *a planning approval* is not required, and the works involve excavation, then check for the presence of *ASS* (refer to WebGIS EL).

b) Check the requirements of any applicable *ASSMP* (when impacting *ASS* and associated groundwater).

c) Check for *indicators of ASS*.

5.2.2 Managing ASS

a) If undertaking ground disturbance or water extraction works in *ASS* follow the process in Figure 5.2-1.

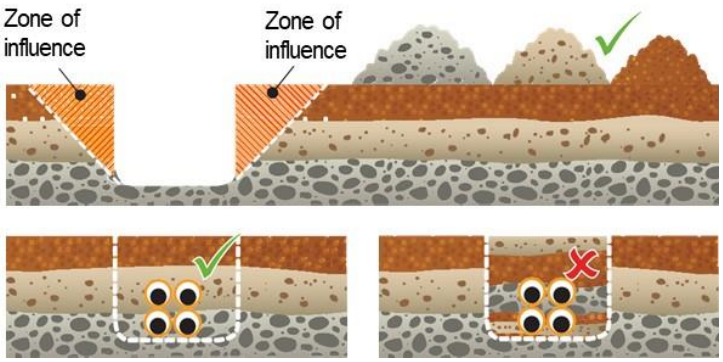
5.2.3 ASS management plans

a) All works impacting *ASS* will require an *ASSMP*.

b) For medium risk projects (refer to Figure 5.2-1), *employees* can use EWMS 167 Acid sulfate soils (PLUS ES). Key controls include:

- minimise ground disturbance
- minimise the excavation depth
- minimise the time that soil is exposed to air by staging works and storing soil in a lined and covered skip bin or wrapped in plastic (outside of the *zone of influence*)
- re-bury soil to the same depth from which it was excavated, where practicable. In some cases, treatment will be required
- arrange required testing and treatment prior to disposal.

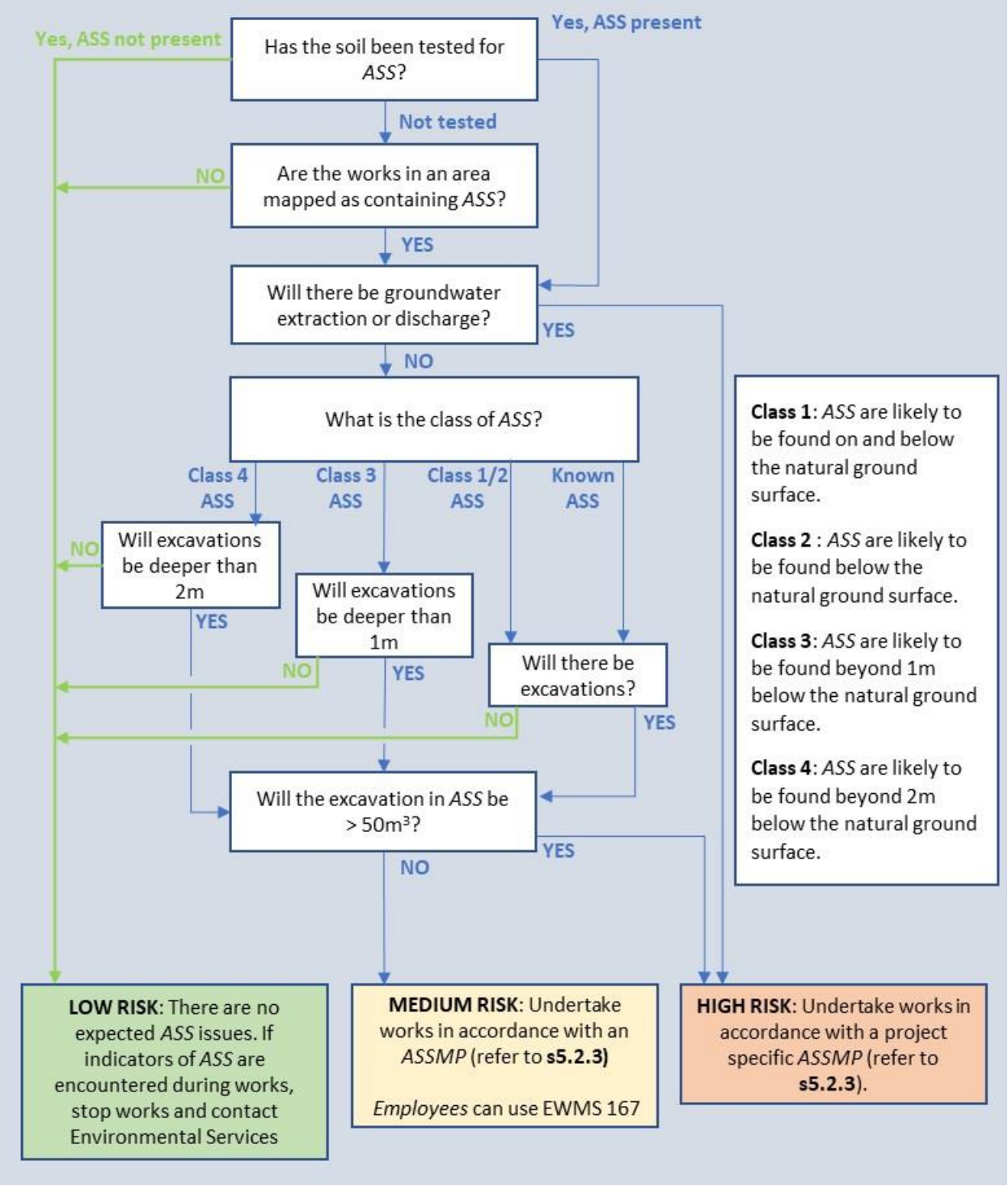
c) For high risk projects (refer to Figure 5.2-1), a site-specific *ASSMP* will be required in accordance with the NSW ASS Manual and ASS Assessment Guidelines.



When excavating in areas known to contain ASS, re-bury soil at the same depth from which it was excavated, where practicable

Correctly store ASS to minimise exposure to the air

Figure 5.2-1: Process for managing ASS



5.3 WASTE MANAGEMENT

Background

Waste is defined as any discarded, rejected, unwanted, surplus or abandoned substance or material – even if it can be processed, recycled, reused, recovered or is intended for sale.

Improper handling and disposal of waste can harm human health and the environment.

Waste must be classified, handled, stored, transported and disposed in accordance with legal requirements. Licensing and tracking are required for certain wastes.

Segregate waste for recycling

Good waste management minimises disposal to landfill, helps avoid environmental harm and can result in significant cost savings.

When to contact Environmental Services 02 9394 6659

a) Incidents involving waste.

b) Works cannot meet the requirements in this section of the *Handbook*.

Additional *WHS* requirements may apply. Refer to the *SWMS*, *SDS* and advice from your safety advisor. *Employees* can use ChemAlert.

Definitions

ENM is excavated natural material, which is naturally occurring rock and soil that has been excavated from the ground and contains at least 98% (by weight) natural materials, and meets chemical and other criteria detailed in section 5.4.

SCW is scheduled chemical waste, which is waste that contains > 2mg/kg of certain scheduled chemicals (examples include aldrin and dieldrin).

VENM is virgin excavated natural material, which is natural material that comes from undisturbed areas that are not contaminated and not *ASS* (refer to section 5.1 and 5.2). More information is available on the EPA website.

5.3.1 Pre-work checks

a) Check the requirements of any applicable *planning approval* or *other approvals* (refer to section 1.5).

b) Use Table 5.3-1 to determine the waste classification and any licensing or waste tracking requirements. *Employees* can refer to the Waste Database.

c) Understand the requirements of *PCB* and waste licences (for Ausgrid managers of waste facilities).

5.3.2 Waste classification, licensing and tracking

Waste must be classified in accordance with the NSW EPA Waste Classification guidelines. *Employees* can refer to the Waste Database.

Table 5.3-1 shows licensing and tracking requirements for common wastes. The requirements in the table are general and exceptions may apply. Some wastes have additional requirements, including asbestos, *SCW*, *DG*, *PCBs*, spoil from transmission trenches and radioactive waste.

Recycling opportunities available are shown with an asterisk (*) (refer to section 8.1).

Table 5.3-1: Waste classification

Waste class	Examples of pre-classified waste	Need to obtain a licence to:		Need to track waste?
		store waste?	transport waste?	
General solid waste	– asphalt* – building and demolition waste eg bricks*, concrete*, timber* – oil filters*, rags and oil absorbent materials (no free liquids and *PCB free*) – vegetation waste* – untreated timber*	Yes, if generated off-site and: – > 1,000 tonnes or 1,000m^3 (at any time) or – > 6,000 tonnes (per year)	No	No
Restricted solid waste	– Ausgrid has no pre-classified restricted solid waste	Yes, if storing > 5 tonnes of waste generated off-site	Yes, in loads of > 200kg	Yes (online tracking)
Hazardous waste	– aerosols* (empty spray cans) – certain classes of *DG** including pressurised gases, flammable solids, corrosive or toxic substances – lead-acid or nickel-cadmium batteries* – dry lead paint waste – street lamps*	Yes, if storing > 5 tonnes of waste generated off-site (60 tonnes for lead-acid batteries)	Yes, in loads of > 200kg	Yes (online tracking). An exception includes waste batteries that are transported within NSW for recycling / re-use, where transport complies with the waste tracking exemption.
Liquid waste	– liquid chemicals, solvents*, acids, alkalis, poisons, cleaning agents – grease* and lubricants* – liquid grease trap wastes* – oil* (for *PCB* > 2ppm, refer to section 2.3) – liquid paint – liquid *pesticides* – septic tank waste – accumulated water (refer to section 2.2) – mercury (*employees* can refer to HS014-P0100 (PLUS ES))	Yes, if storing > 5 tonnes of waste generated off-site (60 tonnes for *PCB free* oil, drilling mud or grease trap waste)	Yes, in loads of > 200kg	Yes (online tracking). An exception includes *PCB* free oil (*PCB* ≤ 2ppm) that is transported within NSW for recycling / re-use, where transport complies with the waste tracking exemption.
Special waste	– asbestos (refer to section 3.1) – tyres* – sharps	Yes, if storing > 5 tonnes of waste generated off-site	Yes, in loads of > 200kg (other than tyres or asbestos transported within NSW)	Yes (WasteLocate for tyres and asbestos in NSW, otherwise online tracking). Exceptions include wastes transported in NSW where: – sharps transport complies with sharps exemption – <20 waste tyres are in loads <200kg – asbestos is in loads <100kg or <10m^2 of sheeting.

5.3.3 General requirements

a) Identify the types and quantities of waste that will be generated.

b) Classify wastes to determine licensing, waste tracking and disposal requirements (refer to section 5.3.2).

c) Consider principles of avoid, reduce, reuse and recycle (refer to section 8.1).

d) Segregate and label waste to facilitate recycling, avoid cross-contamination and reduce disposal costs.

e) Keep facilities including substations, depots, worksites and offices clean and tidy.

Segregate waste to avoid cross contamination

Example of poor waste segregation

5.3.4 Transporting

a) Use a licensed transporter for quantities exceeding licensing thresholds (refer to section 5.3.2).

b) Before trackable waste is removed from the worksite (refer to section 5.3.2):

- obtain consignment approval from the receiving waste facility
- sign the completed waste transport certificate
- use online waste tracking where available, otherwise retain hard copy waste tracking records for 4 years.

Retain hard copy waste tracking records for 4 years

c) Where waste tracking is not required, retain tipping dockets as proof of disposal.

d) Secure and cover loads to prevent spilling waste.

e) A transport licence and waste tracking are not required for transport by *employees* in Ausgrid vehicles between Ausgrid premises (for example, from a substation to a depot), or for transport of waste for *emergency works*.

5.3.5 Storing

a) Use a licensed storage facility for quantities exceeding licensing thresholds (refer to section 5.3.2). *Employees* need to comply with Ausgrid's PCB licence for the transport and storage of *PCB waste and material* and Ausgrid's waste licence for Homebush depot for the storage of certain waste.

b) Do not overfill bins.

c) Keep waste bins and containers in good condition.

d) Cover waste that could blow or wash away.

e) Store waste away from drainage lines, grates, drains, inlets and *waterways*, where practicable.

f) Store liquid waste in accordance with section 2.3.

g) Arrange disposal or recycling of wastes as soon as reasonably practicable.

5.3.6 Disposing waste

a) Dispose of waste to a facility licensed to accept the waste.

b) Dispose of waste (which is not being recycled) only to a waste facility within 150km of the place of generation. If there are no appropriate facilities within 150km, transport the waste to the nearest appropriate facility.

c) *Employees* should use bins at depots for common waste streams. Alternatively, *employees* can contact PropertyOneCall (PLUS ES) to organise waste collection (refer to section 10).

d) Recycle mercury containing lamps (such as street lighting lamps, fluorescent tubes and compact fluorescent lamps). Ausgrid *workers* can use the specific recycling bins at major depots. Take care not to break the lamps as they contain vapours that can be hazardous to human health and the environment.

Note: Ausgrid is a signatory to the FluoroCycle scheme, meaning we have committed to recycling all of our mercury containing lamps.

5.3.7 Managing spoil

a) Use Figure 5.3-1 to determine the requirements for managing spoil.

5.3.8 Spoil from 132kV cable trenches

Spoil from below the slab of Ausgrid's 132kV cable trenches installed prior to 1980 should be treated as *SCW* unless testing for organochlorine pesticides proves otherwise.

SCW is subject to controls including licences and approvals for storage, transport and disposal.

Follow specific controls for managing this spoil. Ausgrid employees can refer to The Wire (PLUS ES). Controls include:

a) *Workers* handling and transporting the spoil require awareness training in organochlorine pesticides and *PPE* (refer to Table 1.3-1).

b) Clearly label and maintain packages, containers and storage areas.

c) Keep spoil from below the slab separate to spoil from above the slab.

d) Store spoil in a plastic lined and covered bin.

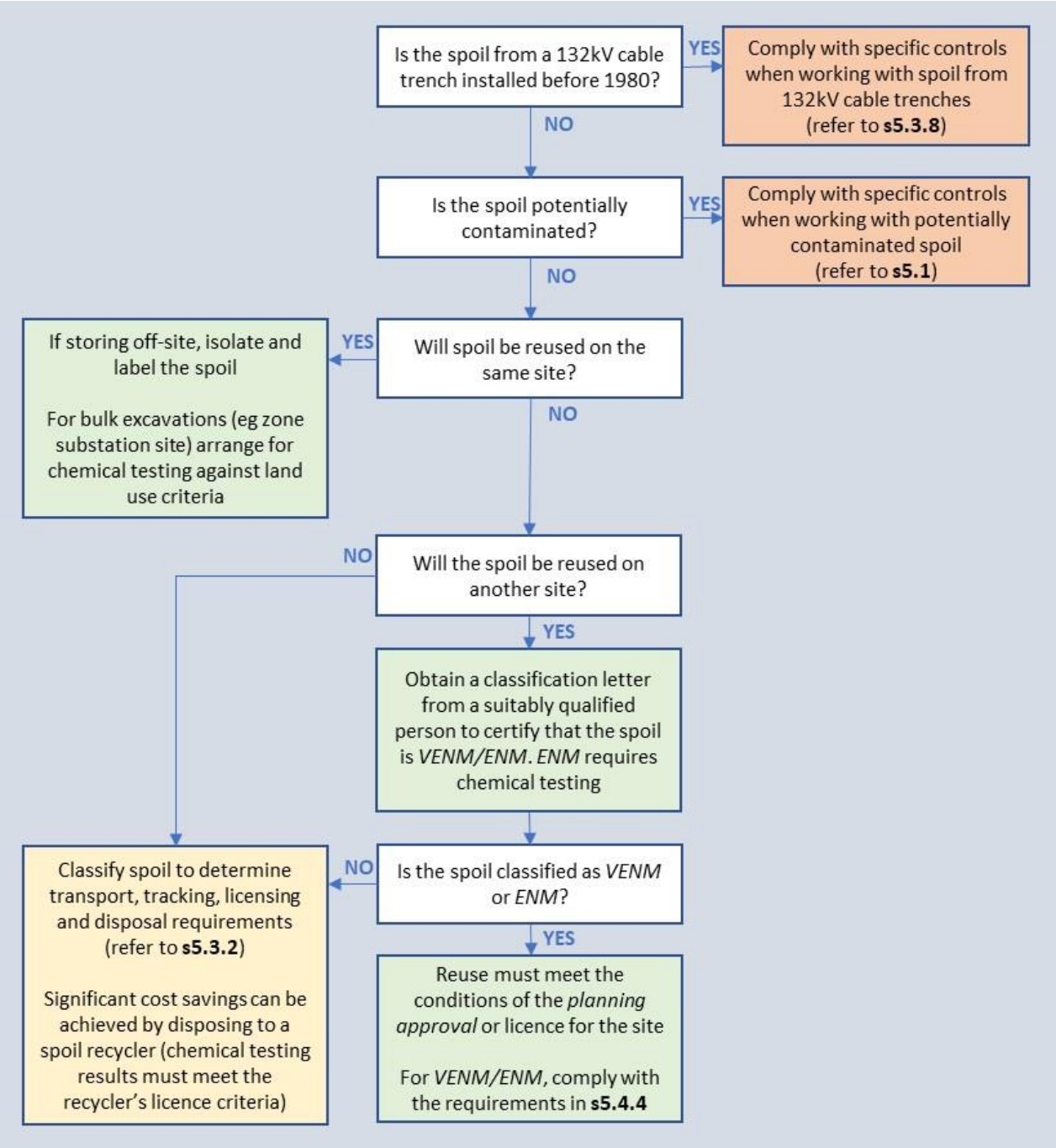
e) Reinstate spoil (below the slab) on-site rather than disposing off-site, where practicable.

