Environmental Handbook for Construction and Maintenance

NS174C

ENVIRONMENTAL PROCEDURES SUPPLEMENTARY NOTES

JUNE 2020

Ausgrid

Revision History

Issue No.	Date	Changes
1	**Mar 2006**	New issue. Replaced EG 144 standard environmental management plan (SEMP). More user friendly and informative. Added pictures, photos and process diagrams. New housekeeping section.
2	**July 2008**	Updated with regulatory changes, new work practices and feedback provided by employees. More pictures, diagrams and tips to help identify potential environmental issues and good controls.
3	**July 2011**	New format and revised section grouping/numbering. New information on Ausgrid's environmental management system (1.1), policy (1.3), legislation (1.5), EIA worksheets (1.6) and waste tracking and licensing (4.2). New environmental inspection checklist section (8). Changed controls regarding construction noise (2.4/2.5), tree protection zone (5.1) and pathogens (5.4).
4	**July 2014**	New community relations section (1.6), pre-works summaries (most sections) and acid sulfate soil indicator (4.1). New controls for access tracks (2.1), structural root zone (5.1) and undisturbed land (6.1). Changed controls regarding stockpiling (2.1) and notification times prior to starting work (1.6, 2.4). Reference to The Wire and field tablets and other minor improvements throughout.
5	**July 2017**	Updated with regulatory changes, new format and section order, consistent call-out boxes on when to contact Environmental Services, hyperlinks to the Environmental Index and Handbook reference material, alignment of controls with the WebGIS EL, improved flowcharts and updated contacts. New sections on EMF (4.3), use of recovered materials (5.4) and wildlife around the network (6.2.4). New requirements relating to PCB labelling (3.2), mangrove permit and National Parks Protocol (6.1). New information on asbestos waste and soil from 132kV cable trenches (5.3).
6	**June 2020**	Updated with regulatory changes, new layout, new and improved flowcharts, expanded environmental planning and wildlife sections and updated contacts. New combined activity reference table and checklist. New tables listing key Acts, training and incident notifications. New sections on RF (4.4), lead (3.4) and mercury (3.5). New requirements relating to oils, fuels and other chemicals (2.3), SF6 (4.1), use of recovered materials (5.4), vegetation (6.1), total fire bans (6.4), Aboriginal cultural heritage (7.1) and non-Aboriginal heritage (7.2).

Disclaimer

This document has been developed using information available from field and other sources and is suitable for most situations encountered in Ausgrid. 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.

Non Ausgrid *workers* 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 employees can refer to the Be Safe system on The Wire.

Preface

Ausgrid's NS174C Environmental Handbook (this Handbook) is issued under the provisions of the corporate Health Safety & Environment Policy. The Handbook prescribes the minimum environmental controls for works carried out on our network.

This Handbook details the processes for planning and performing our work to comply with environmental laws.

This Handbook applies to all *workers* involved in the construction and maintenance of our network. All *workers* must comply with the requirements of this Handbook and have a copy readily accessible at the worksite.

One of Ausgrid's core values is to 'Work Safe, Live Safe'. We demonstrate this value by doing our best to protect ourselves, other people and the environment.

Junayd Hollis
General Manager
Asset Management

June 2020

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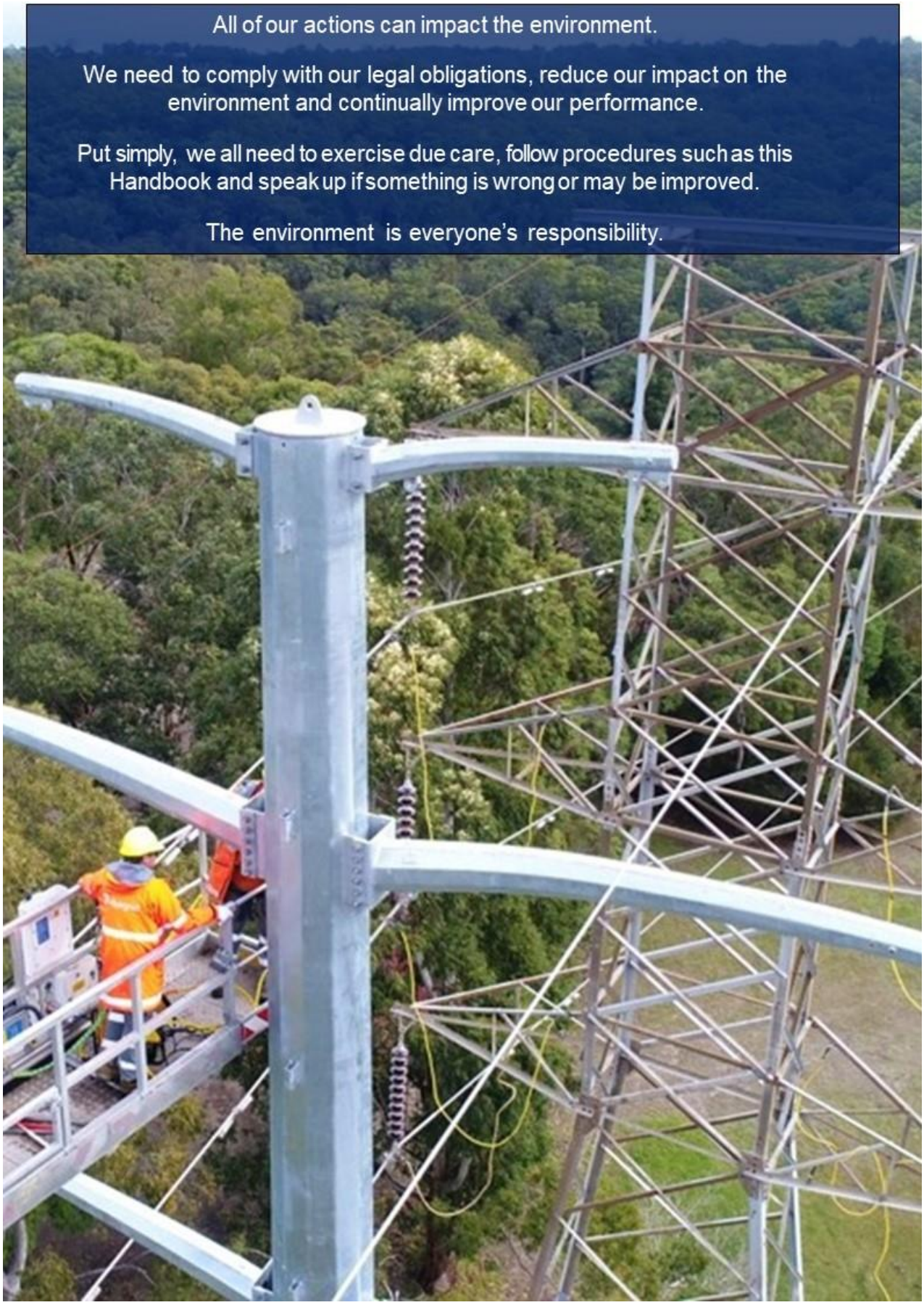

All of our actions can impact the environment.
We need to comply with our legal obligations, reduce our impact on the environment and continually improve our performance.
Put simply, we all need to exercise due care, follow procedures such as this Handbook and speak up if something is wrong or may be improved.
The environment is everyone's responsibility.

1. INTRODUCTION

Purpose

This Handbook forms part of Ausgrid's 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 our environmental risks
- prevent incidents
- 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* will override other requirements (including this Handbook) in the event of an inconsistency.

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 Ausgrid employees only and an external WebGIS EL is available to all Ausgrid *workers*.

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

Definitions

ASP is accredited service provider.

EMS is environmental management system.

Workers includes Ausgrid employees and contractors.

How to read this Handbook

Refer to the activity reference table (Table 1.1-1) to identify the applicable sections of this Handbook and familiarise yourself with the requirements for the works.

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

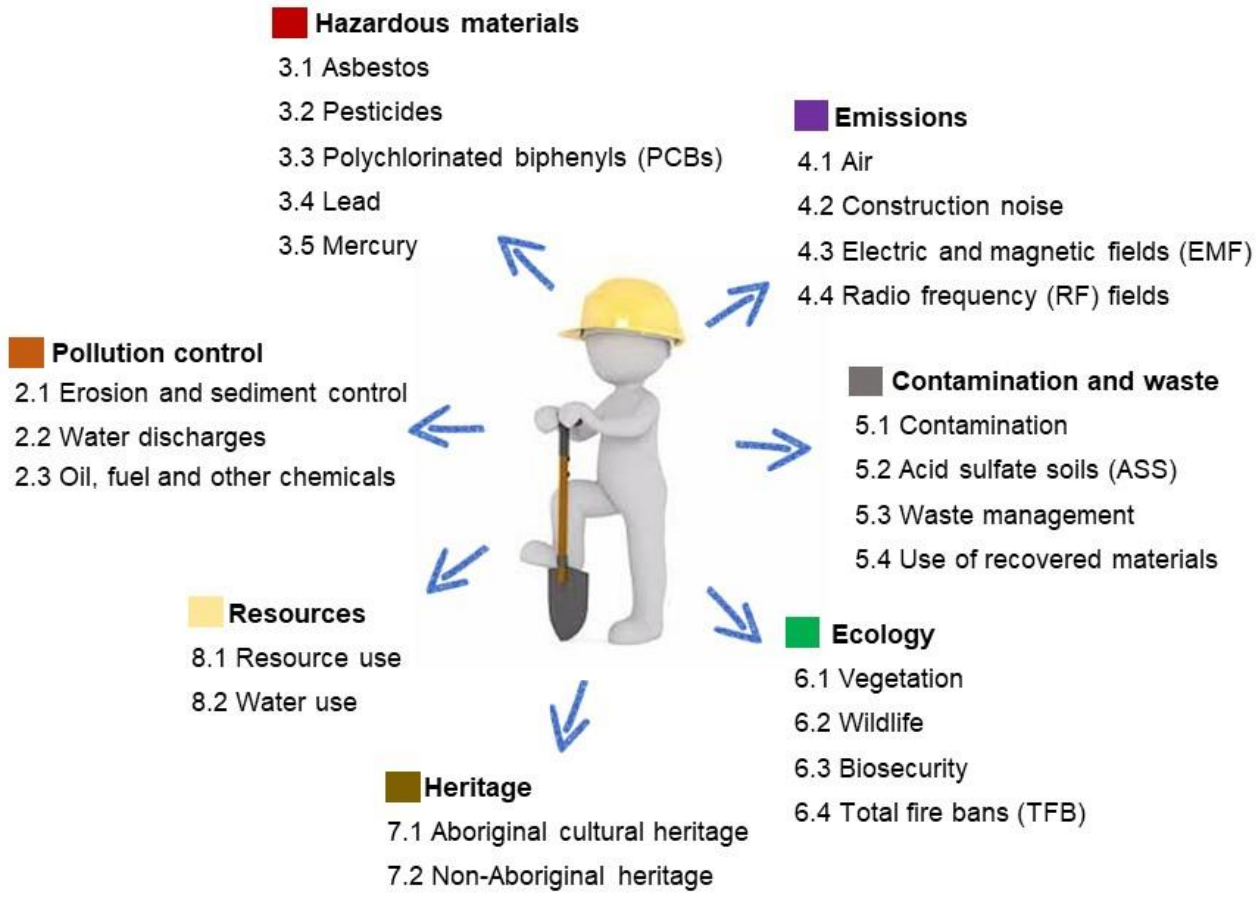
Section 1 provides an overview of Ausgrid's *EMS*, defines responsibilities, summarises key legislative requirements and explains additional documents that may apply to the works.

Sections 2 to 8 specify the environmental controls and provide guidance for all construction and maintenance works on Ausgrid's network.

Sections 9 and 10 describe what to do in the event of an environmental incident, including Ausgrid's spill response procedure, and provides a list of emergency contact numbers.

Italicised items are terms or acronyms defined within this Handbook. These are typically defined in the section that they appear and can also be found in the Glossary at the end of the Handbook.

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



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 may impact the community.	**0 Community engagement**	✓ Impacted community know what is happening, when it is happening, why it is required and who to contact.
Works requiring *planning approval*, *other approvals* or notifications / consultation.	**1.5 Environmental planning**	✓ All required *planning approvals*, *other approvals* and notifications/consultation been obtained/undertaken. There is compliance with all conditions of approval.
Excavating, disturbing soil, concrete cutting or creating sediment.	**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 in substations, pits or trenches.	**2.2. Water discharge**	✓ Water discharges from pits, trenches and substations meet the required discharge criteria.
Handling, storing, transporting or disposing 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, waste tracking, and disposal requirements.
Handling oil and equipment that contains *PCBs*.	**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* applications restricted to target areas, approved for use, used in accordance with the label and with required training, record keeping, notification and signage.
Disturbing known or 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.
Handling mercury containing equipment.	**3.5 Mercury**	✓ Mercury stored and transported in a labelled, leak proof and airtight container and disposed/recycled in accordance with legal requirements.
Generating fumes from vehicles or machinery, using *SF6*, or generating dust?	**4.1 Air**	✓ Controls adequate to prevent dust, fumes and other gases from leaving the worksite or substation.
Noisy works or works outside of *standard operating hours*.	**4.2 Construction noise**	✓ Controls adequate to minimise construction noise impacts (eg scheduling, equipment, awareness, site layout). Works compliant with the notification and *out of hours work* requirements.

Activity	Section	Checklist
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 been undertaken where *workers* with medical implants or who are pregnant work in *high field work environments* or close to antennas.
Works on known or suspected contaminated land.	**5.1 Contamination**	✓ Suspected contaminated land been reported to Environmental Services and *workers* are aware of requirements for any known contaminated land.
Works 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 and corrosion.
Generating, transporting, storing or disposing of waste.	**5.3 Waste management**	✓ Wastes appropriately classified, handled, stored, transported and disposed and in compliance with licence and waste tracking requirements.
Receiving or supplying *VENM*, *ENM*, *recovered aggregates / fines*, 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, etc).	**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* and *TPZ* controls implemented.
Working near wildlife or wildlife habitat (native vegetation, bush rock, tree hollows etc).	**6.2 Wildlife**	✓ Controls in place to prevent the unauthorised harm to wildlife, *ecologically sensitive areas* including threatened species, hollow bearing trees, nests and bushrock.
Working in 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 *TFB*?	**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 *TFB* are compliant with exemptions.
Working near heritage or where heritage items may 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

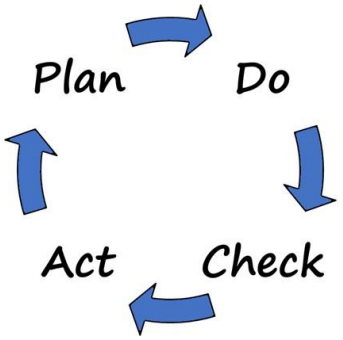
Background

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

Ausgrid's *EMS* is certified to the 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 the entire system.



At a project level the 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

Plan

a) Identify and obtain the required planning approval and other approvals (refer to **s1.5**).

b) Think about the site, type of works, weather, neighbours, environment, project controls, emergency controls and what could go wrong.

c) Understand your environmental responsibilities (refer to **s1.3**).

Do

d) Have the *planning approval*, *other approvals* and this Handbook accessible on site.

e) Implement the controls (refer to **s1.5**).

f) Discuss the environmental risks and controls as part of the HAC**.**

g) Promptly respond to incidents (refer to **s10**).

Act

i) Act if something is not right or could be improved (refer to **s1.3**).

j) Contact Environmental Services if required by this Handbook or if assistance is required.

Check

h) Monitor the works, changes in conditions and controls (refer to the checklist in **Table 1.1 1**).

1.2. LEGISLATION

Background

There are over 50 environmental laws that relate to Ausgrid's activities. The laws are designed to protect the environment and can either prohibit, restrict, control or authorise certain activities.

Definitions

EIA is environmental impact assessment.

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

EPA is the NSW Environmental 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 Ausgrid *workers* to:

- follow the correct environmental *planning approval* process
- no 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. Ausgrid is 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

Severe penalties can be imposed for failing to comply with environmental laws:

- up to $10.5 million for a corporation
- up to $1 million 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 organochloride *pesticides*
Fisheries Management Act	Marine vegetation (eg sea grass, mangroves) 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
Marine Estate Management Act	Marine parks and aquatic reserves
National Greenhouse 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

Background

Ausgrid's Code of Conduct outlines the standards and behaviours that are expected of all Ausgrid *workers*. The Code includes our Environmental Code of Conduct (Green Rules).

Breaches of this Code may result in disciplinary action.

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 section 1.3.3 and 1.5).

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 may 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
ET 014	Environmental Management & Sustainability Induction	New *workers* as part of Ausgrid's induction process	MyLearning Contractors: training@ausgrid.com.au
ET 002 (or SE1000/ RF0003)	Environmental Awareness training (Environmental Procedures – NS174)	Environmental Handbook training for all *workers* who work on or near Ausgrid's network	MyLearning Contractors: training@ausgrid.com.au
ET 005	Summary Environmental Report (*SER*) training	Electrical designers and others (including *ASPs*) who prepare and verify *SERs* (refer to section 1.5.2)	environmentalservices@ausgrid.com.au
ET 019	Water discharge training	Employees who supervise discharges through filter bags (refer to section 2.2.5)	environmentalservices@ausgrid.com.au
ET 008	Oil spill response training	Employees who regularly handle, transport or store oil (refer to section 2.3.2)	environmentalservices@ausgrid.com.au
SSAB1001	Asbestos awareness training	*Workers* who work on or near Ausgrid's network	MyLearning Contractors: training@ausgrid.com.au
SSAB2001	Working with Asbestos Containing Materials (ACM)	*Workers* who work with *ACM*	MyLearning Contractors: training@ausgrid.com.au
SSAB300X	Task specific asbestos training	*Workers* who work with *ACM* and perform specific tasks	MyLearning Contractors: training@ausgrid.com.au
ET 047	Organochloride *pesticides* awareness training	Employees handling spoil from 132kV cable trenches (refer to section 5.3.7)	environmentalservices@ausgrid.com.au
HSEWG – PLAN/ASP/ VEG/MAIN	WebGIS Environmental Layers (reporting tool)	Electrical designers, *ASPs*, vegetation contractors and *workers* who need to use the WebGIS EL reporting tool	MyLearning Contractors: training@ausgrid.com.au
NA	*EPA* approved pesticide use training	*Workers* applying *pesticides* that meet the commercial use criteria (refer to section 3.3.4)	TAFE
NA	Ausgrid recognised tree trimming course	Vegetation maintenance contractors (refer to section 6.1.6)	TAFE
NA	Project specific inductions	This will be specified in the *planning approval* and/or *other approvals* (refer to section 1.5)	Project manager

1.4. COMMUNITY ENGAGEMENT

Background

Working closely with residents, businesses, councils and other groups can reduce the duration and cost of work to benefit both Ausgrid and the community.

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

Working with the community can minimise disruption

1.4.1. Where to get more information

Ausgrid employees can find more information on our approach to community engagement in the Community Engagement Handbook, which forms part of Ausgrid's Community Engagement System.

The Community Engagement System includes a wide range of procedures and tools to help you plan and carry out community engagement in line with Ausgrid's 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 *EIA* (refer to section 1.5).

b) Check the requirements of any applicable community engagement plan (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 consultation/notification 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*.

It is an offence not to obtain and comply with conditions of *EIAs* and *other approvals,* where these are required.

Environmental impacts must be considered before proceeding with an activity

When to contact Environmental Services
02 9394 6659

a) Missing, inadequate or non-compliances with *planning approvals*.

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

c) Level 3 impacts are triggered when preparing an *SER*.

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

Definitions

CEMP is a construction environmental management plan. These typically apply to projects requiring an *REF, SIS* or *EIS*. It details conditions of approval and procedures for compliance (eg 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 have a significant effect on the environment.

EPC means Ausgrid's environmental planning calculator.

Exempt development means development that does not require an *EIA* or *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*.

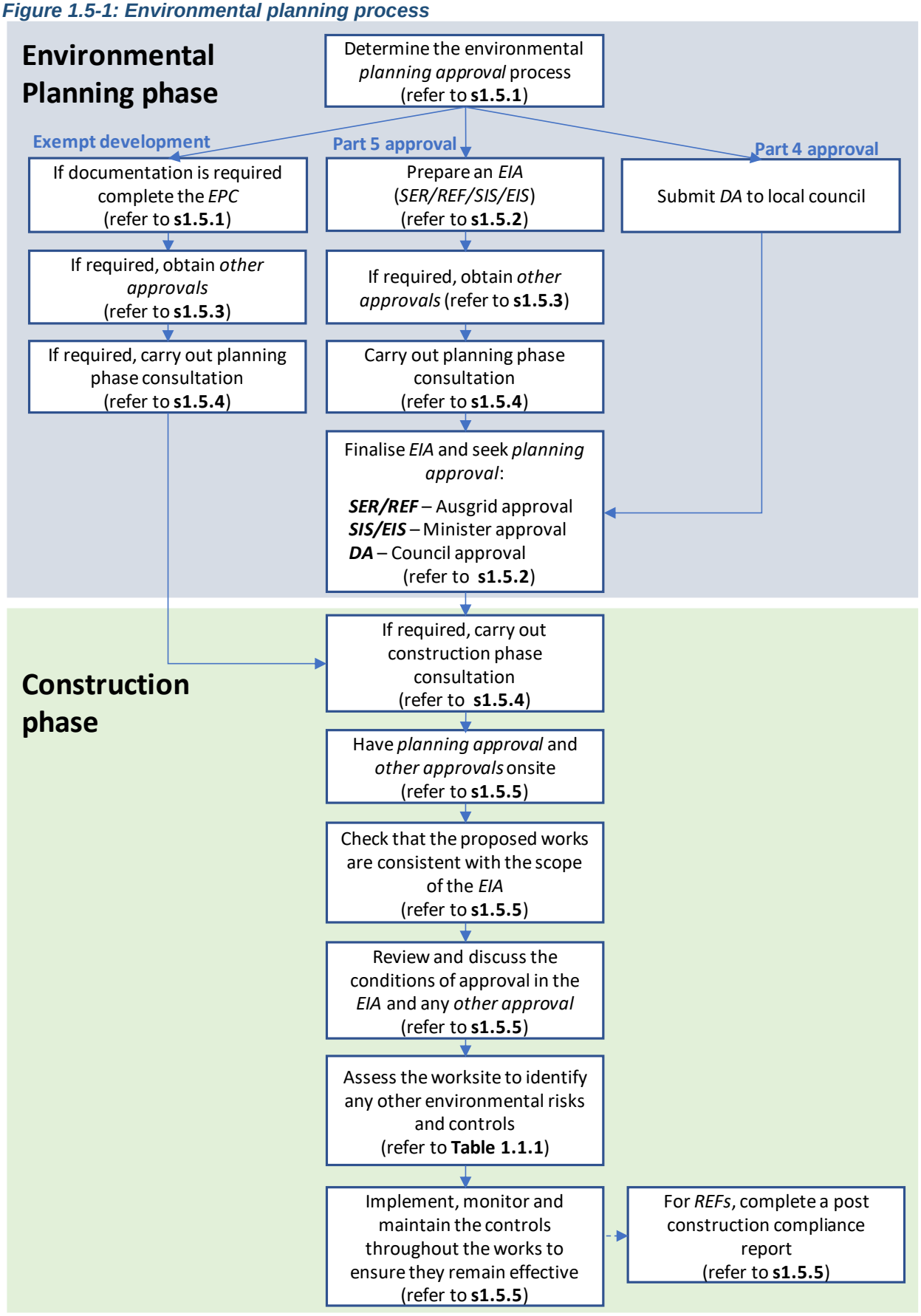
Planning approval means the approval of the *EIA* or *DA* to undertake certain works under the EP&A Act.

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, prepared in accordance with Part 5 of the EP&A Act and approved by Ausgrid.

SIS is a species impact statement that is prepared for proposals that are likely to have a significant effect on threatened species or endangered ecological communities.

Figure 1.5-1: Environmental planning process

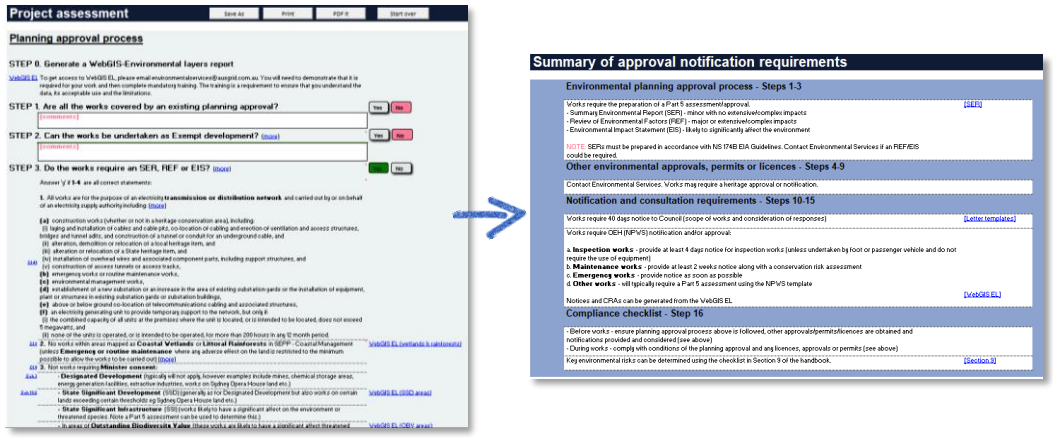


1.5.1. Determining the planning approval process

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

a) Where the approval process is unclear or if documentation is required, use the Environmental Planning Calculator (EPC) to determine:
   - the *planning approval* process (ie *exempt development*, *SER, DA*)
   - the need for *other approvals* (including licences and permits) – refer to section 1.5.3
   - consultation and notification requirements – refer to section 1.5.4.

b) Use the scope of work (including associated activities) and the WebGIS EL links in the EPC to answer the questions.
   - Where required, save the EPC as documented evidence of the decision.



Environmental planning calculator (EPC)

1.5.2.Preparing an EIA

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

b) SER training is required to prepare an *SER*.

c) Discuss the process for preparing an *REF*, *SIS*, *EIS* or *DA* with Environmental Services on 02 9394 6659.

d) Obtain *planning approval* from the relevant authority (refer to Table 1.5-1).

Ausgrid's Environmental Planning website

Table 1.5-1: Different planning approval processes

Planning approval process	Level of impacts	Typical projects	Planning approval authority	Other approvals, consultation / notifications	Conditions of approval
Exempt development (Class 2)	Defined by a planning instrument as "minor impact"	Routine repairs and maintenance	NA	Potentially (refer to **s1.5.2** and **s1.5.3**)	*Other approvals* (if required) and this Handbook*
Part 5 SER (Class 3)	Assessed as "Minor and neither extensive or complex"	New distribution works	Ausgrid (or public authority) *determination*	Yes (refer to **s1.5.2** and **s1.5.3**)	*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 **s1.5.2** and **s1.5.3**)	*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 **s1.5.2** and **s1.5.3**)	*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 **s1.5.2** and **s1.5.3**)	*DA* approval and *other approvals* Works must also comply with this Handbook*

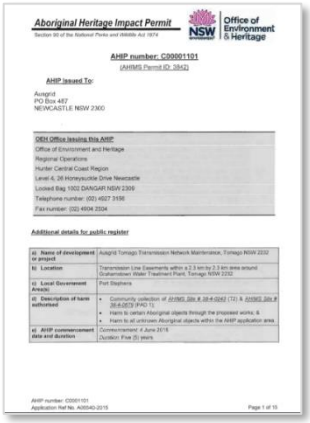
* Where there is an inconsistency between the *planning approval*/*other approvals* and requirements in this Handbook, the *planning approval*/*other approvals* will prevail.

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
- new infrastructure within mine subsidence areas
- working on or impacting *non-Aboriginal heritage* items
- working on a classified road.


Aboriginal Heritage Impact Permit

NSW Office of Environment & Heritage

AHIP number: C0000101

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.

A full list of approvals, licences, permits and exemptions can be found in the EPC.

1.5.4. Consultation and notification requirements

Consultation and notification may be required under various Acts and Regulations. Whether these are required for projects 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 repairs, maintenance and *emergency works*
- excavating roads and footpaths
- installing new substations
- upgrading existing substations
- impacting local 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 and inspection works in National Parks (refer to section 6.1.4).


NSW Office of Environment & Heritage

Ausgrid

Protocol between: Chief Executive of the Office of Environment and Heritage and Chief Executive of Ausgrid

For: Procedures for the undertaking of inspection, maintenance and emergency works on Ausgrid network assets and associated infrastructure

On: Land reserved and acquired under the *National Parks and Wildlife Act 1974*

Commencement: 1 November 2016

Initial term: 5 years

National Parks Protocol for working in national park estate

Some of this consultation/notification is a requirement of the *EIA* and needs to be completed prior to approval to proceed. Some of the consultation/notification such as noisy works and working on classified roads is completed during the construction phase.

A full list of consultation and notification requirements can be found in the EPC.

1.5.5. Construction phase

Works can proceed when *planning approval* has been obtained all *workers* understand the conditions of approval, environmental risks and associated controls that are applicable to their work.

a) Undertake consultation/notifications that were not completed as part of the planning phase.

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

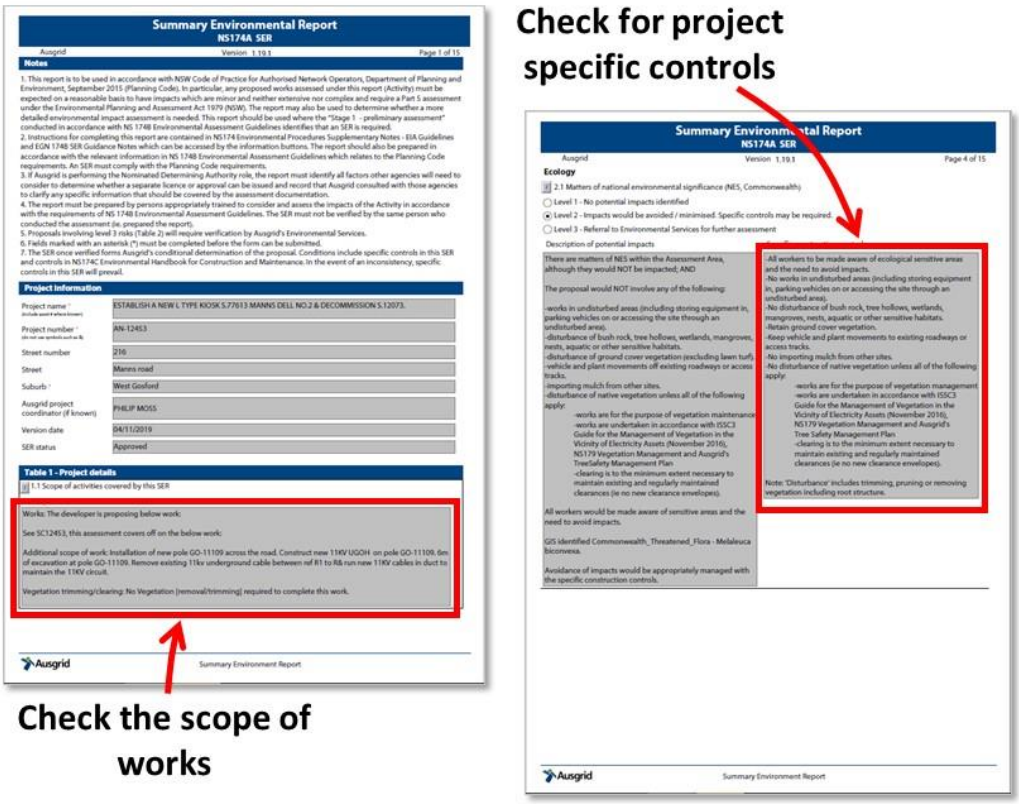
c) Check the proposed works are consistent with the scope of works described in the *EIA*.

d) Review and discuss the conditions of approval in the *EIA* and any *other approval* (including licences and permits).

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

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

g) For *REFs*, on completion of works, submit a compliance report (REF T375) to environmentalservices@ausgrid.com.au.



Example SER – remember to check the scope of works (Table 1) and project specific controls (Table 2)

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 and removing groundcover. This can pollute *waterways* and harm aquatic ecosystems.

It is a legal requirement that sediment is prevented from entering a *waterway* or drain.

When to contact Environmental Services
02 9394 6659

a) Incidents involving erosion and sediment.

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

c) Disturbing > 50m^2 on *vulnerable land*.

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

e) Working below the high water mark of a natural *waterway* (including dredging, excavating, reclamation, filling or vehicle access).

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 is potential of hydrogen, which is a measure of the acidity or alkalinity of a solution.

Turbidity means the cloudiness of a liquid from suspended particles

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, lagoon or lake.

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 required *planning approval* or *other approvals* (refer to section 1.5).

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

c) Check for drainage lines, grates, drains, inlets, exposed surfaces, areas subject to bogging and *waterways*. Drainage diagrams are available for substations and depots.

d) Check for *vulnerable land* (refer to WebGIS EL).

2.1.2.Six steps for effective erosion and sediment control

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

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

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

Locating of slopes, contours and drainage lines will determine the controls required

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

STEP 2 - Minimise erosion potential.

a) Minimise ground disturbance and the removal of ground cover.

b) Avoid disturbed areas and areas prone to bogging, where possible, 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 on to the worksite using barriers such as sand bags or sediment fences.

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

g) Place soil upslope of excavations, outside of the *zone of influence*.

Spoil temporarily placed on tarp to prevent run off 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*. Examples include:
   - geotextile filter bags (refer to section 2.1.8)
   - coir logs (refer to section 2.1.9)
   - sediment fences (refer to section 2.1.10).

b) Sediment control devices should be installed:
   - before works 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).

Turf can be used as an effective natural barrier and filter

STEP 4 - Good site management.

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

b) Clean mud from wheels and vehicle underbodies prior to 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 prior to and during periods of rainfall), to check they are working effectively and no sediment is leaving 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 sediment controls

STEP 6 - Rehabilitate disturbed areas.

a) Stabilise disturbed areas promptly (eg 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 so that sufficient ground cover to prevent erosion is established.

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 and trenching

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

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

b) When stockpiling cannot be avoided, place stockpiles away from roadways, gutters, drains, slopes, and concentrated flow paths.

c) Avoid placing materials within the *zone of influence*.

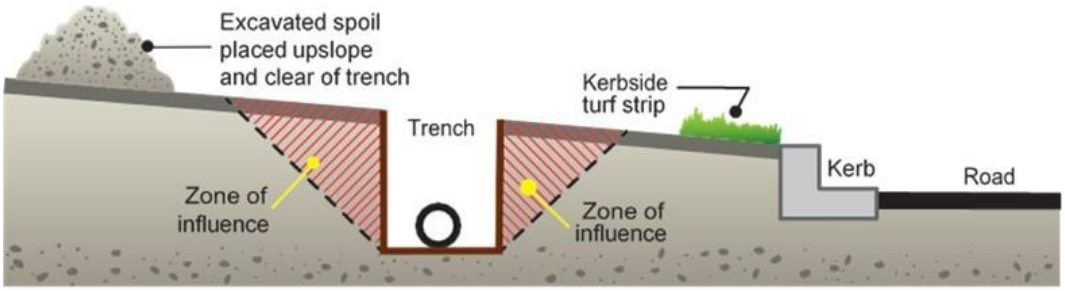
d) Protect stockpiles at risk of wind or water erosion. Controls may include:

- placing stockpiles on a tarpaulin
- covering or containing stockpiles if the worksite is left unattended or when rain is expected
- diverting surface water flowing onto the stockpile using upslope barriers such as sand bags
- installing sediment controls downstream of the stockpile.