Spoil from below the slab should be assumed SCW unless tested otherwise

f) When storing > 1 tonne of *SCW* offsite use a licensed storage facility (refer to the scheduled chemical control order).

g) Refer to section 2.2 for requirements for managing water from Ausgrid's 132kV cable trenches.

Figure 5.3-1: Process for managing spoil



5.3.9 Reporting illegal dumping

a) For material dumped on Ausgrid property – *employees* must contact PropertyOneCall (PLUS ES) (refer to section 10).

b) For suspected asbestos containing material dumped on public property – *employees* can refer to the Asbestos Quick Guide (PLUS ES).

c) For any other illegally dumped waste - report via RID (Report Illegal Dumping) Online.

d) Where dumped waste has caused a spill or contamination - refer to section 9.1.2 for spill response procedures.

5.4 USE OF RECOVERED MATERIALS

Background

The correct use of recovered materials (such as crushed concrete and recovered soil) can reduce a project's cost and environmental impact.

Before applying recovered materials to land, specific requirements must be met. These are contained in *EPA* Resource Recovery Orders (RROs) for suppliers, and Resource Recovery Exemptions (RREs) for end users, of recovered materials.

Use of recovered materials must comply with RROs and RREs

Providing or receiving contaminated materials (such as with asbestos or chemicals) can harm human health and the environment.

Many RROs and RREs are in force for commonly recovered and reused wastes, including aggregates, fines, *ENM*, *VENM*, mulch, coal ash, stormwater, tyres etc.

When to contact Environmental Services
02 9394 6659

a) Incidents involving recovered materials.

b) Receiving > 20m^3 of *VENM*, *ENM*, or *recovered aggregates* for application to land.

c) Applying recovered material (other than *VENM*, *ENM*, *recovered aggregates*, stormwater, compost or mulch) to land.

d) Applying recovered material to *environmentally sensitive areas*.

e) Planning to supply recovered materials to third parties.

f) Works cannot meet the requirements in this section of the *Handbook*.

A specialist assessment and/or risk management protocol (RMP) may be required.

Definitions

Agricultural land is land used for broad acre cropping, pasture, horticulture, growing fruit or keeping livestock.

ENM is excavated natural material (refer to section 5.3).

Environmentally sensitive areas are defined in the mulch RRO and include *ecologically sensitive areas* described in section 6.1.

Recovered aggregates include crushed concrete, brick, rock, asphalt and ceramics, other than refractory bricks and materials or asphalt that contains coal tar.

RMP means a site or project specific risk management protocol.

RRE is Resources Recovery Exemption which applies to end users of recovered material.

RRO is Resource Recovery Order which applies to suppliers and processors of recovered material.

VENM is virgin excavated natural material (refer to section 5.3).

5.4.1 Pre-work checks

a) Check the requirements of any applicable *planning approval* or *other approvals* (refer to section 1.5).

b) Check the requirements of any applicable RRO or RRE (for generating/accepting recovered materials).

c) Check for *environmentally sensitive areas* (refer to WebGIS EL) or *agricultural land*.

5.4.2 General requirements

a) When receiving recovered materials for land application, comply with the RRE (for receivers or end users).

b) When supplying recovered material for land application, comply with the RRO (for processors or suppliers).

c) When receiving recovered materials, obtain written confirmation of the source/nature of all recovered materials prior to importation.

d) Apply material to land within a reasonable period of time after its receipt.

e) Always obtain land owner/manager consent when applying recovered material to land outside of the road reserve (for example *NPWS*, private landowners, Crown Lands).

5.4.3 Receiving VENM, ENM, or recovered aggregates

a) Obtain a statement from the supplier confirming that the material meets all requirements of the RRO (does not apply to VENM).

b) Keep records of the quantity of material received and the supplier's name and address for 6 years.

c) For *VENM*/*ENM,* request a waste classification report from the supplier.

d) During unloading of *ENM* or recovered aggregates, arrange visual inspection for *ACM* by an Ausgrid Level 3 asbestos trained *worker* or otherwise suitably qualified person.

e) Only use *ENM* for engineering fill or earthworks.

f) Only use *recovered aggregates* for road making, building, landscaping and construction works.

g) Do not use *recovered aggregates* in the following situations:

- Construction of roads on private property, unless approved by a *DA or exempt development*
- Around *waterways* or for drainage applications such as stormwater drainage or infiltration areas or in or beneath water, including groundwater
- Unsealed roads that would be subject to significant stormwater flows.

h) Prior to receiving any *recovered aggregates*:

- check the supplier holds an EPL for processing the relevant material
- obtain a statement from the supplier that they comply with the relevant *EPA* protocols for managing asbestos during resource recovery of construction and demolition waste
- obtain a copy of the supplier's material receiving inspection process.

5.4.4 Supplying ENM or VENM

a) Unless *exempt development* (refer to section 1.5.1) use of *ENM* and *VENM* must be in accordance with an approval (*SER*, *REF*, *EIS* or *DA*).

b) *VENM* supplied for use on any worksite should be accompanied by a classification letter or VENM certificate prepared by a suitably qualified person.

c) When supplying *VENM* as fill material, provide your details, the origin of the material and quantity of material. Keep records of loads delivered.

d) Special requirements must be met when supplying *ENM*, these include:

- the *ENM* can only be applied to land as engineering fill or used in earthworks
- keep a written record of all sampling results, the quantity supplied and the name and address of each person who received the *ENM* for 6 years
- provide a written statement to the receiver, certifying that the *ENM* complies with the relevant conditions of the *ENM* RRE
- provide the receiver with the *ENM* RRO and RRE.

Contaminated recovered material can result in significant remediation costs

5.4.5 Receiving mulch generated at another site

a) Comply with any controls provided by the supplier (which may be specified as part of an *RMP* required by the mulch RRO).

b) Do not allow leachate (run-off) to migrate off-site.

c) Visually inspect mulch and reject loads with weeds or other contaminants.

5.4.6 Supplying mulch for use on another site

a) Only supply mulch in accordance with an *RMP* prepared in accordance with the mulch RRO.

b) Visually inspect plant material for weeds, diseases and pests prior to mulching.

c) Do not supply mulch for use in an *environmentally sensitive areas* or on *agricultural land*.

d) Provide documentation to the receiver detailing their obligations and the specific environmental controls in the *RMP*.

e) Keep written records of the *RMP* and visual inspections for 6 years.

Do not supply mulch for use in an environmentally sensitive areas or on agricultural land

6 ECOLOGY

6.1 VEGETATION

Background

Vegetation includes *trees*, plants, shrubs and ground cover. Some vegetation is considered more significant because it is threatened and/or plays an important role in the ecosystem.

Vegetation can be impacted by clearing, trimming; damaging trunks and root structures; or compacting, waterlogging, contaminating or changing the height of the surrounding soil.

Example of a threatened orchid

Potential impacts to vegetation must be assessed and managed in accordance with legal requirements. Specialist assessments, approvals and restrictions apply to certain activities and/or *ecologically sensitive areas*.

When to contact Environmental Services
02 9394 6659

a) Incidents involving vegetation.

b) Works that could impact *ecologically sensitive areas* and have not been assessed/approved by an *EIA, approval, licence or permit* (refer to section 1.5).

c) Works that cannot meet the requirements in this section of the *Handbook*.

A specialist assessment and/or an approval may be required.

Definitions

CRA is a conservation risk assessment which is required prior to undertaking maintenance works in national park estate.

Ecologically sensitive areas include:

- national park estate
- threatened species and endangered ecological communities (EEC)
- areas of outstanding biodiversity value and critical habitat
- wilderness areas
- biobanking sites and biodiversity stewardship sites
- land subject to a conservation agreement (such as a biodiversity offset)
- marine parks
- RAMSAR wetlands
- coastal wetlands and littoral rainforests
- seagrass, saltmarsh and mangroves
- areas subject to bush regeneration or revegetation
- old growth forests
- other remnant native vegetation, bushland and wetlands.

DCP means a local council's Development Control Plan.

DPI means the NSW Department of Primary Industries.

Non-destructive digging includes hand digging or air or hydro vacuum excavation, retaining *tree* roots where possible.

SRZ is structural root zone, which is the area where the roots provide critical structural stability for the *tree*.

TPZ is *tree* protection zone, which is the area set aside for the protection of a *tree's* roots and crown to maintain the *tree's* long-term viability.

Tree is vegetation, usually taller than 3m when mature, with a distinct trunk of circumference >0.3m at a height of 1m above the ground.

TSMP means Ausgrid's Tree Safety Management Plan.

6.1.1 Pre-work checks

a) Check the requirements of any applicable *planning approval* or *other approvals* (refer to section 1.5). If *a planning approval* is not required, and the works involve ground or vegetation disturbance, then check for the presence of remnant native vegetation or *ecological sensitive areas* (refer to WebGIS EL and Figure 6.1-1).

b) Where *trees* are present:

- calculate the *TPZ* and *SRZ* (refer to Figure 6.1-3 or use the TPZ/SRZ Calculator)
- check for recent incursions into the *SRZ* and their potential impacts to *tree* stability.

c) If undertaking inspection or maintenance work in national park estate, have current National Parks Protocol Induction training (refer to Table 1.3-1).

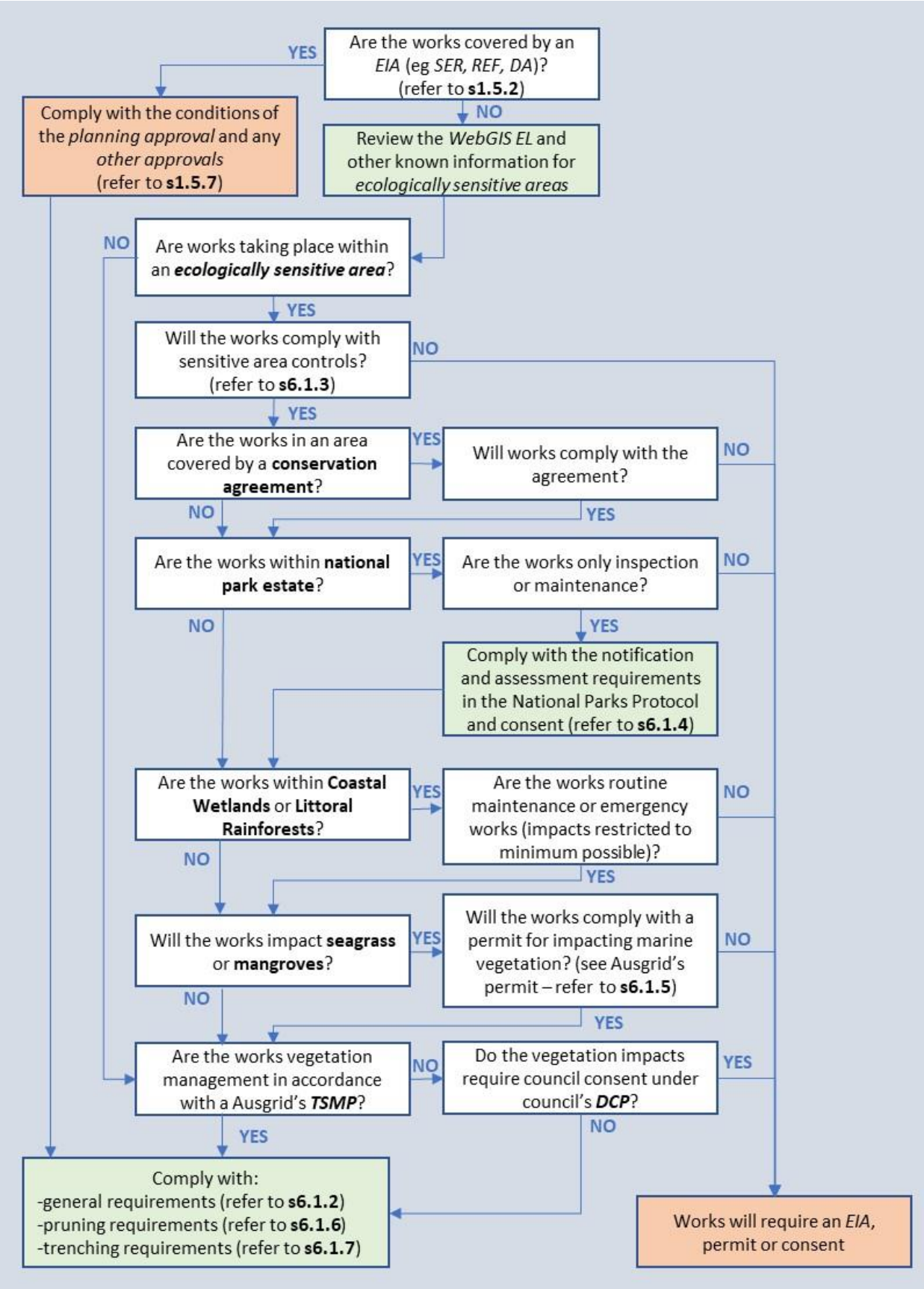
d) Vegetation maintenance contractors require current training in an Ausgrid recognised tree trimming course (refer to Table 1.3-1 and section 6.1.6).

e) Use Figure 6.1-1 to determine the requirements when working around or impacting vegetation.

Endangered ecological community – Eastern Suburbs Banksia Scrub

Trees with compromised SRZs are at risk of structural failure

Figure 6.1-1: Process for managing vegetation impacts



6.1.2 General requirements

When working around vegetation:

a) Minimise clearing and disturbance of all vegetation, including ground cover.

b) Retain native ground cover vegetation (excluding access tracks) to 10-30cm high where possible (for example, set slasher height to at least 10cm).

c) Use existing roadways or access tracks.

d) No clearing of vegetation within 20m of a natural *waterway*.

e) Minimise activity (storage areas, stockpiles, vehicle parking, and access) within the *TPZ* (refer to Figure 6.1-3).

f) Establish exclusion zones by restricting access to prevent damage to native vegetation and fauna habitats.

g) Protect *trees* from mechanical damage. Controls to consider include fencing or strap boards with padding.

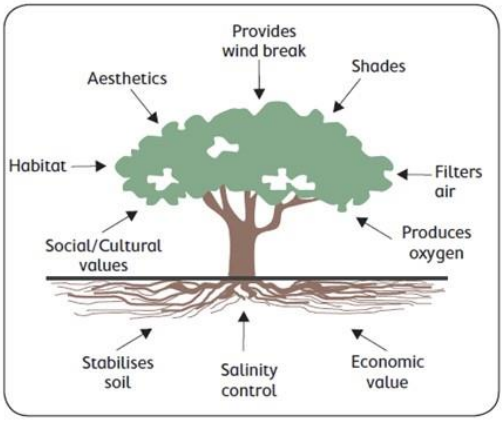
h) Implement controls to prevent the spread or introduction of weeds and pathogens by maintaining vehicle, equipment and clothing hygiene (refer to section 6.3).

i) Consider the use of matting/mulch on the soil surface to reduce compaction and root damage from unavoidable traffic movements (if using mulch refer to section 5.4.5).

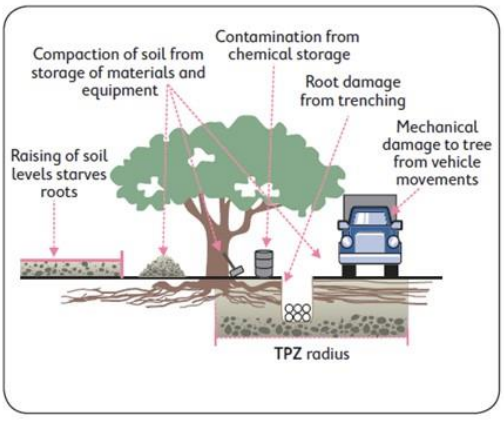
j) Water stress affected *trees* during the construction process.

Strap boards and padding to the trunk to prevent damage

k) Designate areas for access and storage to avoid soil compaction in the *TPZ*.



Vegetation provides a range of benefits



Activities undertaken within the TPZ can impact a tree's health and stability

6.1.3 Works in ecologically sensitive areas

Works in *ecologically sensitive areas* will require a specialist assessment, and/or approval unless all the following controls are implemented:

a) All *workers* to be made aware of *ecologically sensitive areas* and the need to avoid impacts.

b) No works in undisturbed areas (including storing equipment in, parking vehicles on or accessing the worksite through an undisturbed area).

c) No disturbance of bushrock, *tree* hollows, wetlands, mangroves, nests, aquatic or other sensitive habitats.

d) No use of *pesticides*.

e) No importing mulch from other sites.

Specific controls apply to works in ecologically sensitive areas

f) No disturbance of remnant native vegetation unless works are for the purpose of vegetation maintenance, undertaken in accordance with Ausgrid's TSMP and clearing is to the minimum extent necessary to maintain existing and regularly maintained clearances (no new clearance envelopes).

g) For works in national park estate or works affecting seagrass or mangroves refer to sections 6.1.4 and 6.1.5.

h) For works that might impact *Aboriginal cultural heritage* or *non-Aboriginal heritage trees* refer to sections 7.1 and 7.2.

i) For works on land subject to a conservation agreement comply with the agreement or Ausgrid's exemption.

6.1.4 Works in national park estate

a) New works in national park estate require approval from *NPWS*.

b) When undertaking inspection, maintenance and *emergency works* in national park estate, comply with the National Parks protocol and consent. Conditions include providing notice to the *NPWS* Area Office (refer to section 10):

- At least 4 days' notice for inspection works (unless the inspections are undertaken by foot or passenger vehicle and do not require the use of equipment) using EGN 540 Ausgrid Notification to National Parks template
- At least 2 weeks' notice and a *CRA* for maintenance works. The maintenance notification / *CRA* template can be generated from the WebGIS EL
- Notice as soon as practicable after any *emergency works* have been undertaken.

Notification is required for inspection and maintenance works in national park estates

6.1.5 Working around seagrass or mangroves

a) Impacts to marine vegetation will require a permit from *DPI*.

Ausgrid has a Fisheries permit for vegetation management works around mangroves.

b) If working under Ausgrid's permit, comply with the conditions. Conditions of the permit include notifications to *DPI* and preparation of a *CEMP* (refer to EF 560 Managing Marine Vegetation). Controls in the *CEMP* include:

- restrictions on material storage and stockpiling
- requirements for site restoration and clean up
- machinery access requirements
- incident reporting
- no go areas and visual inspections.

A permit is required to impact mangroves

6.1.6 Pruning branches

This section only applies where pruning of *tree* branches is allowed (refer to Figure 6.1-1).

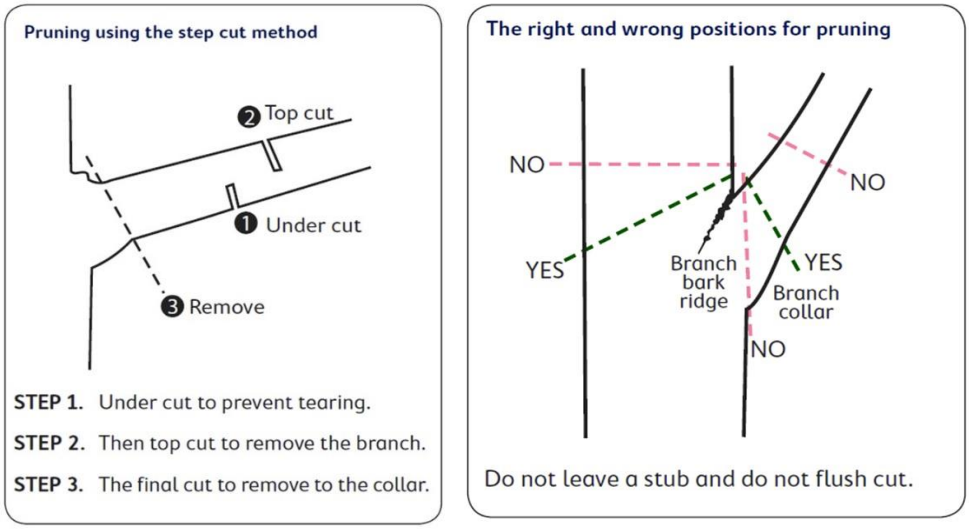
a) Pruning *tree* limbs > 100mm diameter should be under the direction of *workers* trained in an Ausgrid recognised *tree* trimming course and familiar with AS 4373 Pruning of amenity trees (unless for *emergency works*).

b) Protect and retain the branch collar and branch bark ridge during pruning. Damaging branch collars increases the risk of infection and decay.

c) Prune *trees* and other vegetation no more than the minimum required to meet network clearance and safety requirements.

d) Use the step cut method when pruning branches (refer to Figure 6.1-2).

Figure 6.1-2: Correct pruning techniques



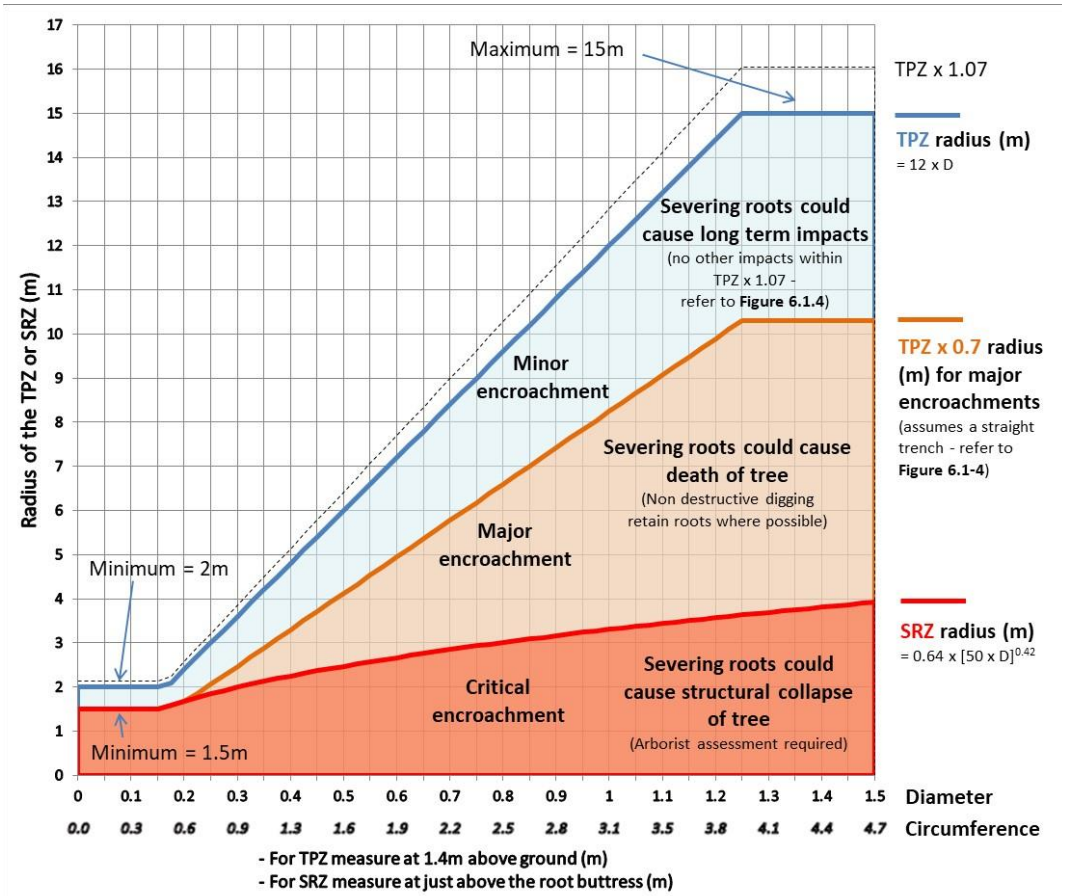
6.1.7 Trenching and excavating

a) Use Figure 6.1-3 and Figure 6.1-4 (or use the TPZ/SRZ Calculator) to determine the radius of the *SRZ* and *TPZ*.

b) Take into account any recent incursions into the *SRZ* and their potential impacts to *tree* stability. An example could be a new kerb and gutter.

c) If trenching / excavating within the *TPZ* is unavoidable, use Figure 6.1-5 to determine the requirements.

Figure 6.1-3: Calculating the TPZ and SRZ



Note: Palms and ferns have a SRZ and TPZ of 1m outside of the crown (the branches and leaves)

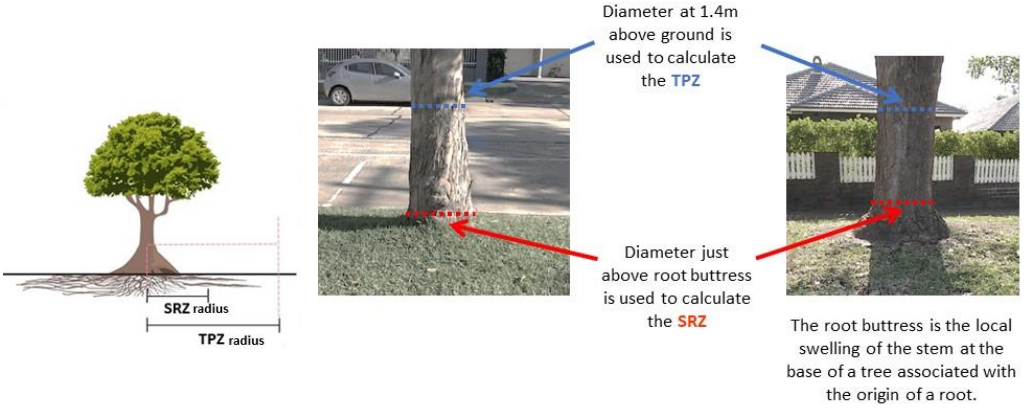


Figure 6.1-4: TPZ and SRZ

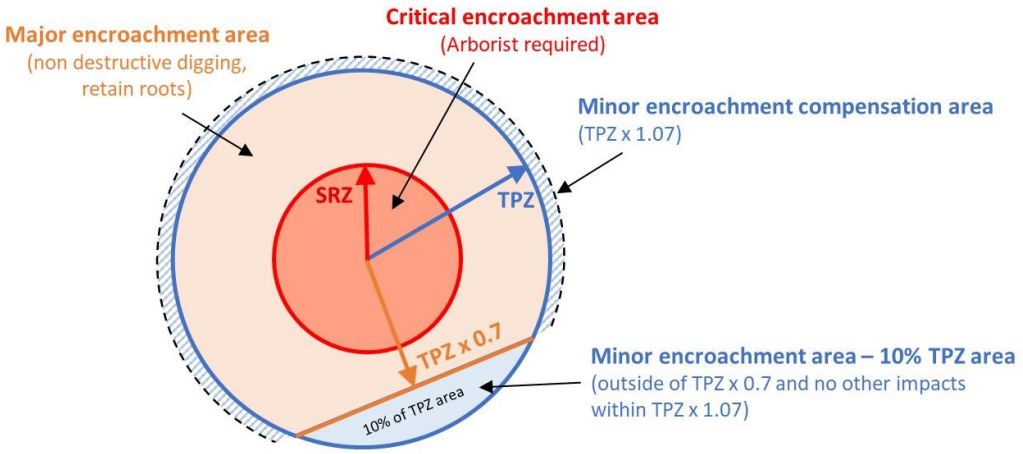
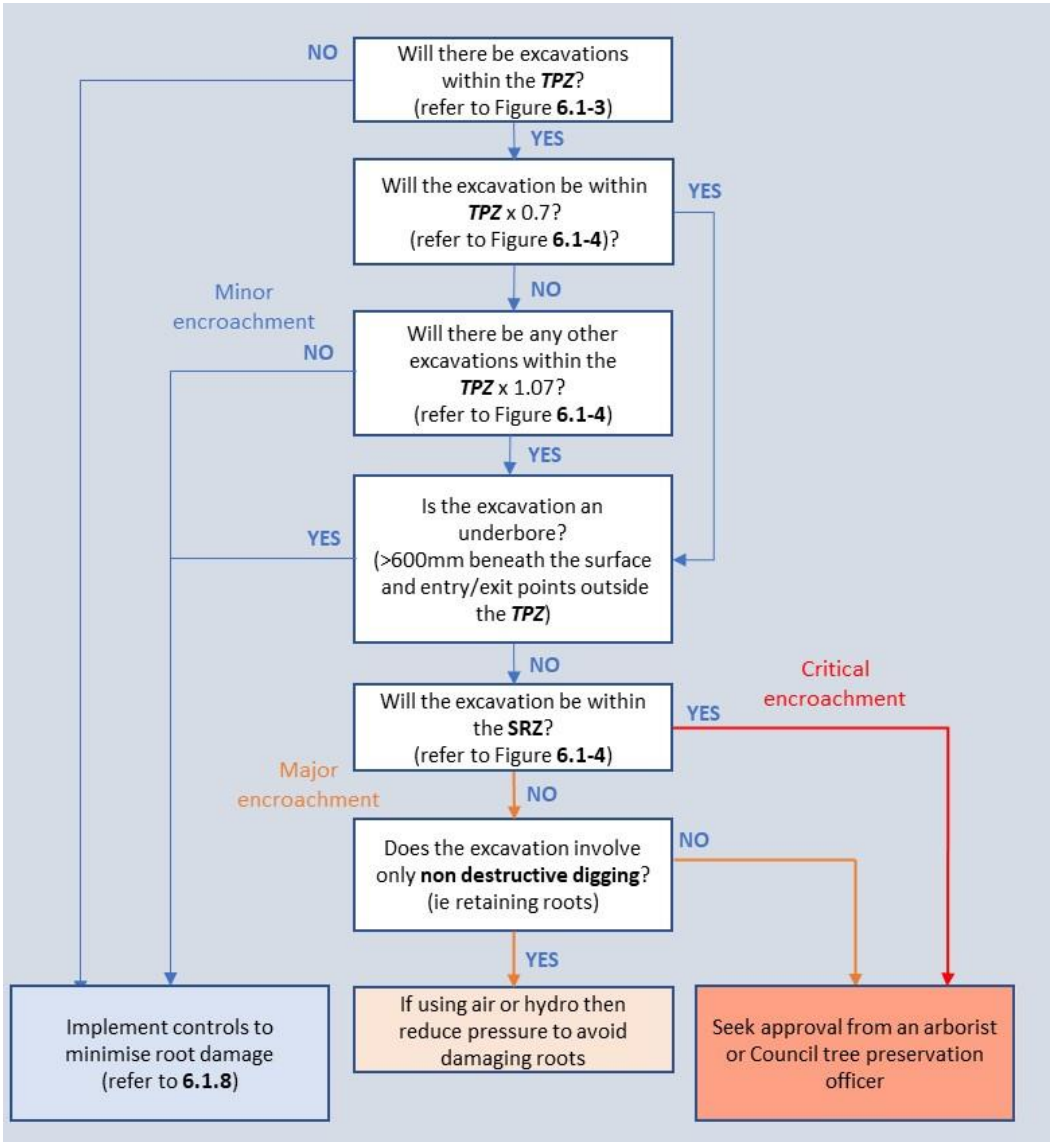