Tipping spoil directly into a truck or skip avoids stockpiling

Bulk storage bags help contain materials

Stockpile covered with plastic to prevent wind and water erosion



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 will require an *EIA* (refer to section 1.5).

b) Maintenance of access tracks requiring vegetation removal may require an *EIA* (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 applicable requirements of NSW Erosion and sediment control on unsealed roads.

2.1.6.Saw-cutting

Slurry from saw-cutting operations must be contained as it has a high *pH* (alkaline) that is not reduced by filtering through geotextile. Controls include:

a) Contain slurry using a *wet-vac* (a vacuum cleaner that can be used to clean up wet or liquid spills) and sandbags, where possible.

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

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

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 runoff

Saw-cutting slurry has not been contained effectively

2.1.7.Depot material bays

a) Inspect and maintain the material bay facility after every use and after periods of rainfall.

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

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

d) Sweep up material that remains outside the bays before leaving the worksite.

e) Rectify or report any issues to Property.

Store material in correct bays to avoid cross contamination

2.1.8.Geotextile filter bags

To protect stormwater inlets, use geotextile filter bags instead of sandbags.

Sandbags do not allow water to filter through and can cause flooding. Sandbags are useful for water diversion and containing saw-cutting slurry.

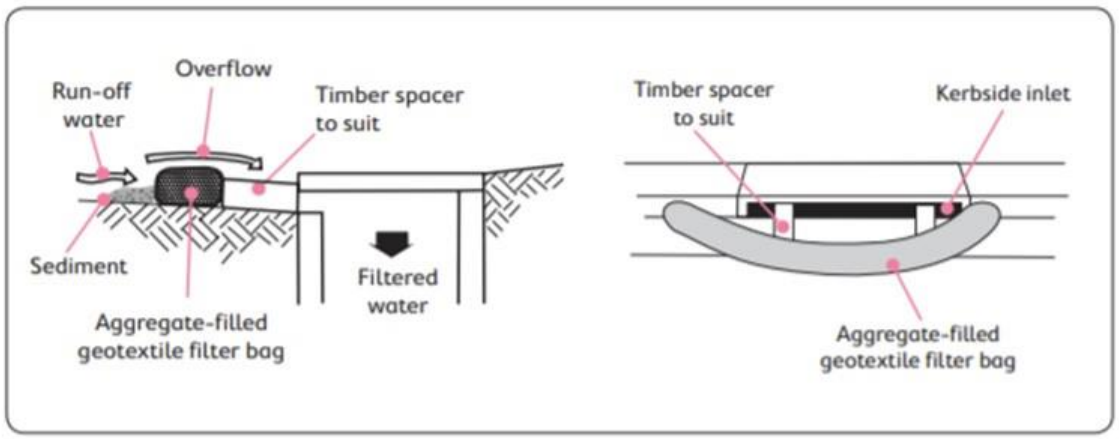
When using geotextile filter bags:

a) Fill the filter bags to two-thirds capacity with a minimum 20mm aggregate.

b) Form a seal with the kerb to prevent sediment bypassing the filter bag.

Fill geotextile filter bags to two-thirds capacity so they can be keyed firmly against the kerb

Controls used to protect stormwater inlets



Typical geotextile filter bag installation instructions for a kerbside inlet

2.1.9.Coir logs

Consider using coir logs (densely packed coconut fibre) on unsealed surfaces or where filtering is required. They can be used in *ecologically sensitive areas* and steep slopes and gullies.

To install coir logs:

a) Level the area beneath the logs prior to placement.

b) Stake logs at regular intervals to prevent movement.

Natural and biodegradable coir logs can be used on unsealed surfaces

2.1.10. Sediment fences

Sediment fences are used to contain coarse sediment from sheet flow. They should not be used for concentrated flows and are not a good filter for finer sediment (ie it doesn't reduce *turbidity*).

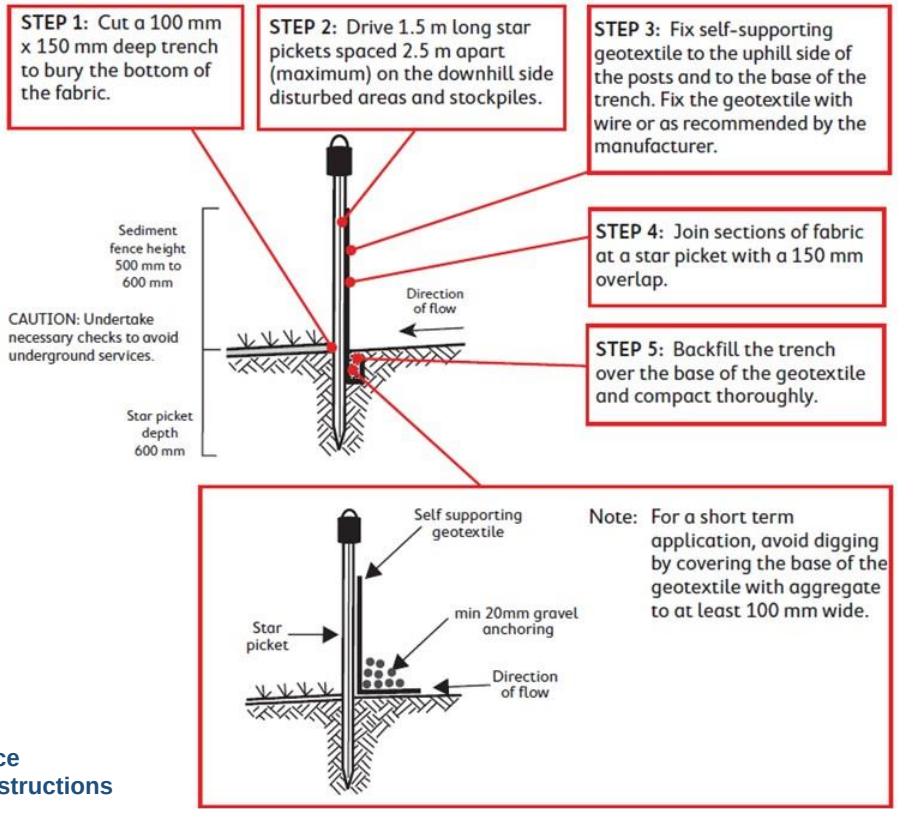
a) Locate sediment fences:

- parallel to the site contours
- as close as practicable downhill of disturbed areas.

b) Create small returns at approximately 20m intervals along the fence to limit the catchment area of any one section.

c) Do not use shade cloth for sediment fences.

Stockpile covered to prevent dust and sediment fence used to filter runoff



Sediment fence installation instructions

2.2. WATER DISCHARGE

Background

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

Sediment filter bag

Improper water discharge can harm the environment. Only clean rain water 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 will apply.

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

When to contact Environmental Services
02 9394 6659

a) Incidents involving water discharges.

b) Water discharges will be automatic, 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 is nephelometric turbidity units, which is the measurement unit of a liquid's *turbidity*.

pH is potential of hydrogen, which is a measure of the acidity or alkalinity of a solution and is a key indicator of water quality.

Turbidity means the cloudiness of a liquid from suspended particles and is a key indicator of water quality.

2.2.1. Pre-work checks

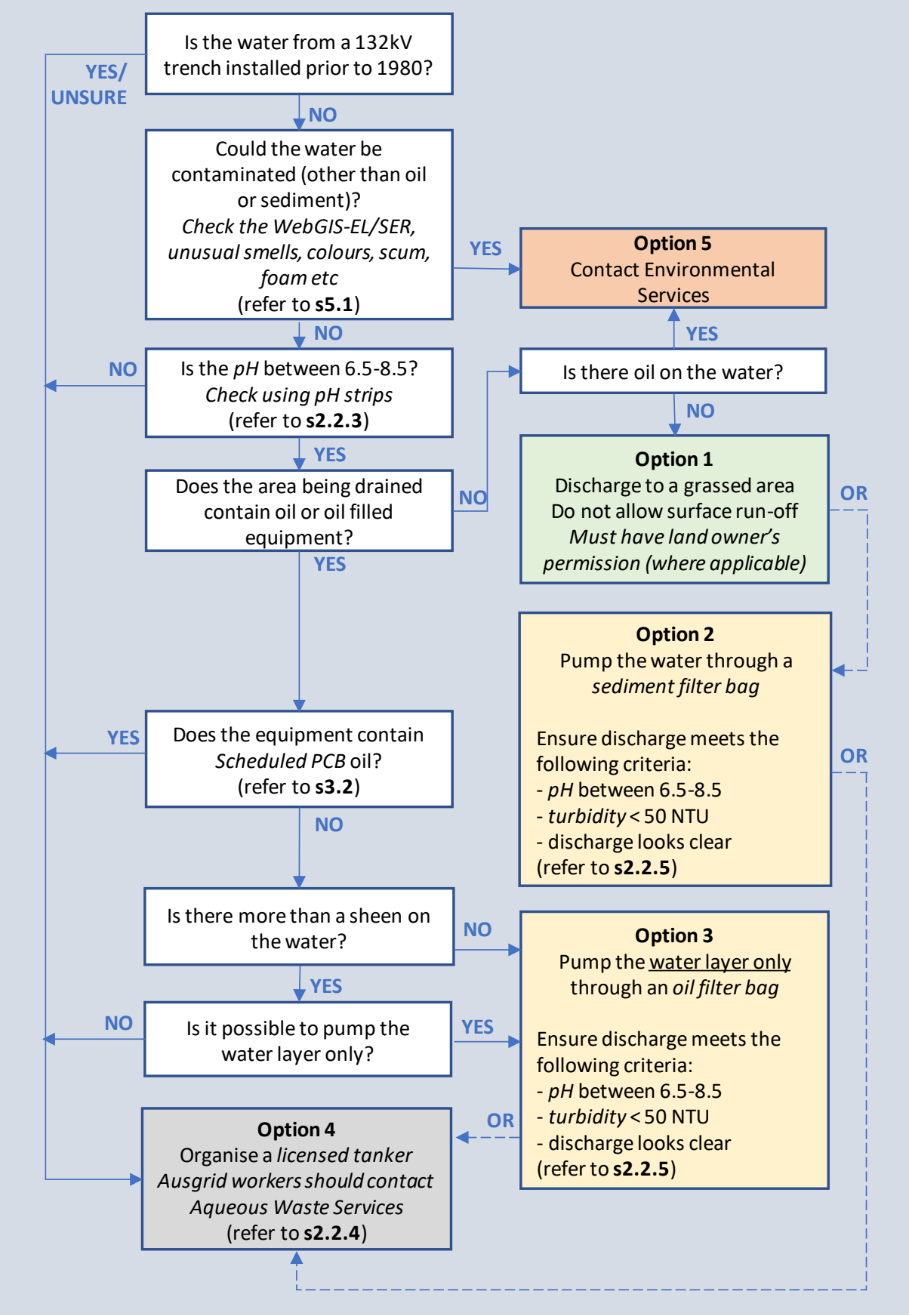
a) Check the requirements of any required *planning approval* or *other approvals* (refer to section 1.5).

b) Use Figure 2.2-1 to determine options for managing accumulated water 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.

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



2.2.2. How to measure turbidity

Turbidity of the discharge must be < 50 *NTU*.

a) Hold the *turbidity* tube upright and keep it out of direct sunlight.

b) Look vertically down the tube while gradually pouring the water sample into the tube.

c) Stop pouring when the indicator symbol on the bottom of the tube is just visible.

d) Record the reading in *NTU* from the scale on the side of the tube.

e) Rinse the tube out with clean water.

Indicator symbol at the base of the turbidity tube

Indicator symbol no longer visible in the turbidity tube

2.2.3. How to measure pH

The *pH* of the discharge must be between 6.5 and 8.5.

a) Follow the instructions on the *pH* test strips packet to check the *pH* prior to commencing discharge.

pH test strips

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 Aqueous Waste Services on their 24-hour number 02 8569 6712.

2.2.5. Discharging through filter bags

a) Ausgrid employees can find the filter bag work instruction in EG 162 Water Discharge guidelines.

b) The *worker* supervising the discharge must be trained in this procedure.

c) Monitor discharge to ensure the:

- *pH* is between 6.5-8.5
- *turbidity* < 50 *NTU*
- discharge contains no colour, oil or other contaminants
- discharge does not cause erosion or sedimentation (refer to section 2.1).

d) When using an oil filter bag, pump only the water layer. Oil filter bags are not designed to pump discrete oil.

2.2.6. 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 and non-commercial kitchens.

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 and lubricants.

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

b) Oil transfers are > 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 advice from your safety advisor. Ausgrid employees can use ChemAlert.

Definitions

EWMS is an environmental work method statement.

EWP is elevated work platform.

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.

WHS is work health and safety.

2.3.1. Pre-work checks

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

b) Check the requirements of any applicable *EWMS* (for high risk oil transfers).

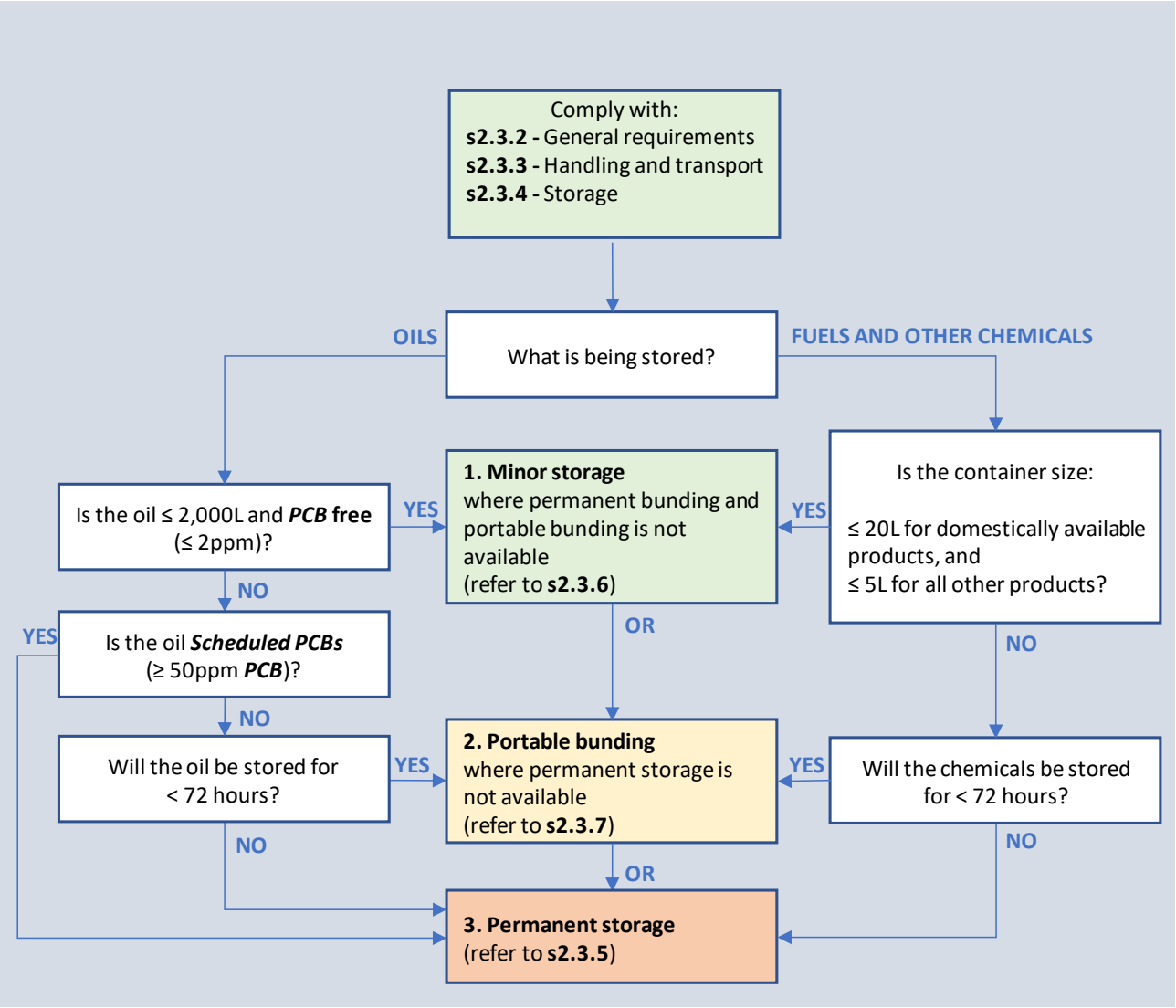
c) When using oil storage areas, check signage for requirements.

d) Check for drainage lines, grates, drains, inlets and *waterways*. Drainage diagrams are available for substations and depots.

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

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

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



2.3.2.General requirements

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

b) 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).

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

d) Check equipment and containers are in good condition and fit for purpose.