Figure 6.1-5: Requirements when working within the TPZ



6.1.8 Controls to minimise root damage

a) Seek advice from an arborist or Council *tree* preservation officer prior to impacting roots of a *tree* that is leaning, has significant existing incursions into the *SRZ* or is in poor health.

b) Wherever possible leave roots intact.

c) If roots need to be severed - refer to section 6.1.7, cut the roots with a clean sharp implement at the trench edge and do not apply any type of liquid or material to the severed root end.

d) Where roots are exposed for extended periods of time (>24 hours), wrap larger roots (> 50mm diameter) in jute mesh or hessian and keep moist.

e) Avoid discharging water on an ongoing basis in the same area as it could waterlog the soil and affect the *tree's* health.

f) Wash down plant and equipment outside the *TPZ*.

g) Minimise changes in soil levels in the *TPZ*. Where increases are unavoidable in the *TPZ*, use porous fill material.

h) Consider retaining topsoil and spread back on the backfilled trench surface to maintain the integrity of the seed bank.

i) Avoid compaction in the *TPZ*.

j) If surface sealing around *trees* is required, use a material which allows aeration (like gravel, unit pavers, coarse sand).

Wherever possible leave roots intact

Where roots are exposed for extended periods of time (>24 hours), wrap larger roots (> 50mm diameter) in jute mesh or hessian and keep moist

6.2 WILDLIFE

Background

Wildlife habitat includes areas that provide food, roosting, breeding, nesting and refuge. Some habitat is considered more significant because it supports threatened fauna and/or plays an important role in the ecosystem.

Wildlife impacts can result from removing or damaging vegetation, hollow-bearing *trees*, dead *trees*, bushrock, aquatic environments, and also from noisy works.

Tree hollows are an essential resource for many species

Potential impacts to wildlife and their habitats must be assessed and minimised in accordance with legal requirements. Specialist assessments, approvals and restrictions apply to certain activities and/or works within *ecologically sensitive areas*.

When to contact Environmental Services
02 9394 6659

a) Incidents involving wildlife.

b) Works will impact *ecologically sensitive areas* and have not been assessed/approved by an *EIA*, approval, licence or permit (refer to section 1.5).

c) Wildlife is detected and is likely to be impacted by the works.

d) Works cannot meet the requirements in this section of the *Handbook*.

A specialist assessment and/or approval may be required.

For the rescue or care of wildlife, contact a local wildlife rescue organisation, licensed wildlife handler or *NPWS* (refer to section 10).

Definitions

NPWS means the NSW National Parks and Wildlife Service.

Wildlife sensitive areas include *ecologically sensitive areas* described in section 6.1, known breeding sites, areas with tree hollows, bushrock and nests.

6.2.1 Pre-work checks

a) Check the requirements of any applicable *planning approval* or *other approvals* (refer to section 1.5). If *a planning approval* is not required, and the works involve ground or vegetation disturbance, then check for known *wildlife sensitive areas* (refer to WebGIS EL and look for any local signage).

b) Visually check for tree hollows, bushrock, nests and evidence of wildlife (including animals that could be using our network as habitat, such as possums in hollow-bearing poles, or birds or bats nesting in equipment).

6.2.2 Works in wildlife sensitive areas

Works in *wildlife sensitive areas* will require a specialist assessment, and or approval, unless all the following controls are implemented:

a) All *workers* to be made aware of *wildlife sensitive areas* and the need to avoid impacts.

b) No works in undisturbed areas (including storing equipment in, parking vehicles on or accessing the worksite through an undisturbed area).

c) No disturbance of bushrock, tree hollows, wetlands, mangroves, nests, aquatic or other sensitive habitats.

d) No use of *pesticides*.

e) Retain native ground cover vegetation.

f) No importing mulch from other sites.

g) No disturbance of native vegetation unless works are for the purpose of vegetation maintenance, undertaken in accordance with Ausgrid's TSMP, and clearing is to the minimum extent necessary to maintain existing and regularly maintained clearances (that is, no new clearance envelopes).

6.2.3 Wildlife on and around the network

Wildlife can use poles, substations, pits, depots and other buildings and structures for roosting, nesting or seeking refuge from predators.

a) Inspect the worksite for wildlife occupation prior to starting works.

b) Where wildlife is present (such as birds, possums, snakes, bats) wait for the animal to relocate if practicable.

c) Cover trenches and pits if left overnight to prevent wildlife from getting trapped. Provide an escape route (such as a log or stick) for animals if trenches or pits will be open for long periods.

d) Where wildlife (including eggs and nests) needs to be physically relocated, rescued, or requires care, contact a local wildlife rescue organisation, licensed wildlife handler or *NPWS* (refer to section 10).



Contact wildlife rescue organisations to rescue or relocate wildlife (refer to section 10)

6.2.4 Flying foxes on power lines

Flying foxes are protected by law. Their breeding season is typically mid-September to December. At this time, electrocuted female flying foxes are often carrying pups that can survive the death of their mother if rescued in time.

Flying fox pup rescued from powerline

For *Employees* rescuing a deceased flying fox possibly carrying a live pup:

a) Never attempt to rescue a live adult flying fox.

b) Contact a wildlife rescue organisation (refer to section 10) to arrange a rescuer to be present to collect the live pup.

c) For the safe removal of animals, *employees* must follow HS000-W0127 Flying-Fox (Bat) Live Pup & Lifeless Adult removal from overhead mains.

d) Any live animals should only be handled by a local wildlife rescuer.

e) Place deceased animals in a plastic lined box or plastic bag and dispose as general solid waste.

6.2.5 Bee swarms and hives

If a native bee or honeybee swarm or hive is encountered on electrical infrastructure:

a) Do not attempt to kill or interfere with the bees. Honeybees are likely to sting if disturbed.

b) Contact Environmental Services on 02 9394 6659. Local beekeepers (refer to section 10) may be available to remove the honeybee swarm or hive. A small fee may be required to cover their expenses.

Note: *DPI* sometimes impose *biosecurity* emergency orders (such as the Biosecurity Varroa Mite Emergency Order 2022) which could restrict what can be done with the bees.

Bee swarm on pole

6.2.6 Powerful owls

Powerful owls are a NSW listed threatened species. Their breeding season is April to October.

Disturbing nesting owls can lead to owls abandoning the nest and their young. Powerful owls have also attacked people while defending their nests.

a) Check project documentation and WebGIS EL to determine if works are near a powerful owl breeding territory.

A Powerful owl

When working near powerful owl breeding territories:

General conditions include (all year round):

b) All *workers* to be made aware of powerful owl breeding territories in the area.

c) Where possible, no noisy works (such as chainsaws or mulching)

- between an hour before sunset and an hour after sunrise (refer to sunrise calculator) or
- within 100m of identified roost sites.

d) If impacting large hollow-bearing trees (trunk diameter > 80cm at 1m above ground) and hollows > 30cm diameter, contact a *NPWS* Area Office (refer to section 10).

e) Retain all hollows and all horizontal perching branches of 4-10cm diameter in flyways (such as overhanging creeks and tracks) where possible.

f) Avoid trimming of horizontal branches within 1m of tree hollows > 30cm diameter where possible.

g) Avoid vegetation trimming that opens the canopy in riparian zones (typically up to 15m from a creek/riverbank) where possible.

h) Report powerful owl deaths to Environmental Services on 02 9394 6659.

Breeding Season: April to October (in addition to the general conditions):

i) Contact Birdlife Australia at least 2 weeks prior to works commencing (refer to section 10).

j) No works within 100m of an identified nesting tree or mapped breeding territory during the breeding season without first undertaking an inspection for nesting owls.

k) Only hand tools are to be used within 50m of roost trees and 100m of nest trees.

l) Comply with additional conditions for individual sites at the discretion of *NPWS* when working in national park estate.

6.3 BIOSECURITY

Background

Biosecurity refers to measures to prevent weeds, pests and pathogens threatening the economy and environment. Pathogens are disease causing microorganisms such as bacteria, fungi or viruses. Pathogens, such as myrtle rust, can cause infectious diseases, 'dieback' and plant death.

Clothing, footwear, tools, equipment, machinery and vehicles can spread weeds and pathogens into bushland.

The spread of weeds, pests and pathogens must be controlled in accordance with legal requirements. These requirements include the principle of shared responsibility, which means everyone is doing what is reasonable and practicable for them to prevent, eliminate or minimise *biosecurity* risks.

Specialist assessments, restrictions and notifications apply to certain activities and/or areas.

Vehicles and machinery can spread weeds from infested areas to weed-free locations

When to contact Environmental Services
02 9394 6659

a) Incidents involving weeds, pests and pathogens.

b) Works cannot meet the requirements in this section of the *Handbook*.

Further assessment may be required.

Definitions

Biosecurity means measures to prevent weeds, pests and pathogens threatening the economy and environment.

6.3.1 Pre-work checks

a) Check the requirements of any applicable *planning approval* or *other approvals* (refer to section 1.5). If *a planning approval* is not required, then check for national park estate and known *biosecurity* control areas (refer to WebGIS EL).

b) Check for the presence of weeds and pathogens (refer to a weed identification tool, Figure 6.3-2 and look out for any *biosecurity* signage).

c) For *agricultural land*, check with the landowner if there are any *biosecurity* requirements.

Plant and equipment need to be disinfected before entering native bushland or leaving infested areas

6.3.2 Works in bushland, agricultural properties, and/or infested areas

Planning

a) Adopt a come clean, go clean approach to all activities, minimising the risk of spreading pests, weeds and pathogens.

b) Minimise vehicle and equipment movements on the worksite.

c) Establish entry and exit points away from infested areas, where practicable.

d) Program works from least to most infested areas, where practicable.

e) Schedule works for a day when the soil is dry and doesn't stick to footwear, equipment and tools, where practicable.

f) When in national park estate, comply with the National Parks protocol and consent (refer to section 6.1).

g) When in *ecologically sensitive areas*, do not import mulch from other sites.

h) Look for signage that could indicate *biosecurity* risks or practices that need to be followed. If in doubt, contact the landowner.

Note: Certain activities on agricultural *land* could impact the occupier's agriculture accreditation and income.

i) Comply with all reasonable requests from owners and occupiers.

Certain activities on agricultural land may impact the occupier's agriculture accreditation

At site entry and exit

j) Prior to entering native bushland or leaving an infested area:

- clean footwear, tools, equipment, machinery, and vehicles with a hard brush or stick to remove as much mud, soil and organic matter as practicable (refer to Figure 6.3-1)
- disinfect potentially contaminated materials (such as footwear and tyres) with a solution of 70% methylated spirits and 30% water applied with a spray bottle
- remove any residual seeds from clothing, footwear, tools and equipment by hand.

Myrtle rust spores on clothing

k) Choose clean down sites:

- where soil and seed matter would be contained
- away from *waterways* and drains
- close to infested areas, if practicable).

During and after works

l) Use existing roadways or access tracks.

m) When disposing of weeds or pathogen infected plants:

- bag weeds and infested material, where practicable
- cover loads to prevent seeds, plant material and pathogens from dispersing
- contact the receiving facility prior to delivery
- plants that are not in seed and have no evidence of disease, can be left where found.

n) Change and launder work clothes after working in infested areas.

Figure 6.3-1: Parts of vehicles that should be checked and cleaned

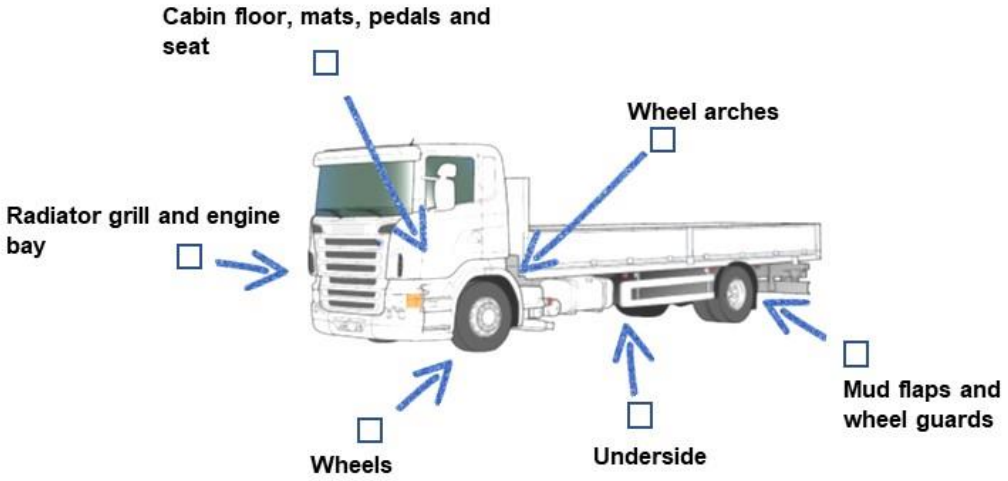


Figure 6.3-2: Some common weeds and pathogens in Ausgrid's network area.

Green Cestrum *(Cestrum parqui)**

Broad leaf pepper *(Schinus terebinthifolius)**

Myrtle rust *(Puccinia psidii)**

Bitou Bush *(Chrysanthemoides monilifera subsp. rotundata)***

Grey Sallow *(Salix cinerea)**

Madeira Vine *(Anredera cordifolia)**

Groundsel Bush *(Baccharis halimifolia)**

Paper Mulbery *(Broussonetia papyrifera)**

Pampas Grass *(Cortaderia spp.)**

European Blackberry *(Rubus fruticosus agg.)**

Yellow bells *(Tecoma stans)**

Prickly Pear *(Opuntia spp.)**

Crofton Weed *(Ageratina adenophera)**

Lantana *(Lantana camara)**

*PHOTOS COURTESY OF NSW DEPARTMENT OF PRIMARY INDUSTRIES.

**PHOTO COURTESY OF H. CHERRY, NATIONAL WONS PROGRAM.

6.4 TOTAL FIRE BANS

Background

During the *Bushfire Danger Period*, *workers* should be alert to the possibility of pending heatwaves and/or declarations of Total Fire Bans (TOBAN).

Ausgrid's System Control is notified of *TOBANs* by the NSW Rural Fire Service (NSWRFS). System Control sends SMS/email alerts to key *employees* and regional managers upon receiving the *NSWRFS* notice. *TOBAN* details are also posted on the *NSWRFS* website.

Hot works during a TOBAN need to comply with an exemption

Workers should be mindful that works on *TOBAN* days could be postponed, require additional risk assessment, higher levels of bushfire risk mitigation and control measures, *Hot Works* Permits and/or notification to the local *NSWRFS* or NSW Fire and Rescue (FRNSW) command centre.