Spill kits should be readily available near oil storage areas

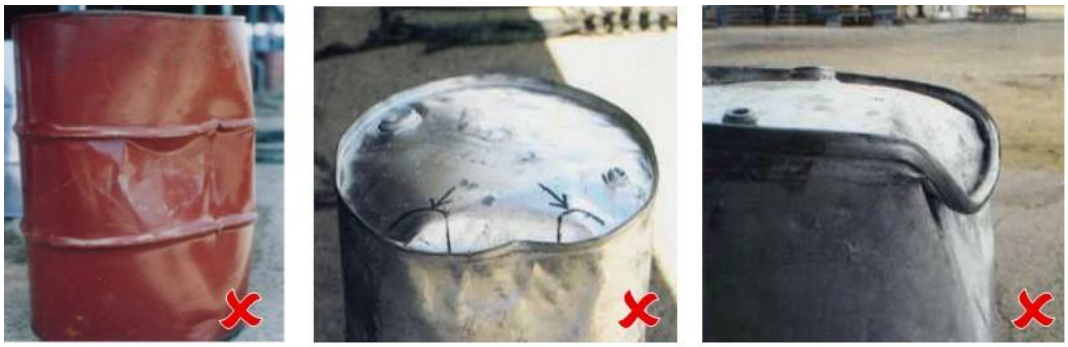
e) Have current oil spill response training if regularly involved in the handling, transport or storage of oil.

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

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

h) Contact Environmental Services on 02 9394 6659 if used oil spill response material contains *PCBs*.

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



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

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

2.3.3. Handling and transport

a) Handle oils, fuels and other chemicals such that spills can be recovered and would not enter a drain or *waterway* (eg on hard stand, within a bunded area, under cover).

b) Position transfer equipment as far away as practicable 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) Transport containers and equipment to prevent the risk of leaking from the vehicle.

g) Secure equipment and containers prior to transport.

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

- would 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.

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

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

e) Separate incompatible chemicals (always refer to the *SDS* and product label to check for any incompatibilities with the materials you are using, storing or handling. Ausgrid employees can use ChemAlert).

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

Permanent storage facilities should always be the first preference

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

Use bunded chemical storage cabinet to store fuel and chemicals

2.3.5. Permanent storage

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

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

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

d) Check bunds are in good condition (eg impervious, free of debris, drain valve closed, emptied of accumulated rainwater – refer to section 2.2).

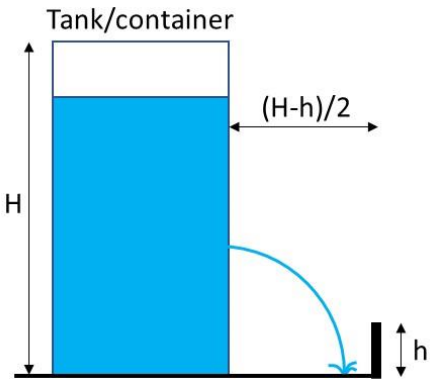
e) Rectify or report any issues.

f) 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.

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

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

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



Spray distance diagram

2.3.6.Minor storage

a) Use permanent storage or portable bunding where available.

b) 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.

c) Separate from other minor storage by 20m (indoors) or 15m (outdoors).

d) Separate from ignition sources, flammables, combustibles or building openings by 5m.

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

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

g) For fuel 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

a) Use permanent storage where available.

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

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

- > 2,000L oil
- > 2ppm *PCBs*.

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

e) Check bunds are in good condition (eg impervious, free of debris, emptied of accumulated rainwater). Refer to section 2.2 if managing accumulated rainwater.

f) Cover portable bunding where it could collect rainwater.

g) Keep portable bunds at least 5m from ignition sources, flammables, combustibles and building openings.

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

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

Bunded pallets 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) Minimise the quantity of chemicals stored.

b) Dispose of surplus chemicals in a timely manner.

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

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

e) Update *HAZCHEM* manifests as required.

2.3.9. Spill kits

a) 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 by Ausgrid, including their typical capacity are:

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

Ausgrid employees, can find advice on kit contents in EG 100 Oil Handling guidelines.

Spill kit contents include:

- safety equipment & *PPE* (eg gloves, P1 mask, safety glasses)
- absorbent material & booms (eg socks, pads, loose absorbent)
- general equipment & tools (eg brush and pan, bags, tape).

The general types of spill kits available are:

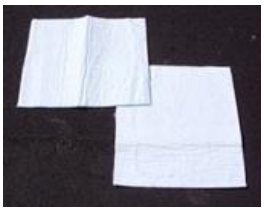
- oil only – for oil-based liquids such as oils, fuels and lubricants. These products are hydrophobic and will float on water
- general purpose – for oil and water-based liquids, including weak acids and alkalis. These products absorb water and will not float on water
- *HAZCHEM* – for aggressive chemicals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

A summary of how and when to use different products for oil spills is shown in Table 2.3-1.

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.

For other chemical spills the required product will depend on the chemical. Check the product label/instructions or *SDS* for suitability.

Table 2.3-1: Oil spill response material

Product	Use
Socks 	**When to use:** Oil and fuel spills requiring containment. **How to use:** Surround leaking drums, place in the flow path, 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:** Oil and fuel spills requiring containment in an aquatic environment (ie 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:** Oil spills and leaks involving pits and drains. **How to use:** Place in drain, pit or gutter. **Capacity:** Approximately ½ the volume of the absorbent (eg a 20L pillow will absorb 10L of oil). **Comments:** Netted pillows are available for use with high water flows.
Loose absorbent 	**When to use:** Oil and fuel spills, leaks, drips, and clean up. **How to use (land):** Place on oil and spread with broom for maximum oil absorption. **How to use (water):** Spread over water, 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 (eg a 50L bag will absorb 25-50L of oil). **Comments:** Product is not designed to float for long periods and will sink when full of oil.
Pads 	**When to use:** Oil and fuel spills, leaks, drips, and clean up. **How to use:** Place under leaks/drips, as a floating pad, place in trafficable areas, place in drip trays, 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 full of oil.
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 to damaged area to create a seal. Putty should be shaped over the damaged area to 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 for high temperature electrical wiring in cable bandages, joints, pits and conduit, 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 Ausgrid *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.

How to get help

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

Contact Ausgrid's Senior Project Officer – HAZMAT on 0417 295 157 if:

a) Asbestos sampling is required.

b) *Asbestos in soil* is identified.

c) Asbestos has been illegally dumped on Ausgrid property.

Contact Ausgrid's Hazmat Hotline 02 9394 6961 or Hazmat@ausgrid.com.au if:

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

e) A new asbestos hazard has been identified.

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 Network Standards.

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.

LAA is Licensed Asbestos Assessor.

LAR is 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 required *planning approval* or *other approvals* (refer to section 1.5).

b) Check for the presence of known asbestos and suspected asbestos (refer to WebGIS EL or Asbestos Register). For underground assets, refer to Dial Before You Dig plans (Ausgrid employees can refer to Network Viewer).

c) Check for naturally occurring asbestos (refer to WebGIS EL and Figure 3.1-1).

d) Check for equipment/buildings older than 2003 that have not been surveyed. Contact Ausgrid's Senior Project Officer – HAZMAT on 0417 295 157 if a *HAZMAT* survey is required.

e) Undertake a visual assessment of the worksite and equipment for suspected asbestos. Ausgrid employees can refer to the Asbestos Product guide provides examples of different types of *ACM*.

f) If there is known or suspected asbestos, note the type of material and its condition.

g) Use Figure 3.2-1 to determine requirements for working with asbestos.

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

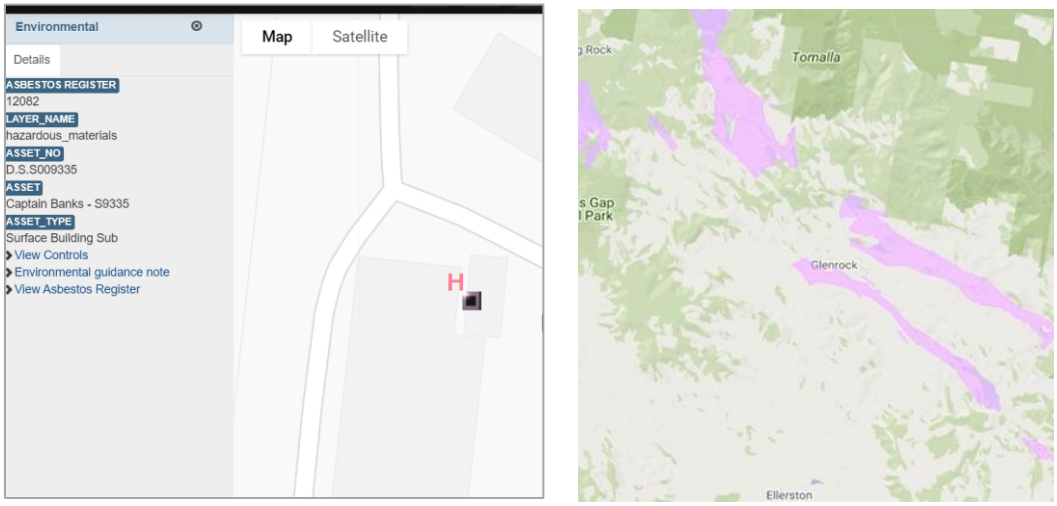
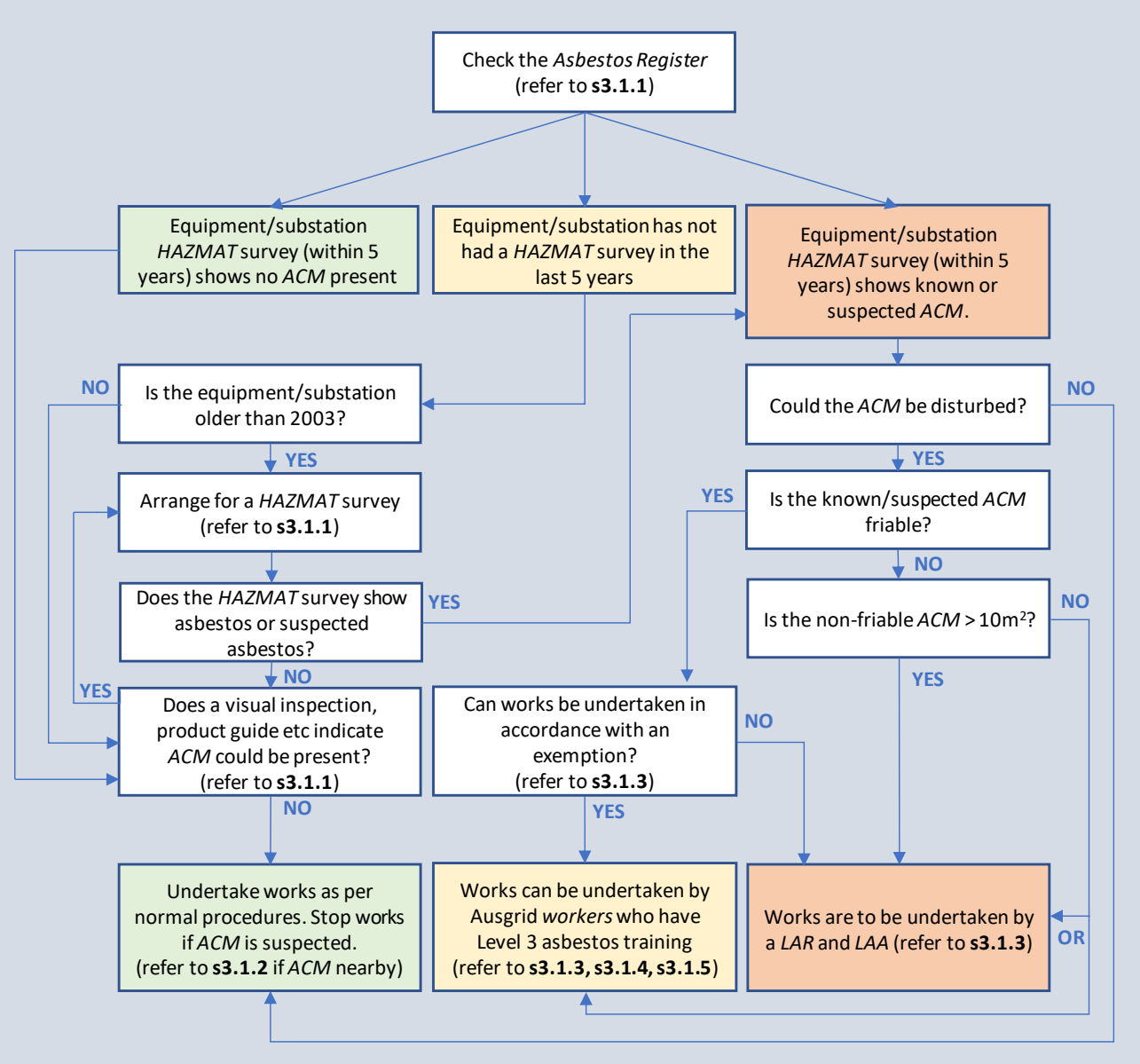


Figure 3.1-2: Process for working with asbestos



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 NS 211 and relevant training (refer to Table 1.3-1).

c) Contact the Hazmat Hotline 9394 6961 if suspected asbestos is discovered.

3.1.3. Working with asbestos

Requirements for working with *ACM* are detailed in WHS Regulation and SafeWork NSW Code of Practice - How to safely remove asbestos.

a) Undertake all works with *ACM* in accordance with NS 211, relevant training (refer to Table 1.3-1) and conditions of any applicable current exemption.(for Ausgrid employees).

b) Working with *ACM* requires asbestos training (refer to Table 1.3-1) and associated *PPE*.

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

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

e) No reinstatement of soil containing *ACM* in-situ. Refer to section 5.1 for the additional requirements regarding *asbestos in soil*.

f) Consult with occupants of the site before starting *asbestos removal work*.

g) Notify occupants of the site and residents in the immediate vicinity of the works, commencement date and expected duration.

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

i) At the completion of works complete and submit Hazmat Remediation & Removal Form (HRR) to Hazmat@ausgrid.com.au. Include:

- air monitoring results and clearance certificates (for licensed works)
- tipping dockets (for waste taken to landfill).

3.1.4. Transport and disposal of asbestos

a) Contain all asbestos waste on the worksite by double bagging using clear asbestos waste bags and closing using a 'gooseneck' seal, or double wrapping with 200µm thick plastic and labelled as asbestos waste.

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

c) Wet down asbestos contaminated soil prior to transport.

d) Dispose of asbestos waste as soon as practicable.

e) Identify the *EPA* licensed facility for disposal and contact to confirm delivery requirements. On arrival inform the landfill operator that the waste contains asbestos. Ausgrid employees can deposit appropriately wrapped and labelled asbestos waste in secure asbestos bins located at certain depots (Ausgrid employees can refer to the Asbestos Gateway).

Note: If asbestos is mixed with other wastes, the waste will need to be managed in accordance with the requirements for all waste types (refer to section 5.3).

f) Transport of asbestos waste to a waste facility requires monitoring (using WasteLocate) for loads of more than 100kg or greater than 10m^2 of asbestos sheeting (refer to section 5.3).

g) Transport bagged or wrapped asbestos waste to a disposal location using a covered and leakproof vehicle.

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 prior to removal from the network.

b) Asbestos must be removed from equipment before resource recovery.

c) Asbestos is to be removed in accordance with NS211 and a clearance certificate issued by a *LAA* prior to equipment being sold for scrap.

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 based 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) closing contactor box

3.2. POLYCHLORINATED BIPHENYLS

Background

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

Improper 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 is required for some activities.

When to contact Environmental Services
02 9394 6659

a) Incidents involving *PCBs*.

b) Disposing *PCB waste* other than *non-scheduled PCB* oil.

c) 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. Ausgrid employees can use ChemAlert.

Definitions

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

Articles includes equipment (eg 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.

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 means the licence Ausgrid holds under the EHC Act.

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

Receptacles includes drums, containers and tanks but not equipment.

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

3.2.1. Pre-work checks

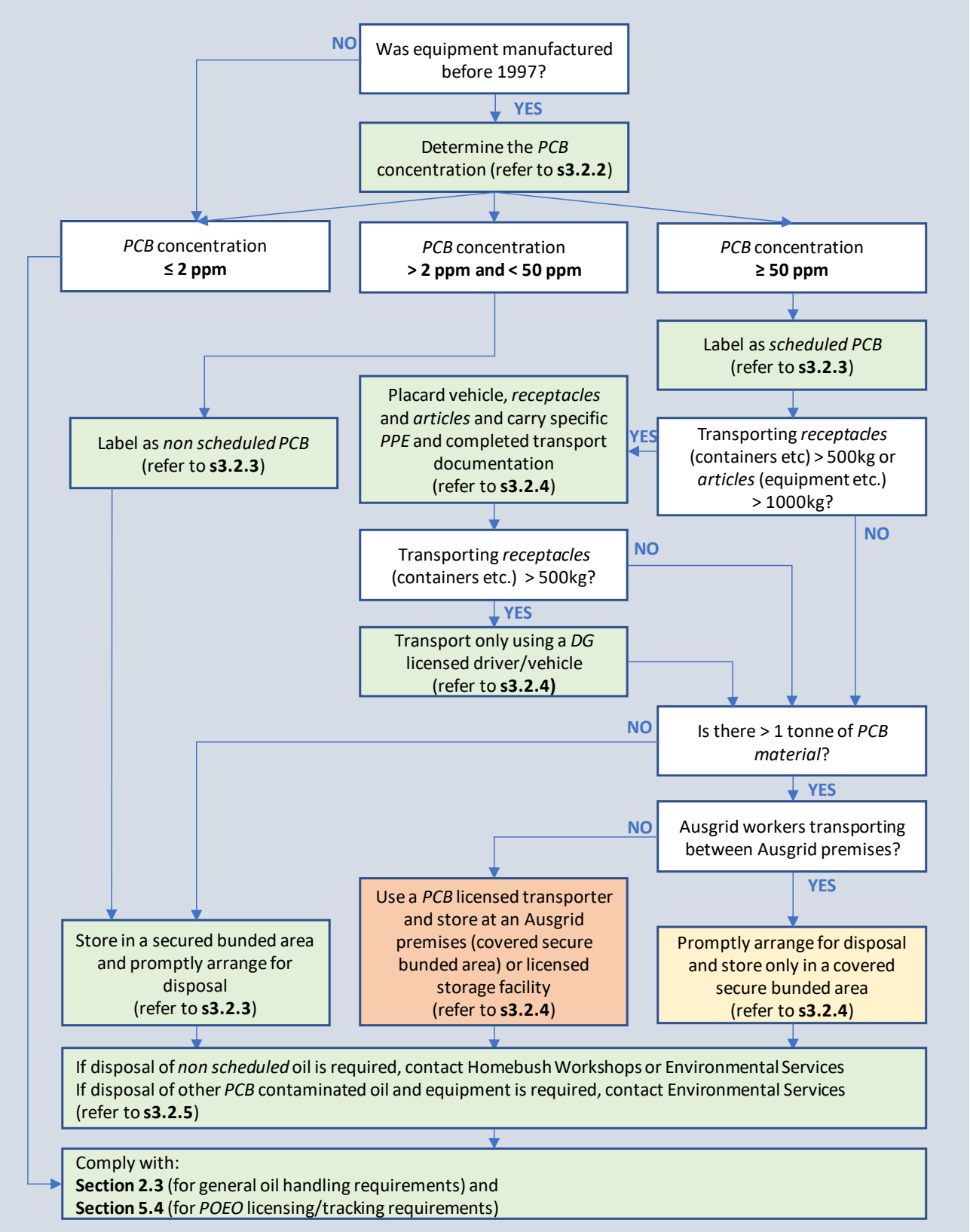
a) Check the requirements of any required *planning approval* or *other approvals* (refer to section 1.5).