Definitions

Bushfire Danger Period typically runs from 1 October to 31 March but could vary.

Bushfire prone land means land identified by local council which can support a bushfire or is vulnerable to bushfire attack. *Bushfire prone land* maps are certified by the Commissioner of the *NSWRFS*.

Clause 6 exemption is a specific exemption relating to 'Services and utilities—construction, essential repairs or maintenance'. It must be gazetted within the TOBAN order on the day and contains certain conditions such as having adequate firefighting equipment and notifying *NSWRFS* or *FRNSW*.

FRNSW is the NSW Fire and Rescue Service.

Hot works is any process involving grinding, welding, brazing, oxy cutting, heat treatment, heat shrinking, or other process that generates heat or sparks that can increase the risk of fire or explosion near flammable/combustible materials. For excluded activities, *employees* can refer to HS008-P0600 Hot Work (PLUS ES).

Live works means works on exposed mains and apparatus that are energised.

Out in the open excludes areas which are devoid of bushland and/or natural fuel loads, such as within pits and trenches, or are within the confines of built structures, such as inside buildings, workshops or basements.

NSWRFS is the NSW Rural Fire Service.

TOBAN is a Total Fire Ban order declared by the Minister or Commissioner of *NSWRFS* when bushfires are more likely to spread and cause damage.

6.4.1 Pre-work checks

a) Check whether a *TOBAN* has been declared on the day for the location of the works on the NSWRFS website.

Note: Ausgrid's System Control will send SMS/email alerts to key *employees*.

b) If undertaking *live works* in *bushfire prone land* or *hot works*, use Figure 6.4-1 to determine requirements that could apply.

c) Consider other activities that could start a fire and ensure controls are adequate to manage the risk (like driving through long grass or cigarette smoking).

If a *TOBAN* is declared:

d) Consider alternative work practices to avoid *hot works* or *live works out in the open*.

e) Check for *bushfire prone land* on the WebGIS EL.

f) Check whether the *TOBAN* order provides a *Clause 6 exemption*.

g) Check the requirements of any applicable *NSWRFS* or *FRNSW* approval**.**

6.4.2 General requirements for all hot works

a) Light and maintain fires in a manner that prevents the escape of fire, sparks, incandescent or burning material.

b) Check equipment is fit for purpose.

c) Supervise *hot works* for the entire time (never leave a naked flame unattended).

d) Schedule *hot works* during lower Fire Danger Rating periods (as declared by *NSWRFS*), where practicable.

e) Keep *hot works* clear of combustible material by at least 3m.

f) Isolate *hot works* using appropriate barriers and signage.

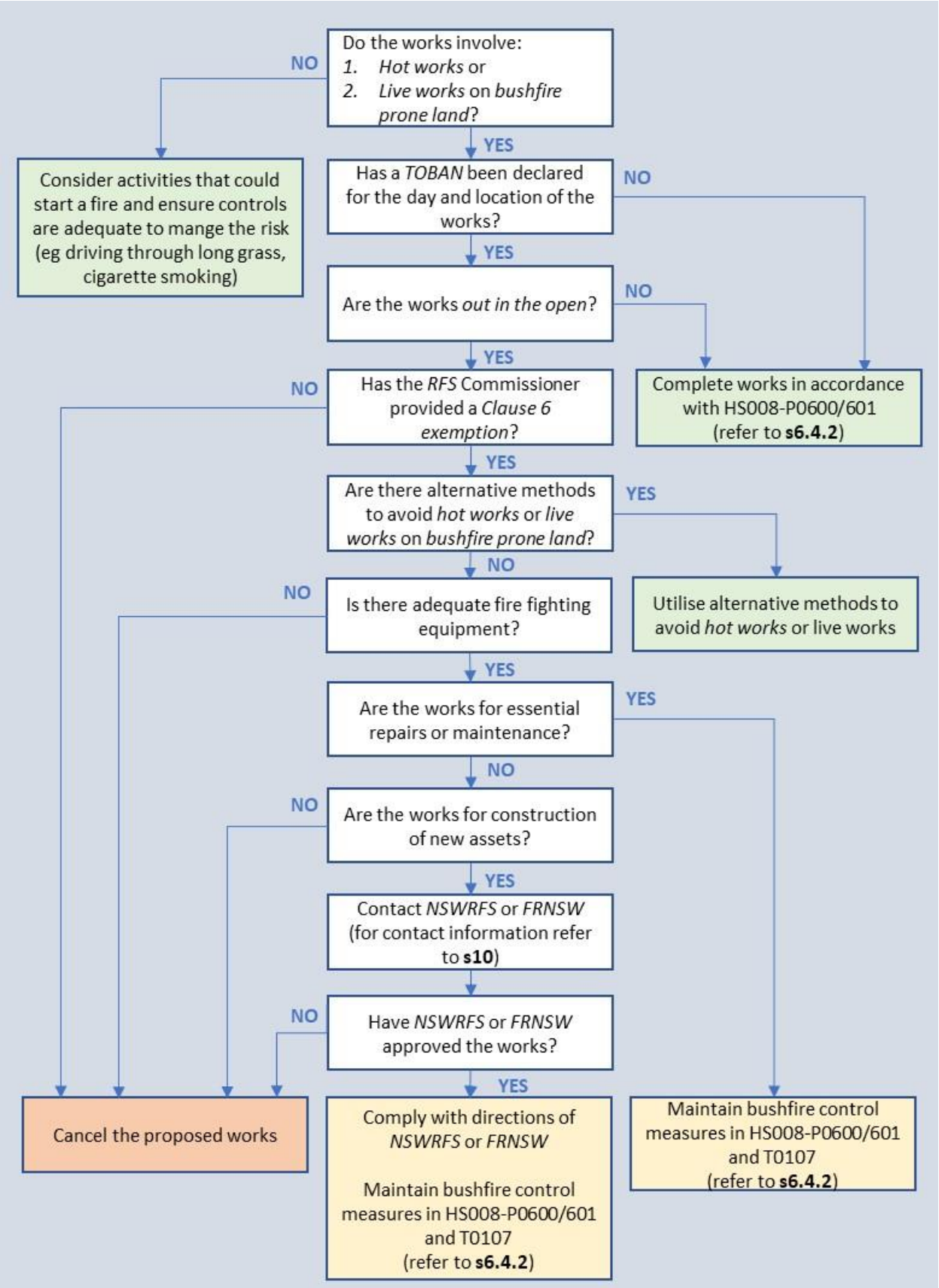
g) Keep adequate firefighting equipment immediately on hand.

h) Comply with other requirements relating to *hot works* and bushfires. Processes for *employees* can be found in:

- *hot work* (HS008-P0600 (PLUS ES))
- *hot work* permits (HS008-P0601 (PLUS ES))
- *hot work* near service stations (T0076)
- *hot work* near plastic gas pipes (DG 11)
- management of fire damaged *CCA* (Copper Chrome Arsenic wood preservative) poles (NEG SE09).

Specific controls apply for handling burnt CCA poles

Figure 6.4-1: Process for managing hot works and live works



7 HERITAGE

7.1 ABORIGINAL CULTURAL HERITAGE

Background

Aboriginal cultural heritage includes objects and places with evidence of Aboriginal occupation or with special cultural significance. These can include artefacts, middens, axe-grinding or tool sharpening grooves, scarred or carved trees, paintings, rock engravings and burial sites.

Impacts to *Aboriginal cultural heritage* can result from disturbing the ground surface (including sub-surface) and clearing vegetation (including ground cover).

Potential impacts to *Aboriginal cultural heritage* must be assessed and managed in accordance with legal requirements. Specialist assessments, consultation, permits, approvals and conditions apply.

When to contact Environmental Services
02 9394 6659

a) Incidents involving *Aboriginal cultural heritage*.

b) Works that might impact *Aboriginal cultural heritage* or *Aboriginal cultural heritage sensitive areas* and have not been assessed/approved by an *EIA* or *AHIP* (refer to section 1.5).

c) *Aboriginal cultural heritage* is potentially discovered.

d) Works cannot meet the requirements in this section of the *Handbook*.

A specialist assessment and/or an approval (*AHIP*) may be required.

Definitions

Aboriginal cultural heritage includes objects and places. Objects provide physical evidence of the use of an area by Aboriginal people (for example, stone, wood and shell artefacts). Examples of Aboriginal objects are shown in Figure 7.1-1. Places are areas of land that have special significance to Aboriginal people (for example, spiritual, historical, social, educational, and natural resource use).

Aboriginal cultural heritage sensitive areas include:

- areas within the WebGIS EL buffer of known *Aboriginal cultural heritage*
- areas with natural rock outcrops
- *undisturbed land* with any of the following landscape features (Figure 7.1-2):
  - within 200m of waters
  - within a sand dune system
  - on a ridge top, ridge line or headland
  - within 200m below or above a cliff face
  - within 20m of or in a cave, rock shelter, or a cave mouth.

Natural rock outcrops may contain evidence of Aboriginal cultural heritage

AHIP is Aboriginal heritage impact permit.

Disturbed land means land that has been the subject of human activity that has clear and observable changes to the land's surface. Examples of activities that may have *disturbed land* include soil ploughing, construction of roads, trails and tracks or buildings, installation of utilities, clearing of vegetation and substantial grazing. Refer to Figure 7.1-3 and Figure 7.1-4 for examples.

Figure 7.1-1: Examples of Aboriginal cultural heritage

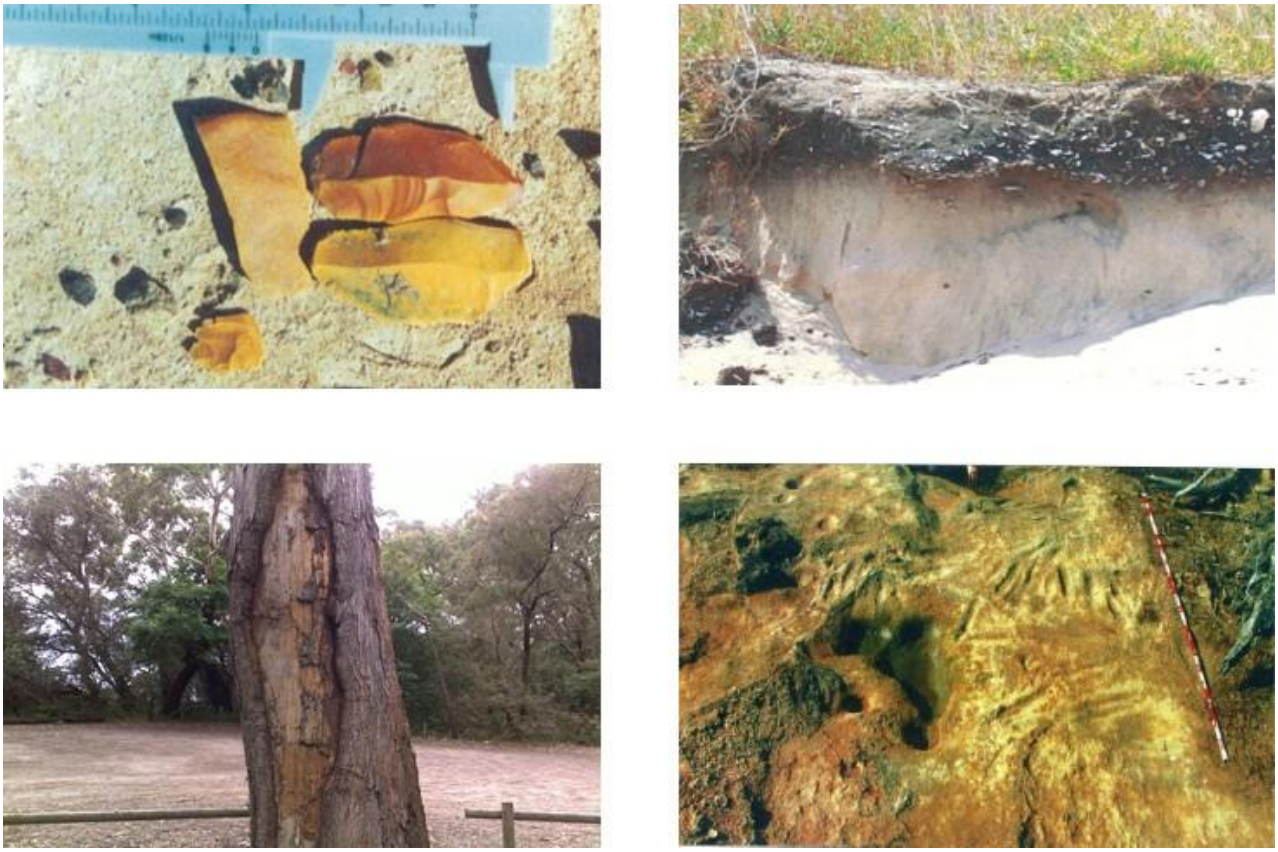


Figure 7.1-2: Aboriginal cultural heritage sensitive areas include undisturbed land with specific land features

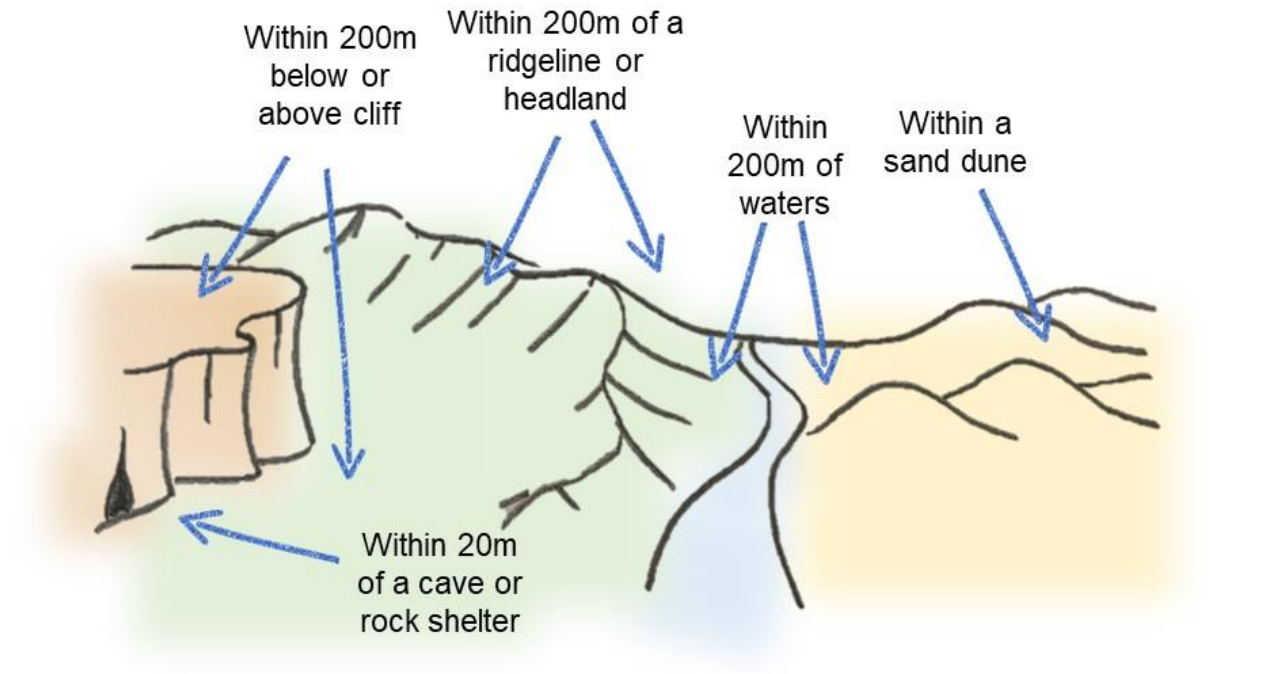


Figure 7.1-3: Examples of undisturbed land

Figure 7.1-4: Examples of disturbed land

7.1.1 Pre-work checks

a) Check the requirements of any applicable *planning approval* or *other approvals* (refer to section 1.5). If a *planning approval* is not required, and the works involve ground or vegetation disturbance, then check for the presence of *Aboriginal cultural heritage sensitive areas* (use WebGIS EL and Figure 7.1-5).

b) Visually check the work area for possible *Aboriginal cultural heritage* (refer to examples in Figure 7.1-1).

c) Use Figure 7.1-5 to determine the process for assessment of *Aboriginal cultural heritage*.

7.1.2 Working within Aboriginal cultural heritage and sensitive areas

Works within *Aboriginal cultural heritage sensitive areas* will require further assessment and possible *AHIP* unless all the following controls are implemented:

d) All *workers* to be made aware of the presence of *Aboriginal cultural heritage* in the area and the need to avoid impacts.

e) No disturbance of the ground surface or ground cover.

f) No disturbance of rock outcrops.

g) Where available keep to existing roadways or access tracks.

h) Use plant and equipment that would not disturb rock outcrops (such as rubber tyred vehicles).

i) No disturbance of native trees unless works are for the purpose of vegetation maintenance, undertaken in accordance with Ausgrid's TSMP and clearing is to the minimum extent necessary to maintain existing and regularly maintained clearances (that is no new clearance envelopes).

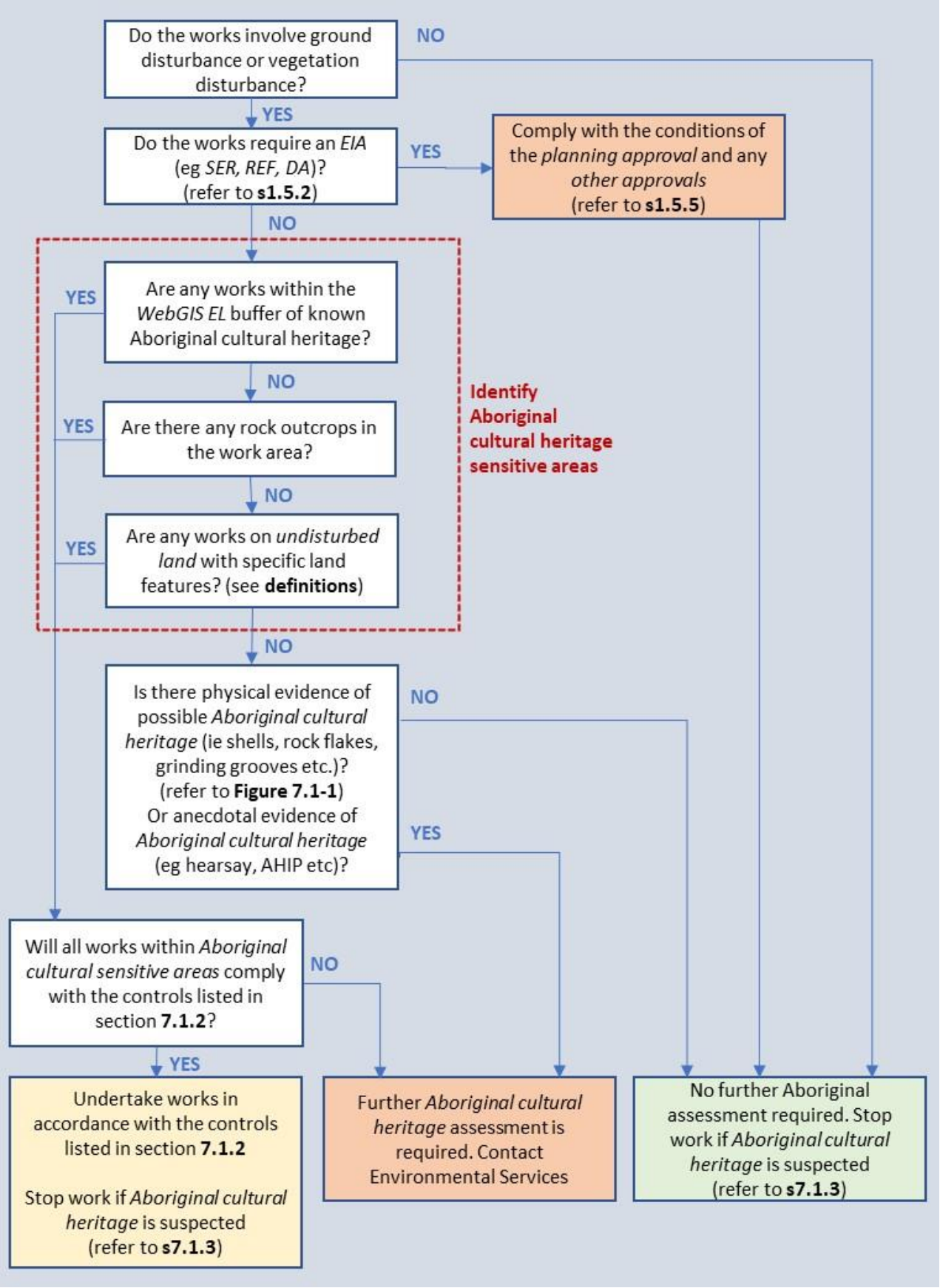
7.1.3 Potentially discovering Aboriginal cultural heritage

a) Stop work immediately and restrict access.

b) Notify the Supervisor and Environmental Services on 02 9394 6659. Environmental Services will contact the regulator if required.

c) If human remains (or suspected remains) are found during the works, all works in the vicinity must cease. The worksite must be secured and the NSW Police and *NPWS* must be notified immediately (refer to section 10).

Figure 7.1-5: Process for assessing Aboriginal cultural heritage



7.2 NON-ABORIGINAL HERITAGE

Background

Non-Aboriginal heritage includes items and places that are valued because of their historical, archaeological, cultural or architectural significance.

Physical items can include places, buildings, roads, gutters, trees, parks, electrical equipment, sewers, and archaeological sites. Classes of heritage significance include Local, State, National and World.

Ausgrid owns both local and state heritage listed substations and maintains a register which also includes potential movable heritage items.

Non-Aboriginal heritage impacts can result from physical alterations, excavations and item relocations.

Potential impacts to *non-Aboriginal heritage* must be assessed and managed in accordance with legal requirements. Specialist assessments, notifications, permits, approvals and restrictions apply to certain activities.

When to contact Environmental Services
02 9394 6659

a) Incidents involving *non-Aboriginal heritage*.

b) Works will impact *non-Aboriginal heritage* and have not been assessed/ approved by an *EIA* or *non-Aboriginal heritage* approval (refer to section 1.5).

c) *Non-Aboriginal heritage* is potentially discovered.

d) Works cannot meet the requirements in this section of the *Handbook*.

A specialist assessment and/or an approval may be required.

Definitions

Non-Aboriginal heritage includes *relics*, items, buildings and places that are valued because of their historical, archaeological, cultural or architectural significance.

Relic means any deposit, artefact, object or material evidence that relates to the settlement of New South Wales.

7.2.1 Pre-work checks

a) Check the requirements of any applicable *planning approval* or *other approvals* (refer to section 1.5). If *a planning approval* is not required, and the works involve ground or vegetation disturbance or building alterations, then check for the presence of *Non-Aboriginal heritage* (use WebGIS EL).

b) Use Table 7.2-1 to determine the requirements for *non-Aboriginal heritage*.

7.2.2 Working on or near non-Aboriginal heritage

Works impacting *non-Aboriginal heritage* require a specialist assessment, and or approval unless all the following controls are implemented:

a) all *workers* to be made aware of the presence of *non-Aboriginal heritage* in the vicinity of the works and the need to avoid impacts.

b) the requirements in Table 7.2-1 are complied with when working on or near *non-Aboriginal heritage.*

Note: Items can belong to more than one class and multiple requirements will apply.

Table 7.2-1: Requirements for different classes of non-Aboriginal heritage

Heritage class	Requirements
World, Commonwealth, National	Impacts to Commonwealth or World or National heritage could require a heritage assessment and/or approval, unless works involve only minor repairs and maintenance to electrical infrastructure or the sites management plan states that the area or item does not embody heritage values.
State	Impacts to State heritage require a heritage assessment and/or approval, unless in accordance with a S57 exemption or Ausgrid specific exemption. Additional requirements apply for Ausgrid's S170 items (see below). **Note:** State heritage items typically encompass the land (curtilage) on which the building(s) are located.
Local	More than minor or inconsequential impacts to local heritage or heritage conservation areas listed by Council require a statement of heritage impact, written notification to council and due consideration of council's response. Additional requirements apply for Ausgrid's S170 items (see below).
Where a relic could be discovered	Excavating any land which is likely to result in a *relic* being discovered, exposed, moved, damaged or destroyed requires a S140 excavation permit, unless the disturbance or excavation is carried out in accordance with a S139 exception.
Movable	Impacts to Ausgrid's movable heritage (Tier 1) require approval by Environmental Services in accordance with EF 17440 Movable heritage form (PLUS ES). Impacts to Ausgrid's movable heritage (Tier 2) require a Photographic Archival Recording in accordance with EF 17440 (PLUS ES). The movable heritage register and EF 17440 are available to *employees*.
Ausgrid's S170 register	Demolition, removal or sale of heritage items on Ausgrid's S170 register (*employees*) requires 14 days written notice to NSW Heritage.
Potential heritage	Impacts to potential heritage items such as sandstone gutters, cobblestone roads or sandstone walls require a heritage assessment.

7.2.3 Exemptions

There are 3 exemptions under the *Heritage Act* that apply to our activities. The S57 exemption and Ausgrid specific exemption generally relate to minor repairs and maintenance of Ausgrid buildings. The S139 exception generally relates to maintenance and repair of underground cables. It does not apply to *relics* of State heritage significance. Some S57 exemptions require suitably qualified and experienced professional advice/work.

7.2.4 Potentially discovering non-Aboriginal heritage

a) Stop work immediately and restrict access.

b) Notify the Supervisor and Environmental Services on 02 9394 6659. Environmental Services will contact Heritage NSW if required.

c) If human remains (or suspected remains) are found during the works, secure the worksite and immediately notify the NSW Police and Heritage NSW (refer to section 10).

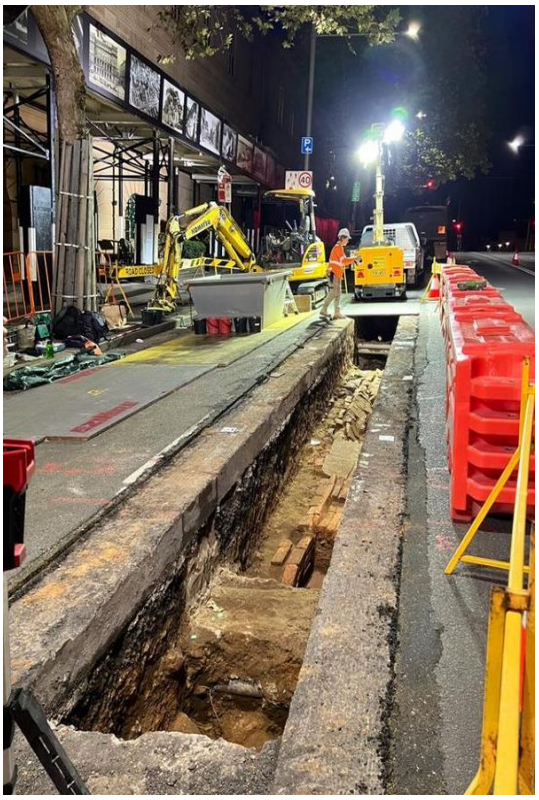
Figure 7.2-1: Examples of different classes of non-Aboriginal heritage

Potential heritage – sandstone gutter

Ausgrid movable heritage switchgear

Ausgrid S170 heritage substation. Also, Local heritage

State heritage – Potts Hill Reservoirs



Unexpected discovery of a relic.

8 RESOURCES

8.1 RESOURCE USE

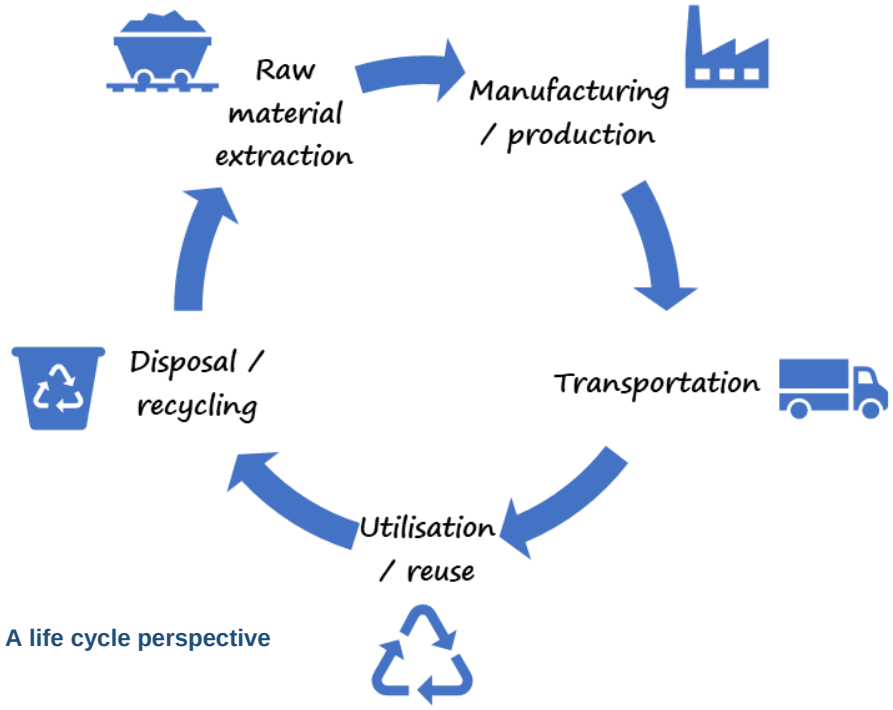
Background

Resource efficiency applies to all life cycle stages from acquisition of raw materials, design, production, transportation/delivery, use, end-of-life treatment to final disposal or re-use.

Ausgrid's sustainability policy includes a commitment to reduce dependency on using raw resources, reduce waste generation and to consider opportunities for reusing and recycling of wastes.

Benefits from resource efficiency include reducing waste, conserving energy, water and raw materials, and reducing air, water, land and noise pollution.

Resource efficiency also makes good commercial sense by increasing cost savings, reducing risk and enhancing the company's reputation.



A life cycle perspective

8.1.1 Pre-work checks

a) Check the requirements of any applicable *planning approval* or *other approvals* (refer to section 1.5).

b) When procuring products or services, *employees* should check the requirements of our sustainable procurement process (PLUS ES).

c) Consider all life cycle stages when procuring products and services.

d) Check if current recycling or reuse options are available. *Employees* can refer to the Waste Database.

8.1.2 Resource efficiency

a) Consider avoiding, reducing, reusing and recycling for all aspects of the life cycle.

b) Available methods will depend on cost, standards, contracts, internal procedures and might need specific engineering, safety or environmental advice. However, some options to consider include:

Avoid and reduce

- Use recycled materials for construction
- Use timber from sustainable sources and avoid imported timber
- Use steel and concrete with recycled content
- Select concrete from manufacturers that use non-potable (non-drinkable) water during mixing
- Use energy and water efficient appliances, fixtures, lighting, plant and equipment, such as a minimum:
  - 5 star *MEPS* (Minimum Energy Performance Standards) rating
  - 4 star *WELS* (Water Efficiency Labelling and Standards) rating.
- Source material from suppliers that are a signatory to product stewardship programs
- Design to reduce ongoing maintenance requirements and end of life hazardous materials
- Design cut and fill to minimise spoil leaving the worksite
- Reduce the quantity of Portland cement used in concrete mixes by substituting with approved industrial waste products
- Select native plant species that promote biodiversity
- Design for permeable and porous surfaces to allow for stormwater infiltration
- Use locally made products

Reuse

- When using recovered materials (such as mulch, *ENM*, *VENM* and *aggregates*), comply with applicable RROs and RREs (refer to section 5.4)
- Reuse, formwork, structural materials, fill, topsoil, plants, and turf
- Maximise the salvage of building elements and fittings on demolition projects for reuse
- Coordinate use of materials between jobs as excess materials might be suitable for other sites
- Return excess building materials and SF_6 gas bottles to the supplier
- Reuse rainwater for dust suppression, vehicle washing and irrigation

Recycle

- Keep materials segregated so they can be reused or recycled
- Recycle materials including scrap metal and cable, cable drums, paper and cardboard, street lamps and fittings, hard hats, batteries, bricks, concrete, plastics, timber, Bioguard bandages, expired first aid items and old uniforms.