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

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

d) Check for drainage lines, grates, drains, inlets and *waterways*. Drainage diagrams are available for substations and depots.

Figure 3.2-1: Process for disposing of PCBs



3.2.2. Determine the PCB concentration

a) Determine the *PCB* concentration prior to disposing or draining oil and oil filled equipment.

b) For equipment manufactured before 1997, check the PCB Register (Ausgrid employees) or arrange for testing (contact the PLUS ES Chemical Testing Laboratory). If not tested, assume the equipment contains *scheduled PCBs*.

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

3.2.3. Labelling, transporting and storing PCBs

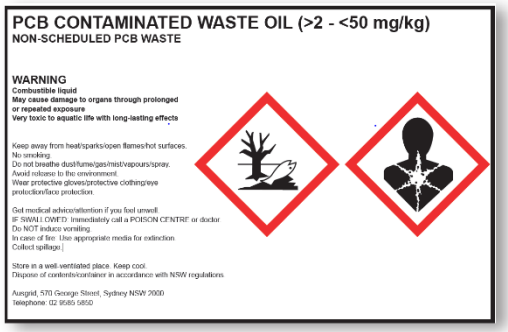
a) Clearly label *PCB waste* and have appropriate spill kits, response procedures and *PPE* accessible.

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

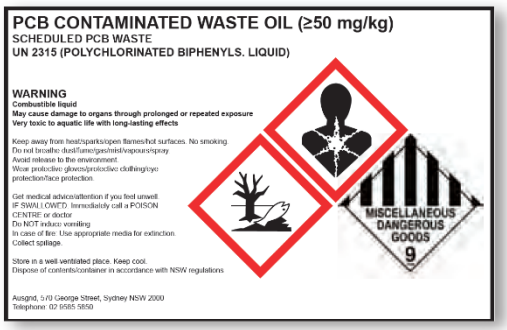
c) Label *scheduled PCBs* with the *scheduled PCB* waste label.

d) Store *PCB material* in accordance with section 2.3.4.

e) Transport *PCB material* in accordance with section 2.3.3.



Non-scheduled PCB waste GHS label



Scheduled PCB waste GHS label

3.2.4. Transporting and storing scheduled PCBs

A *PCB licence* is required for the transport or storage of *scheduled PCBs* > 1 tonne. These requirements include:

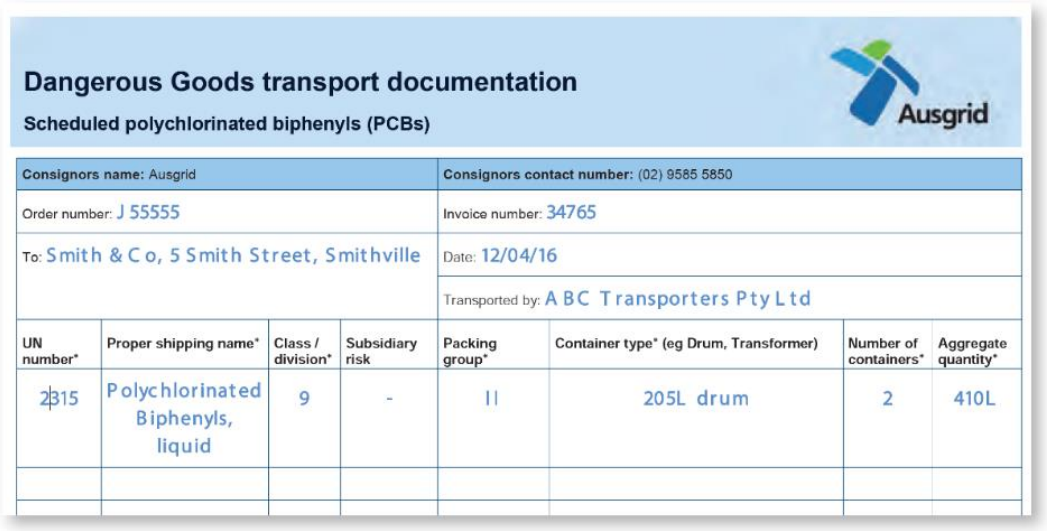
a) Use *PCB* licensed transporters and storage facilities; or Ausgrid employees can transport and store in accordance with our PCB licence including:

- transport only between Ausgrid premises by Ausgrid employees
- promptly arrange disposal
- store in a permanent bunded area which is covered and secured (refer to section 2.3.5).

b) Have current oil spill response training if involved in the handling, transport or storage of oil.

c) When transporting *scheduled PCBs*, carry completed transport documentation including:

- *DG* transport manifest (Ausgrid employees can use EF 106 Dangerous goods transport documentation)
- Initial emergency response guides:
  - Guide 00 – Vehicle Fire
  - Guide 171 – Polychlorinated Biphenyls (PCBs).



Dangerous Goods transport documentation

Scheduled polychlorinated biphenyls (PCBs)

Ausgrid

Consignors name: Ausgrid				**Consignors contact number:** (02) 9585 5850			
Order number: J 55555				Invoice number: 34765			
To: Smith & Co, 5 Smith Street, Smithville				Date: 12/04/16			
				Transported by: A B C Transporters Pty Ltd			
UN number*	Proper shipping name*	Class / division*	Subsidiary risk	Packing group*	Container type* (eg Drum, Transformer)	Number of containers*	Aggregate quantity*
2315	Polychlorinated Biphenyls, liquid	9	-	II	205L drum	2	410L

Dangerous goods transport manifest (EF 106)

Additional *DG* requirements apply when transporting *receptacles* (total) > 500kg(L) or *articles* (total) ≥ 1000kg(L). These requirements include:

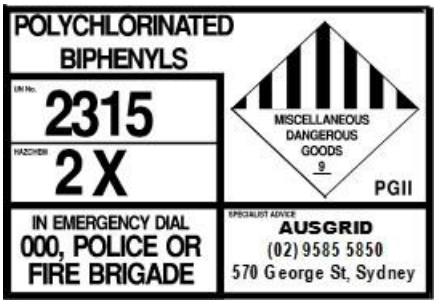
d) Carry specific *PPE* and safety equipment.

e) Carry an emergency information holder with completed transport documentation.

f) Placard the vehicle in accordance with the ADG Code.

g) When transporting *receptacles* (total) > 500kg(L), use a *DG* licensed driver and vehicle.

See Figure 3.2-2 for a summary of *scheduled PCB* transport requirements.



Scheduled PCB placard

3.2.5. Disposal

a) Dispose of *PCB waste* only to an *EPA* licensed facility.

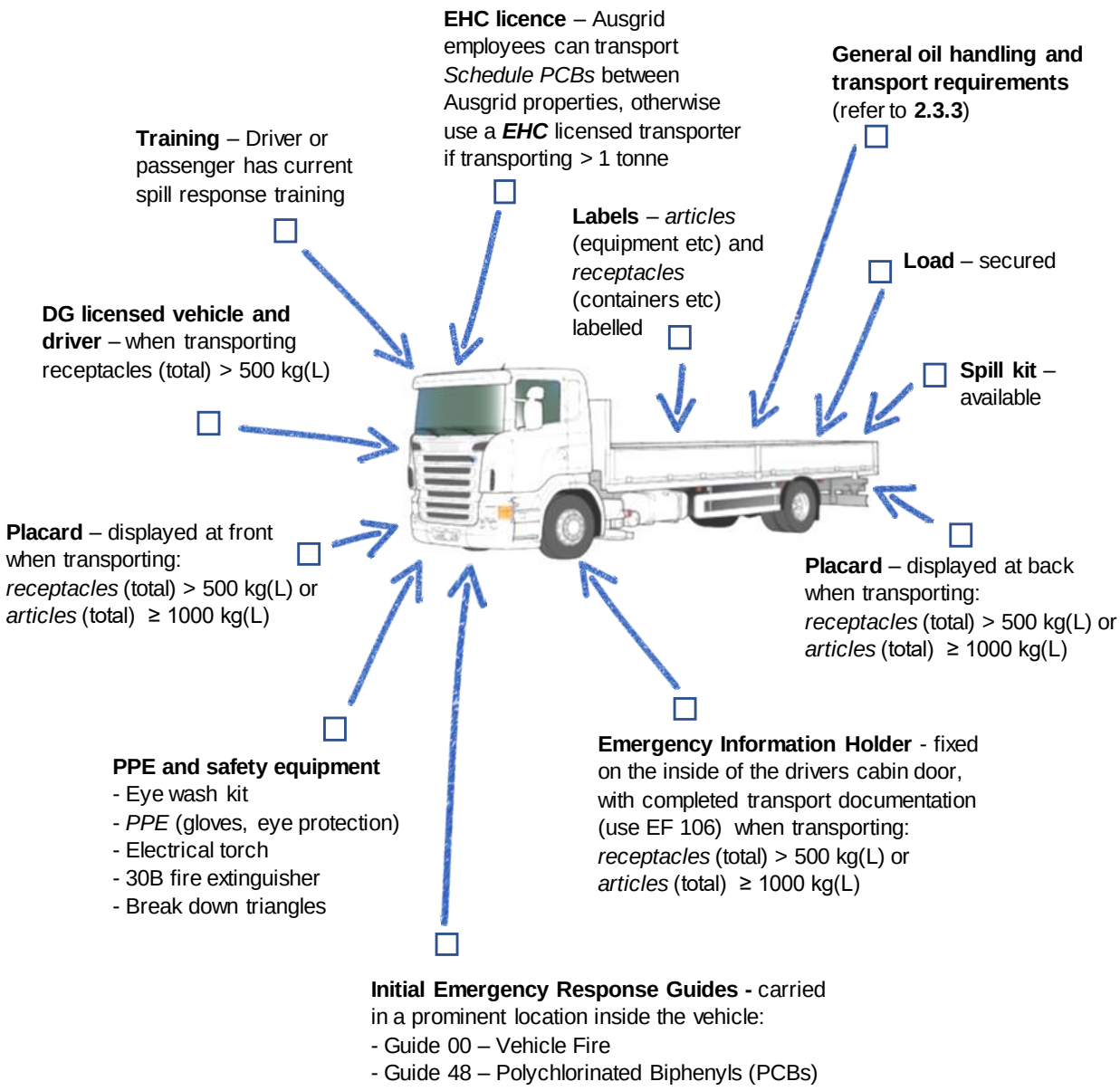
b) Comply with waste tracking requirements (refer to section 5.3).

c) To arrange disposal of *PCB waste* Ausgrid *employees* can contact:

- for *non-scheduled PCB* oil - Homebush Workshop on 02 9394 6801 or Environmental Services on 02 9394 6659
- for all other *PCB waste* - Environmental Services on 02 9394 6659. Use PCB waste removal form (EF 104) or PCB in-situ treatment form (EF 105).

PCB waste labelled ready for collection

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



3.3. PESTICIDES

Background

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

Improper 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. Ausgrid employees can use ChemAlert.

Definitions

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

Domestic use criteria applies if ALL of 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.

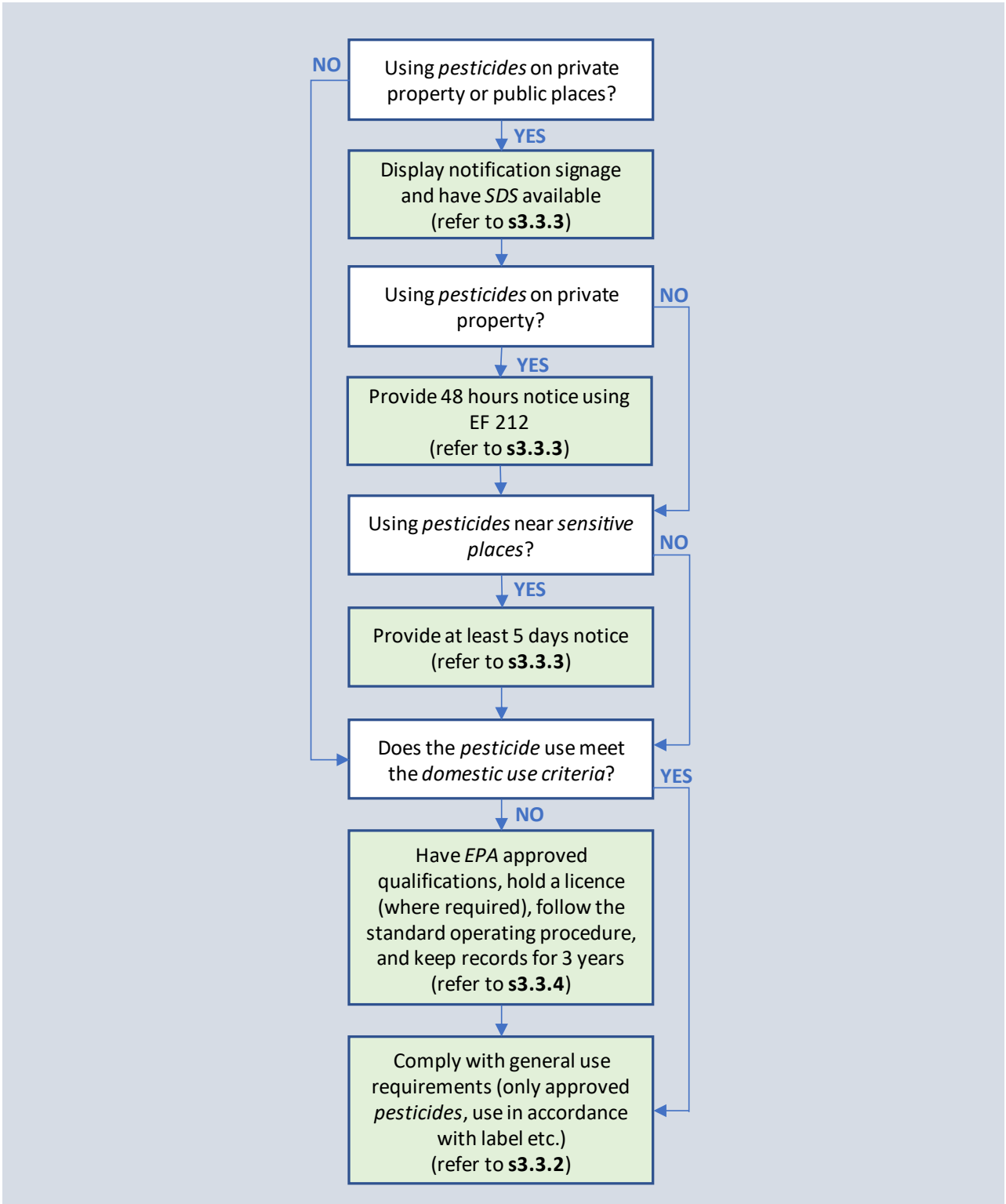
Pesticides include herbicides, termiticides, insecticides, biocides, fungicides and baits.

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

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

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

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
- Ausgrid *workers* controlling pests/decay on electricity power poles (refer to NS145 Pole Inspection and Treatment).

g) For agricultural properties, check with the landowner if the property has agriculture accreditation. Use of *pesticides* on accredited properties may impact their accreditation and income.

3.3.2.General use

a) Use only *pesticides* with an approved Ausgrid Be Safe 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 (AGVET 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 Use Notification Plan (refer to Figure 3.3-2).

b) Have the *SDS* available during use for employees 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 days prior to using *pesticides* on or within 20m of their premises.

e) Provide a copy of the completed application record to the owner/occupier when applying *pesticides* on private property. There is an exemption for pole treatment in remote locations where the owner/occupier cannot be reasonably identified. Ausgrid employees can use the Pesticide application record (EF 213).

f) Allow additional notification time for agricultural properties. Use of *pesticides* on agricultural properties may impact their accreditation and income.

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

When engaging the community consider the principles in section 1.4.3.