8.2 WATER USE

Background

Water restrictions are sometimes imposed by water supply authorities. When a restriction is in place, water use must comply with the restrictions or be undertaken in accordance with an exemption.

Water saving rules apply when water restrictions are not in place.

The use of washbays must comply with a permit from the relevant sewerage authority and any water restrictions/exemptions that apply.

When to contact Environmental Services
02 9394 6659

a) Incidents involving water use.

b) Works cannot meet the requirements in this section of the *Handbook*.

An exemption or specific authorisation may be required.

8.2.1 Pre-work checks

a) Check if water restrictions are in place (refer to section 8.2.2), and if so, whether a water use exemption applies to the works (refer to section 8.2.4).

b) Check the water saving rules relevant to the water supply authority (water use).

c) When using washbays, check the signage for requirements. If required, check the conditions of the relevant trade waste permit.

8.2.2 How to find water restrictions

a) Check the relevant water supply authority's website below for the most up to date information:

- Sydney Water
- Central Coast Council
- Hunter Water (includes areas of Cessnock, Lake Macquarie, Maitland, Newcastle, Port Stephens, and small parts of Singleton)
- Singleton Council
- Muswellbrook Shire Council
- Upper Hunter Shire Council.

8.2.3 When no water restrictions are in place

When there are no water restrictions, then check if there are any water saving rules relevant to the water supply authority (refer to websites in section 8.2.2). For potable (drinkable) water use, water savings rules generally include:

a) Use trigger nozzles for watering.

b) Water gardens only before 10am and after 4pm.

c) No hosing of hard surfaces such as paths, concrete or other paved surfaces except for health, safety, emergency or construction.

d) Use a bucket, watering can, or hose fitted with a trigger nozzle to wash vehicles.

The use of recycled water and bore water are generally exempt from water saving rules.

8.2.4 When water restrictions are in place

For potable (drinkable) water use during water restrictions:

a) Comply with the water restriction unless working under an exemption. Restrictions will typically limit when, why and how water can be used.

If working under a water use exemption:

b) Undertake exempt activities in accordance with the conditions of the exemption.

c) Have the exemption and authorisation permits at the worksite.

d) Display the water exemption sticker at the worksite.

The use of recycled water and bore water are generally exempt from water restrictions.

Example of water exemption sticker

8.2.5 Using washbays

Water restrictions (refer to section 8.2.4) could restrict the use of washbays if they are connected to a drinking water supply.

Use of washbays needs to comply with the permit from the relevant sewerage authority. Typical requirements include:

a) Only wash water is to enter the washbay drain (no oil, hydraulic fluid or degreaser).

b) Use only ‘quick break’ detergents to ensure oil in the water can be quickly separated, allowing the plate separator to work effectively.

c) Clean up oil and chemical spills and leaks immediately using spill absorbents.

d) Remove debris from the washbay slab and drain after each use and appropriately dispose (refer to section 5.3.6).

Washbays using recycled water are generally exempt from water restrictions and water saving rules

Only use ‘quick break’ detergents in washbays

9 ENVIRONMENTAL INCIDENTS

Background Penalties apply if certain incidents are not immediately reported to the regulator.

Fines for individuals are up to $500,000 and a further $120,000 for each day the offence goes unreported.

Certain incidents need to be immediately reported to the regulator

Definitions **IPART** is Independent Pricing and Regulatory Tribunal NSW.

Sensitive areas are specific to the type of incident and include areas described in sections 3.3 Pesticides, 4.2 Noise, 6.1 Vegetation, 6.2 Wildlife, 7.1 Aboriginal heritage and 7.2 Non Aboriginal heritage.

Pollution incidents

a) Any sediment runoff into a *sensitive area*, drain, *waterway* or private property.

b) Any volume of oil, fuel or other chemical spilled in a *sensitive area*, drain or *waterway*.

c) Any spill that contains hazardous materials such as *PCB, pesticides,* or mercury (refer to HS014-P0100 (PLUS ES)).

d) Any leaks from underground infrastructure (such as tanks and cables).

e) An oil, fuel or other chemical spill of more than 20L in any location (including in bunds, pits etc).

Other environmental incidents

a) Encountering unexpected contamination.

b) Unauthorised damage to *Aboriginal cultural heritage* or *non-Aboriginal heritage* items.

c) Unauthorised harm to vegetation or *ecologically sensitive areas*.

d) Illegal waste disposal.

e) Works without or not in accordance with the *EIA* or *other approvals*.

f) Complaints (including noise) that are likely to involve the environmental regulator.

g) Harm to wildlife or their habitat.

h) Supply or receipt of *recovered materials* not in accordance with the RRO or RRE.

i) *Pesticides* harming non-target species.

j) Medical implant interference due to exposure to *EMF* or *RF*.

k) Water use not in accordance with water restrictions.

l) SF_6 leaks > 5kg.

m) Any other incidents with environmental regulator involvement.

In the case of an incident, *employees* must immediately contact Environmental Services on 02 9394 6659 or 0412 070 574 (24 hours). Environmental Services will assist and report to the relevant authorities as required.

All *workers* must manage and report spills in accordance with the spill response procedure (refer to section 9.1.2).

9.1.1 Authority notifications

Several laws require certain types of incidents to be notified to the relevant authority as shown in Table 8.2-1. There are severe penalties for failing to notify.

Employees should immediately attempt to notify Environmental Services on 02 9394 6659 or 0412 070 574 (24 hours).

If Environmental Services can't be reached, then the relevant authority should be notified in accordance with required timeframes. Ensure that any information provided to the authority is factual and without speculation. It is alright to say, "I don't know".

Table 8.2-1: Authority notifications

Type of incident	When notification is required
Pollution	Pollution incidents that have or will cause material harm to the environment must be notified immediately to the *EPA*, Ministry of Health, SafeWork NSW, Local Council and Fire and Rescue NSW.
Scheduled PCB spill	*Scheduled PCB* spills must be notified immediately to the *EPA*. Other *PCB* spills at Ausgrid's Homebush depot must be notified as soon as practicable to the *EPA*.
Land contamination	Land or groundwater contamination that exceeds levels as set out in *EPA* guidelines (testing could be required) must be reported to the *EPA*.
Breach of Planning Code	A breach of the Planning Code (for example, incorrectly prepared *EIA*) that results in a material adverse impact on the environment must be immediately reported to *IPART*.
Breach of the National Parks protocol for works in national park estate	Breaches of the National Parks protocol and consent must be reported to *NPWS*.
Aboriginal heritage finds	Suspected *Aboriginal cultural heritage* finds must be reported to *NPWS*.
Non-Aboriginal heritage finds	Suspected *non-Aboriginal heritage* finds must be reported to NSW Heritage.
Threatened species	Harm to Commonwealth threatened species must be reported to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW).

9.1.2 Spill response procedure

a) Assess the worksite and use appropriate *PPE*. Additional *WHS* requirements may apply. Refer to the *SWMS*, *SDS* and advice from your safety advisor. *Employees* can use ChemAlert.

b) Prevent unauthorised access.

c) Eliminate all ignition sources (eg engines and live electrical equipment).

d) Assume oil from pre-1997 equipment is contaminated with *PCBs* unless known otherwise.

e) Stop the flow from the source (eg closing valves, applying sealant to the leak, power down the hydraulic pressure).

f) Stop the spill from entering drains, *waterways*, or ducts as follows:

- place barriers around the source (eg particulate, socks, pads, sand bags)
- divert the spill into another container or an area where it can be contained
- place barriers (eg absorbent socks, pads or sand bags) around drains, *waterways*, ducts etc
- prevent the spill spreading on water by placing floating booms or absorbent socks on the water.

g) Act in accordance with relevant emergency plans and procedures.

h) *Employees* can contact Environmental Services on 02 9394 6659 or 0412 070 574 (24 hours).

i) Get help if the spill cannot be contained, or if oil has escaped into drains, *waterways* or roadways by calling NSW Fire and Rescue on **000 or 112** (from mobiles).

j) For spills from pre-1997 oil filled equipment, check for *PCBs*. *Employees* can check the PCB register or arrange tests with Ausgrid's Chemical Testing on 02 9410 5117.

k) For additional clean up material, *employees* can contact the nearest Ausgrid spill response trailer.

l) For pollution incidents, *employees* must immediately notify Environmental Services on 02 9394 6659 or 0412 070 574 (24 hours).

If Environmental Services cannot be reached, notify the EPA on 131 555 for spills caused harm or have the potential to cause harm to the environment.

m) Use a broom to work the powder absorbent into the spill for final clean up (refer to section 2.3.9).

n) Remove oil from behind floating booms or barriers.

o) Minimise the amount of waste created by preventing the spread of oil.

p) Ausgrid *employees* should contact Aqueous Waste Services for removal of liquid waste on 02 9269 7517 or after hours on 02 8569 6712.

q) Dispose of contaminated spoil, absorbent products and other materials in accordance with waste requirements (refer to section 5.3).

r) Maintain and replace on-site spill response controls until the environmental risk is removed.

s) Restock spill kits. *Employees* can refer to EFS 022 Oil spill kits (PLUS ES) for stockcodes.

10 EMERGENCY CONTACT NUMBERS

Environmental Services **0412 070 574 (24 hours)**

Issue	Contact	Contact details
Incidents and emergencies		
Emergency Services	Police, Fire, Ambulance or *Hazmat* Response Unit	000 | 112 (from a mobile)
	NSWRFS (Bushfire Information Line)	1800 679 737
	State Emergency Services (SES) – Floods and storms	13 25 00
Reportable pollution incidents *Employees* must contact Environmental Services in the first instance	EPA	131 555 (24 hours)
	SafeWork NSW	13 10 50
	NSW Fire and Rescue	1300 729 579 (not for emergencies)
	Public Health Unit	1300 066 055
	Local council	Local government directory
Discovery of Aboriginal cultural heritage or Non-Aboriginal heritage items *Employees* must contact Environmental Services in the first instance	Heritage NSW	02 9873 8500
Illegally dumped waste *Not an emergency or immediate threat to human health or the environment*	EPA	RID Online
Ausgrid		
Emergencies	Contact Centre	13 13 88 (24 hours)
Enquiries	Contact Centre	13 13 65
Environmental issues	Environmental Services	0412 070 574 (24 hours) 02 9394 6659 environmentalservices@ausgrid.com.au
Safety	On call Health and Safety team	02 9585 5850 (24 hours) health&safety@ausgrid.com.au
Building and grounds maintenance	PropertyOneCall	02 9275 4485 or 1300 306 541 (24 hrs) propertyonecall@ausgrid.com.au
Hazardous materials Asbestos Register, newly identified asbestos, NS211 or lead enquiries, sampling, *asbestos in soil*, illegal dumping on Ausgrid property	Senior Project Officer – Hazmat	0417 295 157 Hazmat@ausgrid.com.au
Media enquiries	Media	02 9966 7985 (24 hours) news@ausgrid.com.au
Mercury waste For undamaged waste mercury vials or chambers	Supply Chain Coordinator	02 9160 6808 Reclamation

Issue	Contact	Contact details
SF_6 cylinder purchasing/disposal	Homebush Workshop	02 9394 6801
Pumping water	Aqueous Waste Services	02 8569 6712 (24 hours)
PCB disposal	Supply Chain Operations	02 9160 6808 Reclamation
Security	Security Operations	02 9269 2266 security.operations@ausgrid.com.au
Waste disposal	PropertyOneCall	02 9275 4485 or 1300 306 541 (24 hrs) propertyonecall@ausgrid.com.au
Other external contacts		
Agriculture, biosecurity, pests, weeds and diseases	Local Land Services Department of Primary Industries	1300 795 299 02 6391 3100 Full DPI Contacts
Bee (honeybee) swarms and hives	Local amateur beekeepers (low risk situations) Professional beekeepers (high risk working at heights)	www.beekeepers.asn.au/swarms Sydney Bee Rescue (network wide) 0410 440 042 sydneybeerescue@gmail.com
Hollow bearing trees	*NPWS* Area Office	National Parks - Ausgrid area contacts
Injured native wildlife All NSW	*WIRES*	1300 094 737 (24 hours)
Greater Sydney Metropolitan Area	Sydney Metropolitan Wildlife Service	02 9413 4300 (24 hours)
Central Coast	Wildlife Animal Rescue Care	02 4325 0666 (24 hours)
Newcastle, Lake Macquarie, Cessnock and Maitland	Hunter Wildlife Rescue	0418 628 483 (0418 NATIVE) (24 hours)
Local council issues	Relevant Local council	Local government directory
Local fire authority	*NSWRFS* Information line *FRNSW* (Fire and Rescue)	1800 679 737 (1800 NSW RFS) 1800 422 281 | 02 9265 2999 (000/112 for emergencies)
PCB testing	Ausgrid's Chemical Testing	02 9410 5117 tim.yang@ausgrid.com.au
Port Authority of NSW	Sydney Harbour, Port Botany & Newcastle Port	02 9296 4962 (24 hours) enquiries@portauthoritynsw.com.au
Powerful owls	Birdlife Australia	03 9347 0757 powerfulowl@birdlife.org.au
Water & sewer mains, water restrictions	Upper Hunter Shire Council Muswellbrook Shire Council Singleton Council Hunter Water Central Coast Council Sydney Water	02 6540 1199 (24 hours) 02 6549 3700 (24 hours) 02 6578 7290 (24 hours) 1300 657 000 (24 hours) 1300 463 954 (24 hours) 13 20 90 (24 hours)

11 GLOSSARY

Term	Definition
Aboriginal cultural heritage	Includes objects and places. Objects provide physical evidence of the use of an area by Aboriginal people (for example, stone, wood and shell artefacts). Examples of Aboriginal objects are shown in Figure 7.1-1. Places are areas of land that have special significance to Aboriginal people (for example, spiritual, historical, social, educational, and natural resource use).
Aboriginal cultural heritage sensitive areas	Areas listed in section 7.1.
ACM	Asbestos containing material, which is any material or part of a thing that, as part of its design, contains asbestos. Products that contain asbestos are considered as being either *friable asbestos* or *non-friable asbestos.*
ACMA	Australia Communication and Media Authority
ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail
Agricultural land	Land used for broad acre cropping, pasture, horticulture, growing fruit or keeping livestock.
AGVET Code	Australian Agricultural and Veterinary Chemicals Code
AHIP	Aboriginal heritage impact permit
APVMA	Australian Pesticides and Veterinary Medicines Authority
ARPANSA	Australian Radiation Protection and Nuclear Safety Agency
Articles	Includes equipment (such as transformers and switchgear).
Asbestos in soil	Soil contaminated with asbestos or inappropriately buried asbestos. This does not include asbestos conduit, joint boxes and troughing installed in accordance with Ausgrid's Network Standards.
Asbestos Register	An Ausgrid register that identifies work locations where asbestos could be present and details what could be found at a location.
Asbestos removal work	Works involving the removal of asbestos or *ACM*, including removal by an independent *LAR*.
ASP	accredited service provider, authorised with Ausgrid in the appropriate level and class to undertake design or contestable work on or near Ausgrid's network.
ASS	acid sulfate soils
ASSMP	An acid sulfate soil management plan prepared in accordance with the NSW ASS Manual and ASS Assessment Guidelines.
Biosecurity	Measures to measures to prevent weeds, pests and pathogens threatening the economy and environment.
Blue Book	Managing Urban Stormwater – Soils and Construction (Volume 1)
Bushfire Danger Period	Typically runs from 1 October to 31 March but could vary.
Bushfire prone land	Land identified by local council which can support a bushfire or is vulnerable to bushfire attack. *Bushfire prone land* maps are certified by the Commissioner of the *NSWRFS*.
CCA	Copper Chrome Arsenic (common wood preservative).
CEMP	Construction environmental management plan. These typically apply to projects requiring an *REF, DA, SIS* or *EIS*. It details conditions of approval and procedures for compliance (such as auditing, training, incident response).

Term	Definition
Clause 6 exemption	A specific exemption relating to 'Services and utilities—construction, essential repairs or maintenance'. It must be gazetted within the *TOBAN* order on the day and contains certain conditions such as having adequate firefighting equipment and notifying *NSWRFS* or *FRNSW*.
CLC	consumer load control
Clear business day	A day other than the weekend or a public holiday and does not include the notification date or the date of works commencing.
cm	centimetre
CRA	Conservation risk assessment which is required prior to undertaking maintenance works in national park estate.
DA	Development Application
DCP	A local council's Development Control Plan.
Determination	The decision to proceed based on the *EIA*.
DG	Dangerous Goods - Solids, liquids, or gases that can harm people, other living organisms, property or the environment, and include *scheduled PCBs* in accordance with the ADG Code.
Disturbed land	Land that has been the subject of human activity that has clear and observable changes to the land's surface. Examples of activities that could have *disturbed land* include soil ploughing, construction of roads, trails and tracks or buildings, installation of utilities, clearing of vegetation and substantial grazing. Refer to Figure 7.1-3 and Figure 7.1-4 for examples.
Domestic use criteria	For *pesticide* use to be considered domestic, it must meet the criteria in section 3.3.
DPI	NSW Department of Primary Industries
Ecologically sensitive areas	Refer to section 6.1.
EHC Act	NSW *Environmentally Hazardous Chemicals Act*
EIA	Environmental impact assessment (*SER*, *REF*, *SIS* or *EIS*) required under Part 5 and 5.1 of the EP&A Act.
EIS	Environmental impact statement that is prepared for proposals that are likely to significantly affect the environment. *EISs* are submitted to the NSW Minister for Planning for approval.
EME	electromagnetic energy
Emergency works	Restoration activities required to protect public safety or the environment due to a sudden natural event or an accident.
EMF	electric and magnetic alternating at 50Hz. Electric fields are measured in volts/metre (V/m). Magnetic Fields are typically expressed in *μT* or *mG*.
Employee	Ausgrid or PLUS ES employee.
EMR	electromagnetic radiation
EMS	environmental management system
ENM	Excavated natural material which is naturally occurring rock and soil that has been excavated from the ground and contains at least 98% (by weight) natural materials and meets the chemical and other criteria detailed in section 5.4.
Environmentally sensitive areas	Defined in the mulch RRO and includes *ecologically sensitive areas* described in section 6.1.

Term	Definition
EP&A Act	NSW *Environmental Planning & Assessment Act*
EPA	NSW Environment Protection Authority
EPC	environmental planning calculator
EPL	environmental protection licence
ESCP	A site-specific erosion and sediment control plan prepared in accordance with the *Blue Book* (Managing Urban Stormwater – Soils and Construction (Volume 1).
EWMS	environmental work method statement
Exempt development	Development that does not require an *EIA* or *planning approval*, providing the works meet certain conditions.
Feasible and reasonable	Involves assessing the overall noise benefit of the identified work practices and controls that can be implemented for an activity against the overall adverse social, economic and environmental effects, including the cost of mitigation.
Friable asbestos	Any material that contains asbestos and is in the form of a powder or can be crumbled, pulverised or reduced to powder by hand pressure when dry.
FRNSW	NSW Fire and Rescue Services
GHS	Globally Harmonised System of Classification and Labelling of Chemicals.
HAC	hazard assessment conversation
Handbook	NS174C Environmental Handbook for Construction and Maintenance (this Handbook).
HAZCHEM	hazardous chemicals
Hazmat	hazardous materials (such as asbestos, mercury, lead).
High field work environments	Areas where *EMF* could exceed the public reference levels (typically high current carrying equipment and conductors). Examples of *high field work environments* are shown in section Figure 4.3-1.
High impact activities	Includes using beeper style reversing alarms, saw-cutting, vibratory rolling, grinding, rock breaking, jack hammering, asphalt milling or profiling, underboring/directional drilling and impact piling.
Hot works	Any process involving grinding, welding, brazing, oxy cutting, heat treatment, heat shrinking or other process that generates heat or sparks that can increase the risk of fire or explosion near flammable/combustible materials. For excluded activities, *employees* can refer to HS008-P0600 Hot Work (PLUS ES).
HSMS	Health & Safety Management System
Hz	hertz
IBC	intermediate bulk container
ICNIRP	International Commission on Non-Ionising Radiation Protection
Indicators of ASS	Include indicators listed in section 5.2.
Indicators of contaminated land	Include indicators listed in section 5.1.
IPART	Independent Pricing and Regulatory Tribunal NSW
kg	kilogram
LAA	An external independent Licensed Asbestos Assessor.
LAR	An external independent Licensed Asbestos Removalist.

Term	Definition
LCD	lead containing dust
Live works	Works on exposed mains and apparatus that are energised.
m	metre
MEPS	Minimum Energy Performance Standards
mG	milligauss
mm	millimetre
µT	Microtesla, which is a unit of measurement of the strength of a magnetic field.
NMP	A site-specific noise management plan.
Noise impacted	Represents the level above which there could be some community reaction to noise. For *standard operating hours* this is Rated Background Level + 10 dB(A) with a strong community reaction to noise > 75 dB(A). For *out of hours work* this is Rating Background Level + 5 dB(A).
Non-Aboriginal heritage	Includes *relics*, items, buildings and places that are valued because of their historical, archaeological, cultural or architectural significance.
Non-destructive digging	Includes hand digging or air or hydro vacuum excavation, retaining tree roots where possible.
Non-friable asbestos	Material containing asbestos (other than *friable asbestos*), including material containing asbestos fibres reinforced with a bonding compound. Its condition can degrade and become *friable asbestos* over time or following an incident such as a fire.
Non-scheduled PCBs	Material that has a *PCB* concentration > 2ppm and < 50ppm.
NPWS	NSW National Parks and Wildlife Service
NSW	New South Wales
NSWRFS	NSW Rural Fire Service
NTU	Nephelometric turbidity unit, is the unit of measurement of a liquid's *turbidity*.
Other approvals	Approvals that exist outside of the EP&A Act and may be required despite the *planning approval* or despite being *exempt development.*
Out in the open	Excludes areas which are devoid of bushland and/or natural fuel loads, such as within pits and trenches, or within the confines of built structures such as inside buildings, workshops or basements.
Out of hours work	Activities undertaken outside of *standard operating hours*.
PCB	polychlorinated biphenyls
PCB free	Material that has a *PCB* concentration ≤ 2ppm.
PCB licence	The licence issued under the EHC Act.
PCB material and waste	Includes oil, equipment, rags, oil absorbent products and soils that are contaminated with > 2ppm *PCBs.*
Pesticides	Include herbicides, termiticides, insecticides, biocides, fungicides and baits.
PFAS	per- and poly-fluoroalkyl substances
pH	Potential of hydrogen, is a measure of the acidity or alkalinity of a solution.
Planning approval	The approval of the *EIA* to undertake certain works under the EP&A Act.

Term	Definition
Planning Code	NSW Code of Practice for Authorised Network Operators
POEO Act	NSW *Protection of the Environment Operations Act*
PPE	personal protective equipment
ppm	Parts per million (equivalent to mg/kg).
Receptacles	Include drums, containers and tanks but not equipment.
Recovered aggregates	Include crushed concrete, brick, rock, asphalt and ceramics other than refractory bricks and materials or asphalt that contains coal tar.
REF	Review of environmental factors, prepared in accordance with Part 5 of the EP&A Act and approved by Ausgrid.
Relic	Any deposit, artefact, object or material evidence that relates to the settlement of New South Wales.
Restricted pesticides	Determined by the *APVMA* to be inherently hazardous and are listed in Schedule 4 of the Agricultural and Veterinary Chemicals Code Regulations.
RF	Radiofrequency EME or EMR that continues to travel away from the source even after the source is turned off.
RFNSA	Radio Frequency National Site Archive
RID	*EPA's* Report Illegal Dumping online reporting tool.
RMP	A site or project specific risk management protocol.
RRE	Resources Recovery Exemption which applies to end users of recovered material.
RRO	Resource Recovery Order which applies to suppliers and processors of recovered material.
Scheduled PCBs	Material that has a *PCB* concentration ≥ 50ppm.
SCW	Scheduled chemical waste, which is waste that contains > 2mg/kg of certain scheduled chemicals (examples include aldrin and dieldrin).
SDS	Safety data sheet. Available to *employees* from ChemAlert.
Sensitive areas	Areas specific to the type of incident and include areas described in sections 3.3 Pesticides, 4.2 Noise, 6.1 Vegetation, 6.2 Wildlife, 7.1 Aboriginal heritage and 7.2 Non Aboriginal heritage.
Sensitive places	Include places defined as sensitive to pesticide use as listed in section 3.3.
Sensitive receivers	Include residences, education facilities, hospitals, places of worship, recreation areas or other receivers who could be highly impacted by the works. Commercial premises (such as accommodation or restaurants) may, at certain times, be considered *sensitive receivers*.
SER	Summary environmental report where impacts are "minor and neither extensive nor complex", prepared in accordance with Part 5 of the EP&A Act and approved by Ausgrid.
SF_6	sulfur hexafluoride
SIS	A species impact statement that is prepared for proposals that are likely to significantly affect threatened species or endangered ecological communities. *SISs* are submitted to the NSW Minister for Planning for approval.
SRZ	Structural root zone, which is the area where the roots provide critical structural stability for the *tree*.

Term	Definition
SWMS	safe work method statement
Standard operating hours	Unless local council policy states otherwise, are: Monday to Friday – 7am to 6pm, Saturday – 8am to 1pm, and Sundays or public holidays – no work
TfNSW	Transport for NSW
TOBAN	A Total Fire Ban order declared by the Minister or Commissioner of *NSWRFS* when bushfires are more likely to spread and cause damage.
TPZ	*Tree* protection zone, which is the area set aside for the protection of a *tree's* roots and crown to maintain the *tree's* long-term viability.
Tree	Vegetation, usually taller than 3m when mature, with a distinct trunk of circumference >0.3m at a height of 1m above the ground.
TSMP	Ausgrid's Tree Safety Management Plan.
Turbidity	A measure of a liquid's cloudiness caused by suspended particles.
UST	underground storage tank
VENM	Virgin excavated natural material, which is natural material that comes from undisturbed areas that are not contaminated and not *ASS* (refer to section 5.1 and section 5.2). More information is available on the EPA website.
Vulnerable land	Mapped areas of NSW that are especially vulnerable to soil erosion, sedimentation and landslip. It includes steep, highly erodible or protected riparian land (the interface between land and a natural *waterway*).
WasteLocate	*EPA's* online system to monitor the transport and management of waste tyres and asbestos waste within NSW.
Waterway	Includes a creek, river, canal, stormwater drain, beach, lake or lagoon.
WebGIS EL	Ausgrid's environmental geographic information system which contains spatial data for *environmentally sensitive areas/places*.
WELS	Water Efficiency Labelling and Standards
Wet-vac	A vacuum cleaner that can be used to clean up wet or liquid spills.
WHO	World Health Organization
WHS	work health and safety
Wildlife sensitive areas	Include *ecologically sensitive areas* described in section 6.1, known breeding sites, areas with tree hollows, bushrock and nests.
WIRES	NSW Wildlife Information, Rescue & Education Service Inc.
Works	Reference to 'works' in this *Handbook* means all activities related to the work, job or project. When scoping the works, consider the full area of the activities (environmental footprint), the type of plant and equipment to be used, as well as the smaller activities that make up the works such as earth works including trenching, fencing, tree trimming, access tracks, stay wires/poles, pest treatment, lighting, site compounds, construction pads.
Workers	Ausgrid and PLUS ES *employees* and contractors**.**
Zone of influence	The area next to an excavation where applying a load to the ground can affect the stability of the excavation. It extends from the base of the excavation to the surface at an angle that is dependent on the soil type.

12 REVISION HISTORY

Section	Key changes
General	Added references to *WebGIS EL*, training and PLUS ES documents throughout. Updated links, contact details, glossary and minor clarifications throughout.
Preface	New Acknowledgement of Country. New EGM message.
1.3	Added reference to Ausgrid's External Partner Code of Conduct. Added links to new online training courses.
1.5	Improved environmental planning flowchart. Defined classified roads.
2.1	Aligned section with new sediment control training. New section on sediment control devices.
2.2	Improved water discharge flowchart.
2.3	Clarified minor storage requirements for oils, fuels and other chemicals. Reference to EGN 101 Oil Spill Response Information, QR code and EFS 022 Oil Spill Kits.
3.1	Clarified asbestos transport and disposal requirements.
3.2	Added reference to new EWMS 107 PCB Sampling. Added reference to new *PCB* disposal processes. Clarified *DG* requirements when transporting ≥ 250kg(L) of Scheduled PCBs.
3.3	Added reference to new pole inspection Exemption Order.
3.4	Updated safety controls and referenced HS014-P0100 (PLUS ES).
3.5	Removed section on mercury and referenced HS014-P0100 (PLUS ES) in Table 5.3-1: Waste classification and section 9 Environmental Incidents.
4.1	Added reference to the new SF6 Cylinders App and associated procedures.
4.2	New construction noise flowchart.
4.4	Added reference to NS102 Working on or near poles with telecommunication transmitters and the Radio Frequency National Site Archive (RFNSA).
5.1	Added reference to the new EF 177 Remediation method (PLUS ES).
5.2	Improved managing acid sulfate soils flowchart.
5.3	Added reference to the new Waste Database. New section for managing dumped waste.
5.4	Clarified procedures around receiving and supplying recovered materials.
6.1	Improved managing vegetation impacts flowchart. New requirement for retaining native ground cover > 30cm. Simplified trenching requirements into a new flowchart and updated diagrams.
6.2	Added reference to *DPI* biosecurity orders.
6.3	Expanded *biosecurity* requirements to *agricultural land*.
6.4	Updated references and alignment to other Ausgrid *hot works* documents.
7.1	New figure showing *Aboriginal cultural heritage* sensitive land features. Improved assessing *Aboriginal cultural heritage* flowchart.
7.2	Added new exemptions and removed reference to Conservation Management Plans.
8.1	Added reference to the new Waste Database.
9	Added reference to mercury procedure, clarified sensitive areas.

Disclaimer

This document has been developed using information available from field and other sources and is suitable for most situations encountered in Ausgrid and PLUS ES. Particular conditions, projects or localities may require special or different practices. It is the responsibility of the local manager, supervisor, assured quality contractor and the individuals involved to adequately manage work practices in accordance with environmental legislative requirements.

Contractors and accredited service providers (ASPs) must rely on their own systems to identify all environmental risks and sources of existing or potential environmental harm and introduce measures and procedures to address these risks or sources of harm. This *Handbook* may form part of those systems.

Ausgrid disclaims any and all liability to any person or persons for any procedure, process or any other thing done or not done, as a result of this *Handbook*.

The *Handbook* does not attempt to cover work health and safety (WHS) requirements. Refer to your safety advisor for WHS requirements. Ausgrid and PLUS ES employees can refer to the Health and Safety Management System (HSMS) on The Wire.