3.3.4. Commercial use – training and records

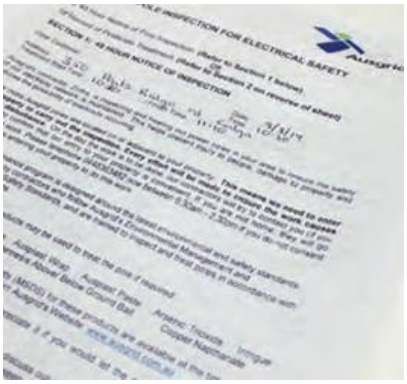
Commercial use includes all *pesticide* use which does not meet the *domestic use criteria*. To undertake commercial use of *pesticides*, the user must:

a) Have current *EPA* approved qualifications.

b) Where required hold a pest management technician licence (refer to 3.3.1).

c) Provide and follow instructions on how to use the *pesticide*. Ausgrid employees can use the standard operating procedure template (EF 211).

d) Keep records in accordance with *EPA* requirements, such as making records within 24 hours of application and keeping records for a period of 3 years. Ausgrid employees can use the EF 213.



Retain records of commercial pesticide use for 3 years

e) Provide a copy of the completed application record to the owner/occupier when applying *pesticides* on private property. There is an exemption for pole treatment in remote locations where the owner/occupier cannot be reasonably identified.

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

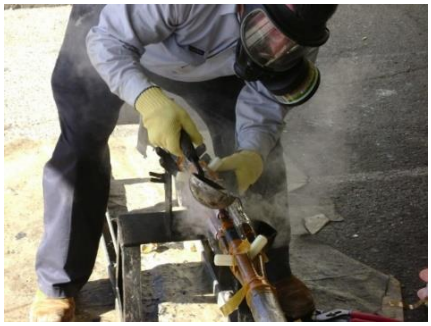
Prescribed public place	Type of pesticide use								
	Timber pole treatment					Vegetation control	Equipment	Insects	Rodents
	Hand application of solid or paste fungicide inside pole and around pole base, beneath the soil	Hand painted application of liquid fungicide to treat damaged areas of CCA treated 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.
Note that information on the types of pesticide use and relevant pesticides will be provided on Ausgrid's website.

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 get help

Contact Ausgrid's Senior Project Officer – HAZMAT on 0417 295 157 if:

a) Lead sampling is required.

Contact Ausgrid's Hazmat Hotline on 02 9394 6961 or Hazmat@ausgrid.com.au if:

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

c) Works cannot meet the requirements in HG 20 Lead guideline (for Ausgrid employees) or relevant *SWMS*.

d) A new lead hazard has been identified.

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

Definitions

LCD is lead containing dust.

3.4.1. Pre-work checks

a) Check the requirements of any required *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).

c) Undertake a visual assessment of the worksite, buildings and equipment for suspected lead hazards (eg paint or *LCD*). Contact Senior Project Officer - HAZMAT if a lead hazard assessment is required.

d) 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 (refer to HG 20 (Ausgrid employees) and relevant *SWMS*).

3.4.2. Works that may disturb lead

Requirements for working with lead are detailed in WHS Regulation.

a) Arrange cleaning of the proposed work area within the substation prior to works commencing, where practicable.

b) Works involving the disturbance of lead (including *LCD*) must be undertaken in accordance with HG 20 (for Ausgrid employees) or relevant *SWMS*.

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

- disposable half face respirator with a P2 particulate filter or another 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.

3.4.3. Lead removal works

a) No removal of *LCD* > 8mg/m^2 without a *LAR* under controlled conditions and with an Occupational Hygienist or *LAA* to provide air monitoring and a clearance certificate.

b) Notify occupants of the site about the lead removal work prior to works commencing.

c) Notify residents in the immediate vicinity that may be affected by the lead removal work about the works, commencement date and expected duration.

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

e) At the completion of removal works, submit HazMat Remediation & Removal Form (HRR) (for Ausgrid employees) to Hazmat@ausgrid.com.au. Include any:

- air monitoring results and clearance certificates (for licensed works)
- tipping dockets (for all waste disposal).

3.4.4. Transport and disposal

a) Classify any waste generated in accordance with the NSW EPA Waste Classification guidelines (refer to section 5.3.8).

b) Where decommissioning and scrapping equipment coated in lead paint, contact Ausgrid's Supply Chain Coordinator on 9160 6808 to enable appropriate disposal of the equipment.

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

d) Comply with *EPA* waste tracking and licensing requirements (refer to section 5.3).

e) Seal bags of lead waste during transportation.

3.5. MERCURY

Background

Mercury is a naturally occurring element that is toxic to humans and wildlife. Mercury is a cumulative poison and may cause damage to the central nervous system and kidneys.

Handle, store and transport mercury containing equipment in a way that prevents the potential to rupture and to prevent spills.

How to get help

For mercury spill response, refer to section 3.5.7.

Contact Ausgrid's Hazmat Hotline 02 9394 6961 or Hazmat@ausgrid.com.au if:

a) Works cannot meet the requirements in HG 18 Workplace Hazardous Substances guidelines (for Ausgrid employees) and relevant *SWMS*.

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

Definitions

Articles includes equipment (eg relays, switches and tap-changers).

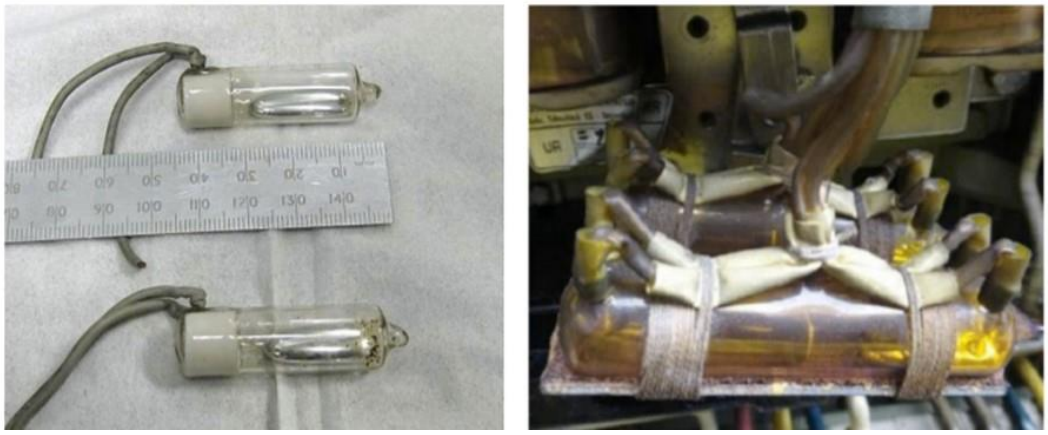
EPL is environmental protection licence.

3.5.1. Pre-work checks

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

b) Identify equipment that may contain mercury. Typical items include:

- transformer pressure and temperature switches, and thermometers
- Buchholz and oil surge relays (commonly found on zone and subtransmission transformers and some larger distribution transformers)
- time delay contactors (commonly found within transformer, tap-changer and circuit breaker control schemes)
- older style bi-stable relays (commonly found within transformer, tap-changer and circuit breaker control schemes)
- older style tap-changers
- air-vane switches within Sydney City distribution substation ventilation systems.



Examples of mercury glass vials from electrical equipment

3.5.2. Removal and handling of mercury vials

a) Mercury containing equipment must be handled in a manner to prevent spills.

b) Where safe to do so, mercury vials should be removed from equipment. Refer to HG 18 (for Ausgrid employees), relevant *SWMS* and relevant training.

c) Where it is not practical to safely remove mercury glass vials from equipment, the piece of equipment should be managed as mercury containing waste.

3.5.3. Storing mercury

a) Store and transport mercury in a leak proof, airtight container in good condition and suitable to withstand transport conditions (refer to the photo below for an example storage container). Ausgrid employees can obtain containers from Ausgrid's Supply Chain Coordinator on 9160 6808.

b) Individually wrap glass vials in inert cushioning material (such as a rag) to prevent breakage before placing into a liner and then into a storage container.

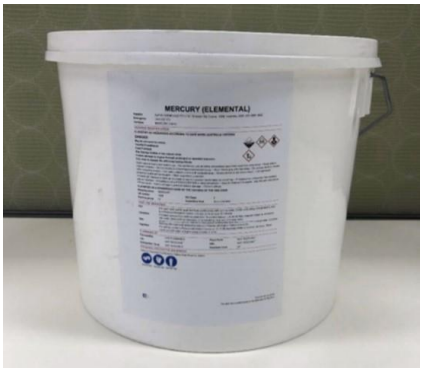
c) Liners must be strong, leakproof, puncture-resistant and completely surround the contents to prevent escape, irrespective of its orientation inside the container. Ausgrid employees can obtain inner liners through Ariba, examples include:

- #38596 (300mm x 840mm)
- #147645 (700mm x 1200mm).

d) Label items with a *DG/GHS* compliant label, available to Ausgrid employees from ChemAlert.

e) Store mercury containing equipment:

- in accordance with section 2.3.4
- in a cool, dry, well ventilated area, away from direct sunlight, heat or ignition sources
- away from incompatible substances such as acetylene, aluminium, ammonia, calcium, oxidizing agents (eg peroxides), sodium. Refer to the *SDS*. Ausgrid employees can use ChemAlert.



Example of a labelled mercury storage container

f) Used storage containers may contain mercury residue and should not be used to store other chemicals or items. Reuse them as mercury storage containers if they are in good condition.

3.5.4. Disposal of mercury containing lamps

a) Mercury containing lamps (eg street lighting lamps, fluorescent tubes, compact fluorescent lamps etc) must not be disposed to landfill. Ausgrid workers can use the street light recycling bins located at the depots.

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

3.5.5. Transporting mercury

a) Mercury must be transported in suitable labelled containers as described in section 3.5.3.

b) Individual *articles* containing > 1kg of mercury are subject to the requirements of the ADG Code and transport documents must carried during transport. If transporting > 1kg, complete and carry EF 106 during transport.

c) Additional requirements under the ADG Code apply for aggregate loads > 1,000kg. Use a *DG* licenced transporter in these circumstances.

d) An *EPL* is required to transport > 200kg of waste mercury (refer to section 5.3.4).

Note: Completed EPA waste tracking documentation must be received before the waste leaves the worksite – keep any hard copy records for 4 years.

3.5.6. Disposing of mercury

a) For waste disposal purposes, mercury is classified as 'Liquid Waste' and mercury contaminated equipment as 'Hazardous Waste' and must only be disposed to a suitably licensed facility. Recycling options are available where mercury has not been contaminated with other materials.

b) For undamaged waste mercury vials or chambers – Ausgrid employees must contact Ausgrid's Supply Chain Coordinator on 02 9160 6808 for specific requirements.

c) For other wastes containing mercury (ie ruptured mercury vials) – Ausgrid employees must contact Veolia on 132 955 to arrange collection.

d) Completed *EPA* waste tracking documentation must be received before mercury waste is removed from the worksite (refer to section 5.3.4).

3.5.7. Incident response

a) If a spill occurs, wear disposable gloves (eg polyvinyl chloride (PVC) or nitrile), a P2 mask and splash proof goggles.

b) Then if safe to do so, immediately contain the spill using rags or paper towels.

c) Check a large area around the spill point because droplets of mercury can travel large distances on flat surfaces.

d) Evacuate, quarantine and ventilate the area, and advise others to keep clear.

e) Notify your Supervisor and/or your safety advisor.

f) Call the NSW Fire & Rescue's Hazardous Materials Response unit on 000/112.

g) Notify Environmental Services on 02 9394 6659 or 0412 070 574 (24 hours).

4. EMISSIONS

4.1. AIR

Background

Air pollution sources can include particulates (eg dust, motor vehicle emissions 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, plant and equipment, handling sulphur hexafluoride (SF6), 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.

Plant 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) *SF6* leaks > 5kgs.

c) Disturbing > 250m^2 at any one time.

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

For large ground disturbances a specialist assessment and/or an *ESCP* may be required (refer to section 2.1).

Definitions

Sensitive places refer to section 3.3**.**

SF6 is sulphur hexafluoride.

4.1.1. Pre-work checks

a) Check the requirements of any required *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*.

4.1.2.Dust prevention

Implement controls to prevent dust from leaving the worksite:

a) Where required use water sprays to dampen disturbed areas and stockpiles (while preventing water runoff).

b) Stabilise disturbed areas where there will be a break in works of more than 21 days (eg 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 (eg use 'enviro-tarps').

h) Keep roads clean to minimise risk of windblown dust.

i) Minimise traffic movement and vehicle speeds over disturbed areas and unsealed roads.

Cover loads to prevent pollution

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

k) Undertake consultation with those potentially impacted (refer to section 4.2).

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

4.1.3.SF6 gas

SF6 is a greenhouse gas that is approximately 22,800 times more potent than carbon dioxide.

a) Handle *SF6* and other gases in accordance with approved work practices.

b) Tag cylinders to prevent having cylinders with unknown gas quality.

c) Return cylinders to *SF6* storage areas or the supplier.

d) Record *SF6* top-ups and equipment movements in SAP.

e) Promptly arrange for recycling of non-technical grade *SF6* through Homebush Workshops.

SF6 cylinders with missing valve protection and inadequate labelling

f) Use existing *SF6* stock where available rather than purchasing new stock.

g) Ausgrid employees can refer to NEG-SM09 Sulfur Hexafluoride (SF6) for more information including safety aspects related to asphyxiation and exposure to *SF6* decomposition products.

4.1.4.Other emissions

a) Check vehicles and equipment are serviced regularly and operate efficiently. It is an offence for motor vehicles to emit smoke for a continuous period of > 10 seconds.

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

c) Ventilation of contaminated air must not present a risk to *workers* or others.

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

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

f) 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 cause complaints, harm to 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 and equipment.

When to contact Environmental Services
02 9394 6659

a) Incidents involving the *EPA* or local council.

b) Impacting a receiver for > 3 consecutive weeks.

c) Complaints are received about asset noise (transformer, *CLC* 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. Ausgrid employees can use EF 553 Noise Management Plan 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 may 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*.

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

Standard operating hours are:

Days of the week	Standard operating hours (unless local council policy states otherwise)
Monday to Friday	7am to 6pm
Saturday	8am to 1pm
Sunday & public holidays	no work

4.2.1. Pre-work checks

a) Check the requirements of any required *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*.

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 (eg 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 (eg 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 (eg 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 (eg poured concrete piles instead of sheet piles)

Awareness

- avoid dropping materials from a height
- avoid dragging equipment and materials (eg 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 (eg avoid shouting, radios, inappropriate vehicle use)

Site Layout

- arrange the worksite to take advantage of natural barriers (eg hills, trees) and structures (eg 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*

Portable noise screen used to mitigate noise

- install portable screening for *high impact activities* so noise is absorbed or directed away from *sensitive receivers*. Screening works best when close to the source or receiver. Consider reflective properties of the screen
- install road plates to the NSW Roads and Maritime Services (RMS) specification (ie recessing, inspecting and assessing noise impact, plate thickness, bearing support, additional or modified fixings to reduce noise)
- arrange the worksite layout to minimise movements that would activate audible reversing and movement alarms (ie 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.

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.

Notification is required for impacted receivers

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) 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). Excludes *emergency works*.

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

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

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

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

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

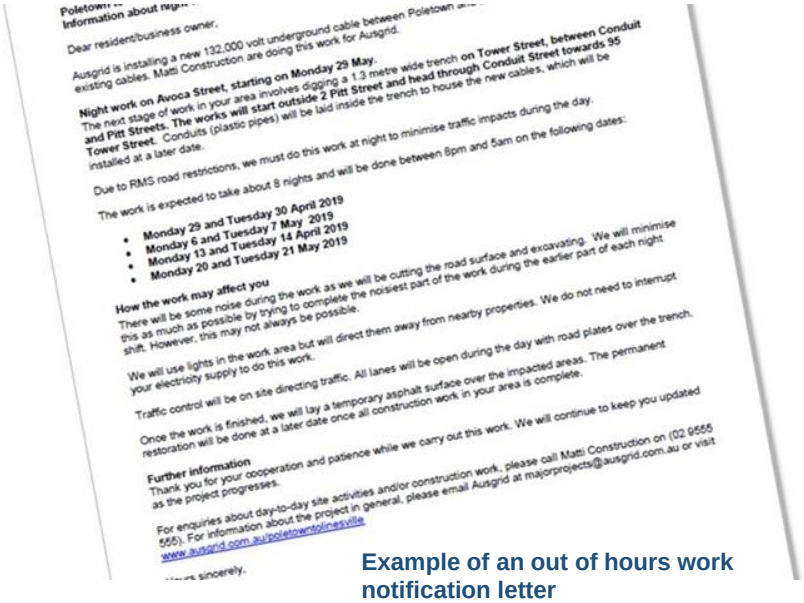
4.2.5. Contents of notification letters

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

Template letters for Ausgrid employees are available on The Wire.

Table 4.2-1: Minimum requirements for notification letters

Type of work	Required information
Information for works during 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 (ie Commonwealth's Translating and Interpreting Service, TIS National). f) A marked-up map or diagram clearly showing the location of the works (where beneficial).
Information for 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 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

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 in our everyday lives.

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

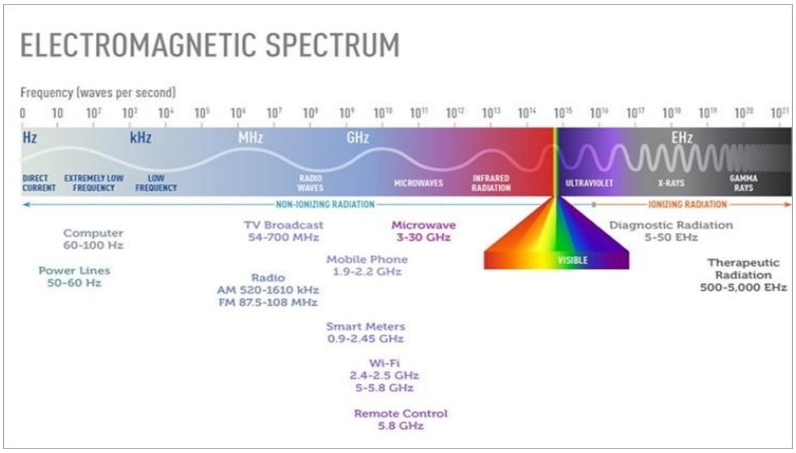
Electric and magnetic fields (EMF) is in the extremely low frequency part of the electromagnetic spectrum. Electric fields are present in the atmosphere and static magnetic fields are created by the earth's core. In contrast with natural *EMF* which is static, power-frequency fields oscillate at a frequency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

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

High field work environments are areas where *EMF* may 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 for signage indicating the presence of high *EMF*.

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

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

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

d) Provide Ausgrid with information describing the circumstances in which the proper functioning of the medical implant or implant may be at risk.

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

e) 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 and our *workers*.

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 long term or cumulative effects associated with *EMF*. Also, there are no known adverse health effects at levels below the limits in the ICNIRP guidelines.

ARPANSA advise:

"*There is no established evidence that the exposure to magnetic fields from powerlines, substations, transformers or other electrical sources, regardless of the proximity, causes any 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 basements and pits

Live line work

Low voltage busbars

Cable tunnels

Air cored reactors

4.4. RADIOFREQUENCY FIELDS

Background

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

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

Radio communications systems use the radiofrequency (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 an Ausgrid asset.

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 EME is radiofrequency electromagnetic energy or electromagnetic radiation. *RF EME* continues to travel away from the source even after the source is turned off.

4.4.1. Pre-work checks

a) Check for known *RF* transmitters near the work area (refer to WebGIS EL).

b) Look for identifier plates located near the *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:

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

d) Provide Ausgrid with information describing the circumstances in which the proper functioning of the medical implant or implant may be at risk.

Example of identifier plate located near an RF transmitter

4.4.2. General requirements

Where work may come within an antenna's general public exclusion zone:

a) Ausgrid employees must comply with NW000-W0147 Working near mobile phone antennas work instruction which requires notification, de-energisation, testing, confirmation and isolation of mobile phone transmitter antennas.

Testing the antenna

Then testing the RF EME meter which 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 (ie for persons classified as '*RF workers*')
- non-occupational (ie for the general public).

Workers complying with Field Services Work Instruction NW000-W0147 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, *WHO* 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 long term or cumulative effects associated with *RF EME*. Also, 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.

Contaminated soil must be assessed, stored and disposed in accordance with legal requirements. Specialist assessments, approvals, restrictions, management plans and notifications are required for certain activities or sites.

Unusually coloured water is an indicator of contamination

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* and the works have not been assessed/approved

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

A specialist assessment, remediation action plan (RAP) or site management plan may be required.

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

Definitions

Indicators of contaminated land include:

- unusual odours (eg fuels, solvents, rotten egg gas)
- oil staining or oil sheen in groundwater
- underground storage tanks (UST)
- buried waste (eg *asbestos in soil*, construction waste, containers)

- imported fill (eg ash, coke, slag, coal tar, asbestos)
- unusually coloured material (eg green clay)
- 132kV transmission cable trenches installed before 1980.

Areas more likely to be contaminated include 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.

RAP is remediation action plan.

5.1.1. Pre-work checks

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

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

c) Check for known contaminated land (refer to WebGIS EL).

d) Check for *indicators of contaminated land*.

5.1.2. Discovering 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).

Unknown material seeping into trench will need to be assessed

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

5.1.3. Minor remediation for oil leaks and spills

The following procedure can be used for minor leaks and spills on soil or grassed areas (eg *PT* leak):

a) Contact Environmental Services on 02 9394 6659 prior to scheduling the works as validation samples may be required.

Ausgrid employees can complete form EF 177 Remediation method and submit to environmentalservices@ausgrid.com.au. The process generally requires:

- 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)
- quarantine of excavated material in a lined skip bin or Hazibag
- waste classification and disposal (refer to section 5.3).

Contamination from a leaking pole transformer

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 sulphides 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 in *ASS* at any one time.

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

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

In these cases, 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 (eg soft, buttery, blue/grey or dark greenish grey)
- milky blue/green water
- shell fragments in the soil
- low lying, waterlogged, scalded or backswamp areas
- land below 5m Australian height datum (AHD) elevation
- jarosite (a pale-yellow mineral deposit) or iron oxide (rusty) mottling
- extensive iron stains on drain surfaces or iron stained runoff and ochre deposits

Indicator of ASS - milky blue/green water

Indicator of ASS - unripe muds or sediments

- 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).

5.2.1. Pre-work checks

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

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

c) Check for the presence of *ASS* (refer to WebGIS EL) and *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.

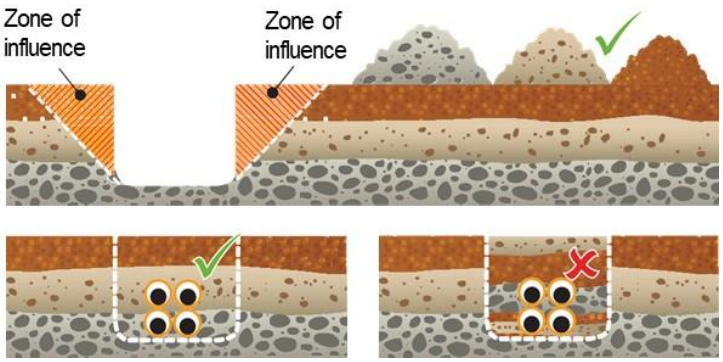
5.2.3.ASS management plans

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

b) For medium risk projects (refer to Figure 5.2-1), Ausgrid employees can use EWMS 167 Acid sulfate soils. 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.

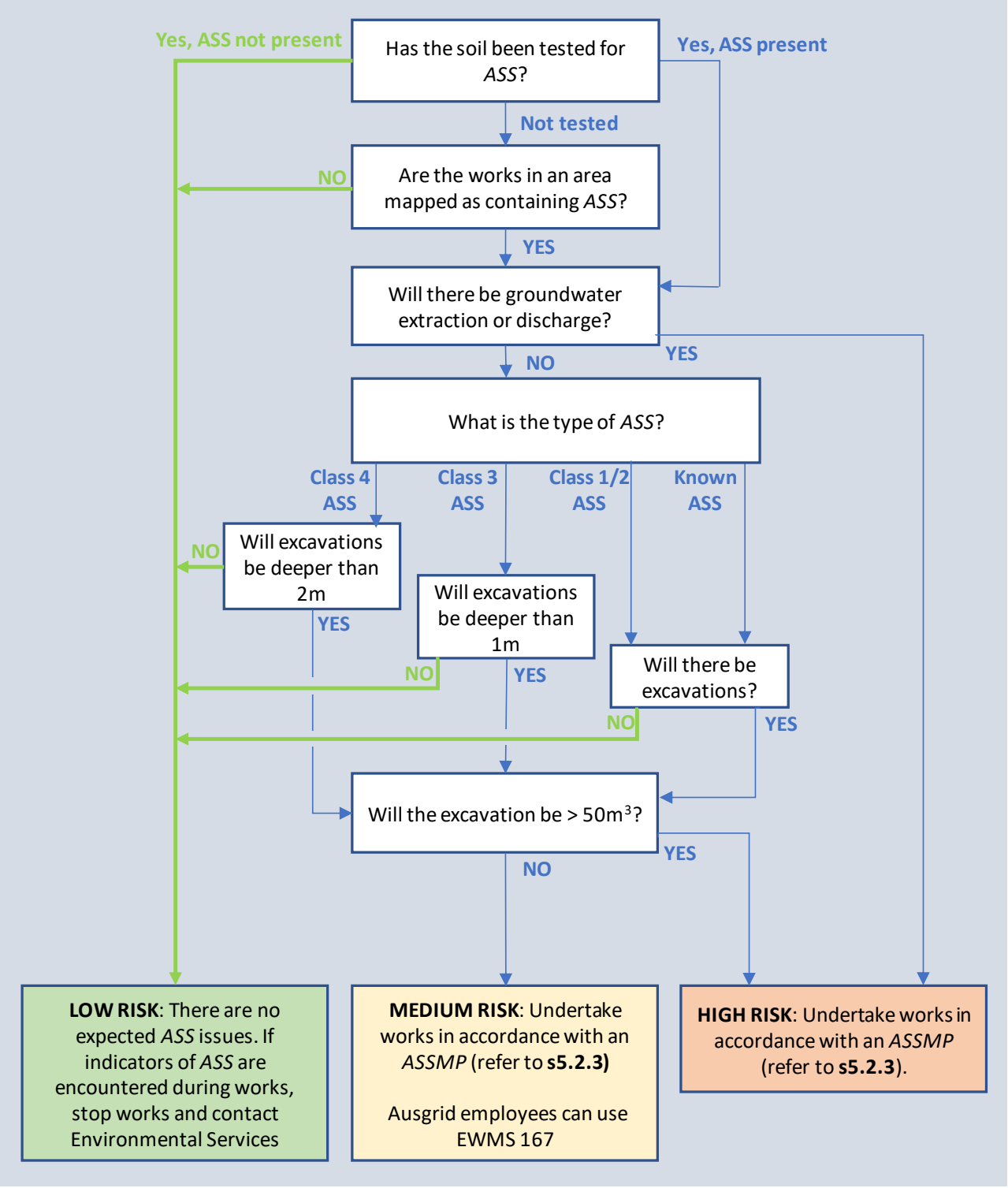
c) For high risk projects (refer to Figure 5.2-1), a site-specific *ASSMP* will be required. in accordance with the NSW ASS Manual and ASS Assessment Guidelines.



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 is 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. Ausgrid 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.

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 (refer to section 5.1).

5.3.1. Pre-work checks

a) Check the requirements of any required *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.

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

5.3.2. 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 5.3.8).

c) Consider the 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 and offices clean and tidy.

Segregate waste to avoid cross contamination

Example of poor waste segregation

5.3.3. Storing

a) Use a licensed storage facility for quantities exceeding licensing thresholds (refer to section 5.3.8). Ausgrid 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 our 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 may 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.

5.3.4. Transporting

a) Use a licensed transporter for quantities exceeding licensing thresholds (refer to section 5.3.8).

b) Before trackable waste is removed from the worksite (refer to section 5.3.8):

- obtain consignment approval from the receiving waste facility
- complete and sign the 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.

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

5.3.5. Disposing waste

a) Dispose of waste only to facilities that are 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) Ausgrid employees should use bins at depots for common waste streams. Alternatively, employees can contact Ausgrid's waste contractors for collection (refer to section 10).

5.3.6. Managing spoil

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

5.3.7. 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.

NS156 Working Near or Around Underground Cables details specific requirements for managing this spoil. Controls include:

a) *Workers* handling and transporting the spoil require awareness training in organochloride *pesticides* and *PPE*.

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.

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

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

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

5.3.8.Waste classification, licensing and tracking

Waste must be classified in accordance with the NSW EPA Waste Classification guidelines. Ausgrid employees can refer to EGN 323 Waste Database.

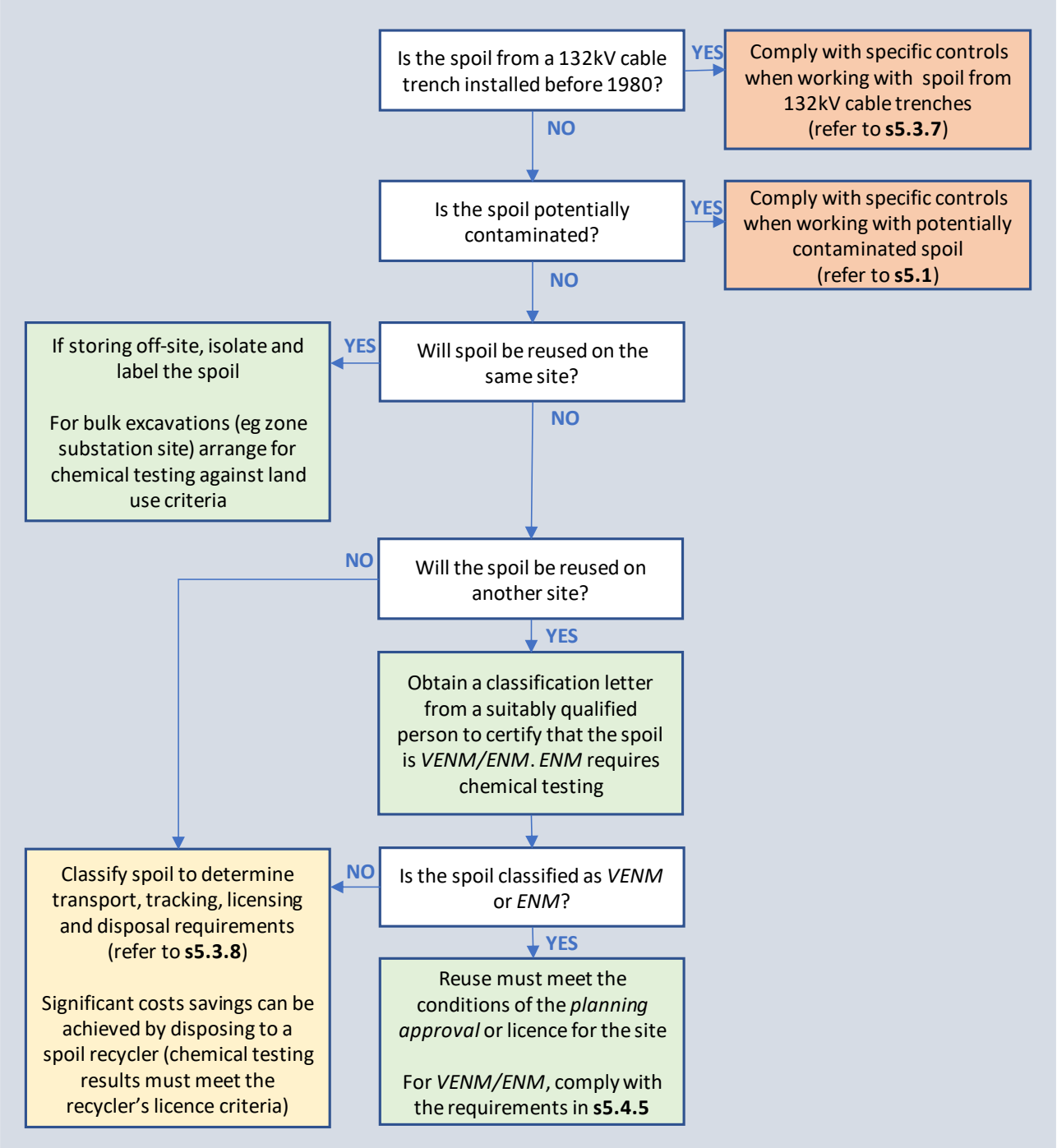
Table 5.3-1 shows licensing and tracking requirements for common Ausgrid wastes. The requirements in the table are general and exceptions may apply. Some wastes have additional requirements, including asbestos, *SCW*, *DG*, *PCBs*, spoil from transmission trenches and radioactive waste.

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	Licence to store?	Licence to transport?	Waste tracking?
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* – wood poles (including treated poles)*	Yes, if: – storing > 1,000 tonnes or 1,000m^3, or – receiving > 6,000 tonnes per year of waste generated off-site	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* (eg 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*	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 (use WasteLocate for tyres and asbestos in NSW, otherwise online tracking). Exceptions include wastes transported in NSW where: – sharps transport complies with sharps exemption – waste tyres are in loads <200kg and <20 tyres – asbestos is in loads <100kg and <10m^2 of sheeting

Figure 5.3-1: Process for managing spoil



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.

Resource Recovery Orders (RROs) are for suppliers of recovered materials and Resources Recovery Exemptions (RREs) are for end users of recovered materials. RROs and RREs specify requirements that must be met before applying recovered material to land.

Use of recovered materials must comply with RROs and RREs

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

When to contact Environmental Services
02 9394 6659

a) Incidents involving recovered materials.

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

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

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

e) Planning to provide 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.

Recovered fines means a soil or sand type material (particle size < 9.5mm) derived from the processing of mixed construction and demolition waste.

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 required *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) Obtain written confirmation of the source/nature of all recovered materials prior to importation.

b) When recovered materials are applied to land, comply with the conditions of an RRO (for suppliers or processors of the recovered material) and RRE (for receivers or end users).

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

5.4.3. Receiving VENM, ENM, recovered aggregates or fines

a) For materials recovered under a RRO obtain a statement from the supplier confirming that the material meets all requirements of the RRO.

b) Ensure materials are applied only in accordance with the requirements of the relevant RRE.

c) Keep records of the quantity of material received and the suppliers' name and address for 6 years.

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

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

f) Do not use *ENM* for anything other than engineering fill or for use in earthworks.

g) Prior to receiving any *recovered aggregates* or *fines*:

- 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.

h) Do not use *recovered aggregates* or *fines* in the following situations:

- construction of roads on private property unless approved by a *DA*
- around *waterways* or for drainage applications such as stormwater drainage or infiltration areas
- unsealed roads that would be subject to significant stormwater flows.

5.4.4. Supplying ENM and VENM

a) Unless *exempt development* (refer to section 1.5.1) all 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 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 order).

b) Do not allow leachate (contaminated run-off) to migrate from the application site.

c) Visually inspect mulch for 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 order.

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

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

6. ECOLOGY

6.1. VEGETATION

Background

Vegetation includes trees, plants, shrubs and groundcover. 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, physically damaging trunks and root structures, 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 may impact *ecologically sensitive areas* and have not been assessed/approved by an *EIA*, *approval, licence or permit* (refer to section 1.5).

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

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

Definitions

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

Ecologically sensitive areas include:

- national park estate
- threatened species
- endangered ecological community (EEC)
- areas of outstanding biodiversity value and critical habitat
- wilderness areas
- biobanking sites and biodiversity stewardship sites
- biodiversity offsets
- marine parks
- RAMSAR wetlands
- coastal wetlands and littoral rainforests
- seagrass, saltmarsh, and mangroves
- areas subject to conservation agreements
- other native vegetation, bushland and wetlands.

DCP means a local council's Development Control Plan.

DPI means the NSW Department of Primary Industries.

DPIE means the NSW Department of Planning, Industry and Environment.

Non-destructive digging includes hand digging, hydro vacuum excavation, air excavation, air knifing or vacuum excavation.

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.

TSMP means Ausgrid's Tree Safety Management Plan.

6.1.1. Pre-work checks

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

b) Figure 6.1-1 and WebGIS EL can be used to determine the requirements when working near vegetation.

c) Check for *ecologically sensitive areas* (refer to WebGIS EL and look for any local signage).

d) If required calculate the *TPZ* and *SRZ* (refer to Figure 6.1-2 or use the TPZ/SRZ Calculator).

e) Check for any recent incursions into the *SRZ* and their potential impacts to tree stability.

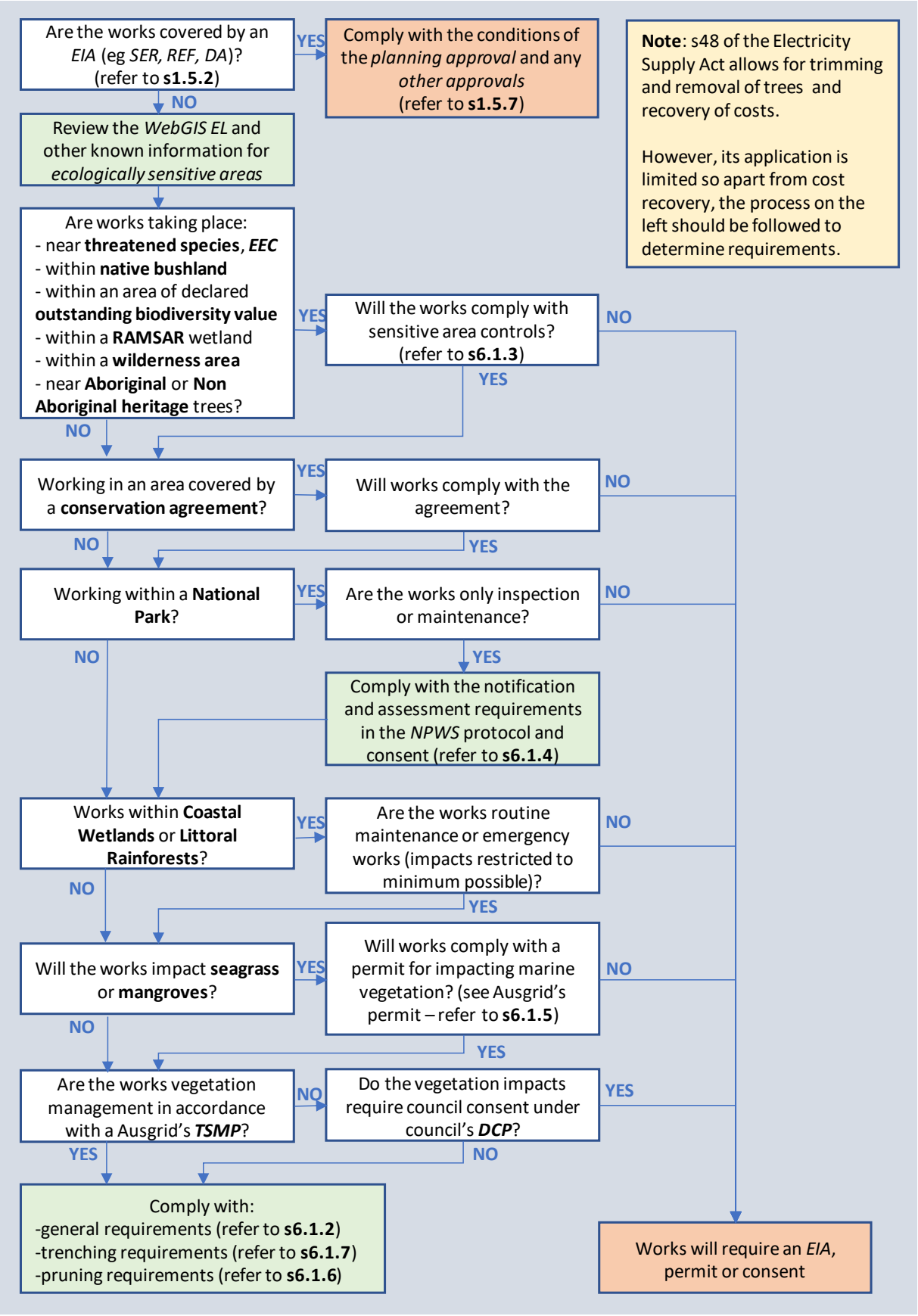
Threatened species - Downy Wattle

Native bushland

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) Use Figure 6.1-1 to determine the requirements when working around or impacting vegetation. Also refer to WebGIS EL.

b) Minimise clearing and disturbance of all vegetation.

c) Use existing roadways or access tracks.

d) No clearing of vegetation within 40m of a natural *waterway*.

e) Minimise activity (storage areas, stockpiles, vehicle parking, and access) within the *TPZ* (refer to Figure 6.1-2).

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) Minimise the removal of ground cover and understorey vegetation.

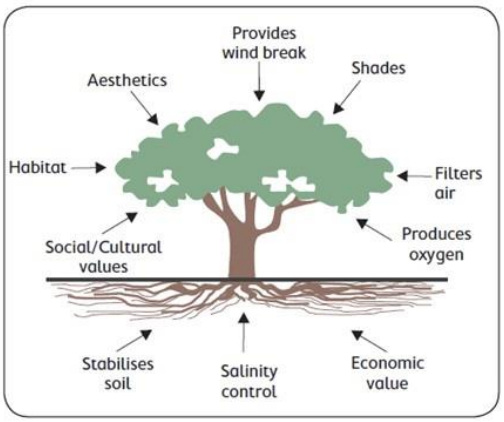
i) Implement controls to prevent the spread or introduction of weeds and pathogens in *ecologically sensitive areas* by maintaining vehicle and equipment hygiene (refer to section 6.3).

j) 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).

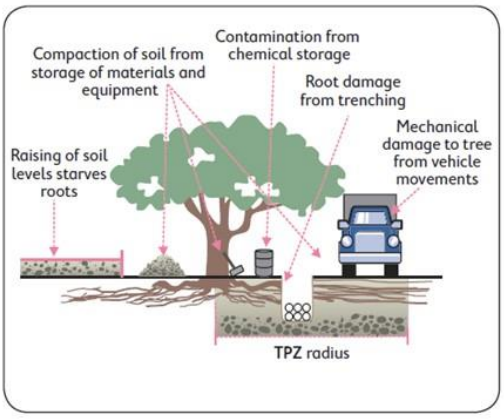
Strap boards and padding to the trunk to prevent damage

k) Water stress affected trees during the construction process.

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

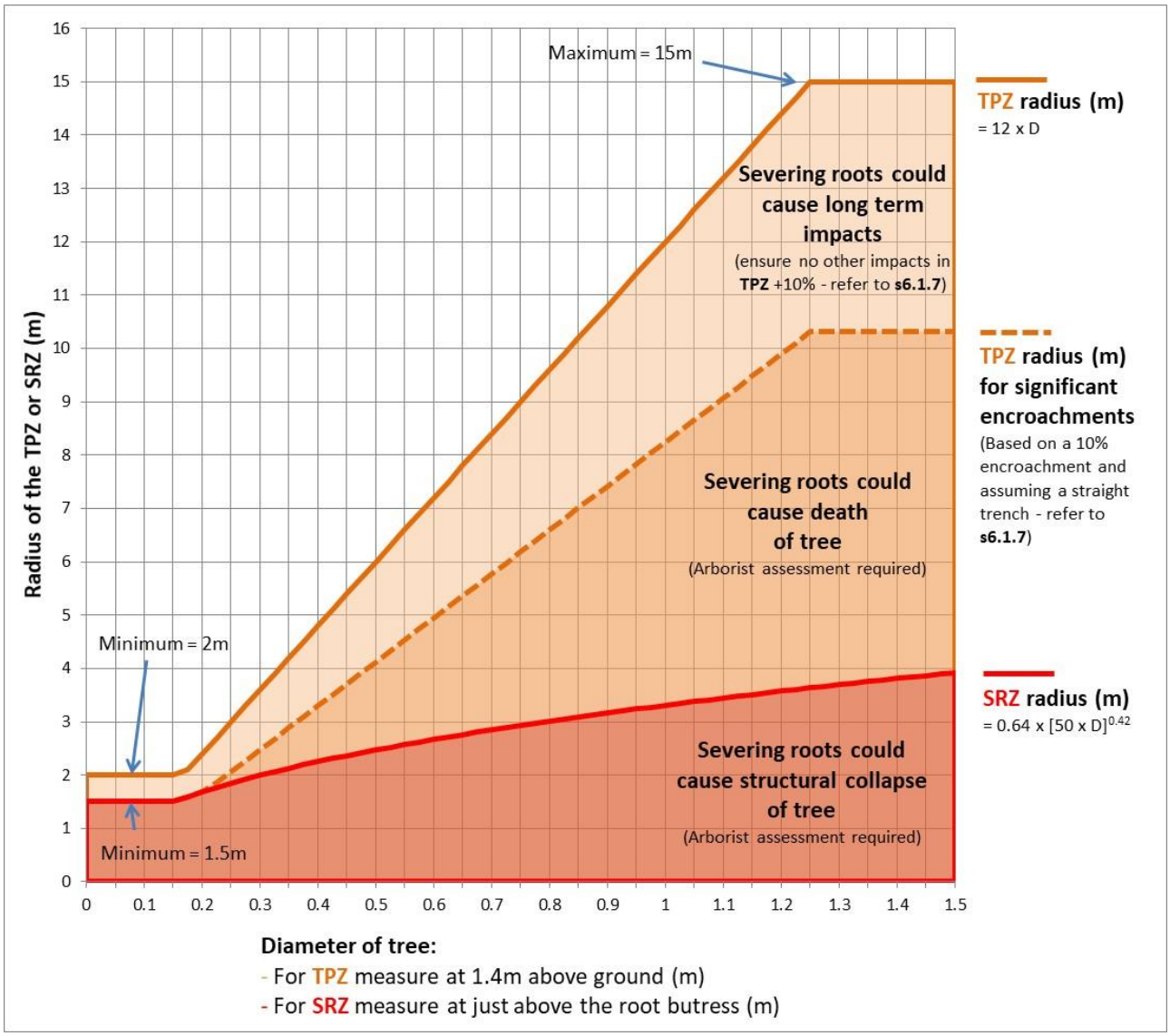


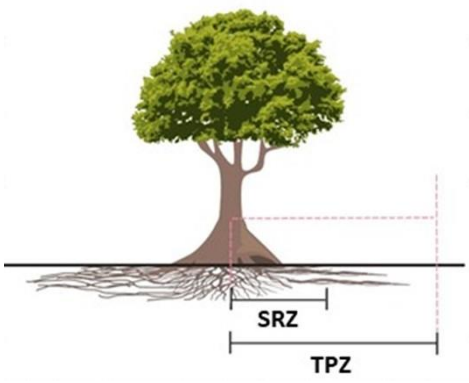
Vegetation provides a range of benefits



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

Figure 6.1-2: Calculating the TPZ and SRZ





Diameter at 1.4m above ground is used to calculate the TPZ

Diameter just above root buttress is used to calculate the SRZ

The root buttress is the local swelling of the stem at the base of a tree associated with the origin of a root.

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 bush rock, tree hollows, wetlands, mangroves, nests, aquatic or other sensitive habitats.

d) Retain native ground cover vegetation.

e) No importing mulch from other sites.

Specific controls apply to works in ecologically sensitive areas

f) 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 (ie 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 may impact *Aboriginal cultural heritage* or *non-Aboriginal heritage* trees refer to sections 7.1 and 7.2.

6.1.4. Works in national park estate

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

a) When undertaking inspection, maintenance and *emergency works* in national park estate, comply with the National Parks protocol and consent. Conditions include:

- Provide 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.
- Provide at least 2 weeks' notice and a *CRA* for maintenance works. The maintenance notification / *CRA* template can be generated from the WebGIS EL.
- Provide 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 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 authorised (refer to Figure 6.1-1).

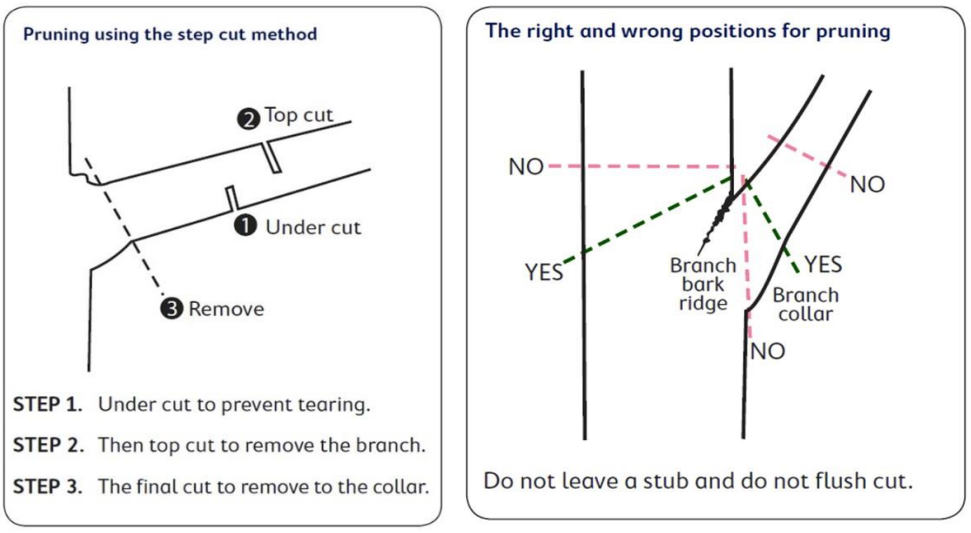
a) Pruning tree limbs > 100mm diameter should be under the direction of *workers* trained in an Ausgrid recognised tree trimming course and familiar with AS 4373 Pruning of amenity trees (unless for *emergency works*).

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 6.1-3).

Figure 6.1-3: Correct pruning techniques



6.1.7. Trenching and excavating

Assess the site

a) Use Figure 6.1-2 to determine the radius of the *SRZs* and *TPZs* that may overlap the excavation (or use the TPZ/SRZ Calculator).

b) Take into account any recent incursions into the *SRZ* and their potential impacts to tree stability. Examples may include a new kerb and gutter or evidence of trenching.

Locate the trench to minimise damage

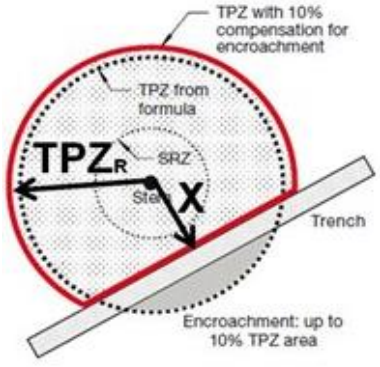
(Refer to Figure 6.1-2 to calculate *TPZ* and *SRZ*.)

c) Trench / excavate outside the *TPZ*, where practicable.

d) Consider underboring/directional drilling at least 600mm beneath the ground surface or use *non-destructive digging* to avoid impacting the *TPZ*.

e) Unless approved by an arborist or council tree preservation officer:

- No excavations, severing of roots or use *non-destructive digging* within the *SRZ*.
- No significant encroachments into the *TPZ* (> 10% of the area of the *TPZ*).
- For non-significant encroachments into *TPZ* (< 10% of the area of the *TPZ*), minimise the extent impacted and ensure no other project impacts within the rest of the *TPZ* + 10%.



For non-significant encroachments into TPZ, ensure no other impacts within TPZ + 10%

Wherever possible leave roots intact

Implement controls to minimise root damage

f) If roots need to be severed - refer to c), d) and e), 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.

g) Where roots are exposed for extended periods of time, wrap larger roots (> 50mm diameter) in jute mesh or hessian and keep moist.

h) Avoid discharging water on an ongoing basis in the same area as it may waterlog the soil and affect the tree's health.

i) Wash down plant and equipment outside the *TPZ*.

Reinstate the site

j) Minimise changes in soil levels in the *TPZ*. Where increases are unavoidable in the *TPZ*, use porous fill material.

k) Consider retaining top soil and spread back on the backfilled trench surface to maintain the integrity of the seed bank (to allow faster regrowth).

l) Avoid compaction in the *TPZ*.

m) If surface sealing around trees is required, use a material which allows aeration (eg gravel, unit pavers, coarse sand).

6.2. WILDLIFE

Background

Wildlife habitat includes areas that provide feeding, 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 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 *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 an approval may be required.

Contact local wildlife rescue organisations for the rescue or care of wildlife (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 and areas with tree hollows, bush rock and nests.

6.2.1. Pre-work checks

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

b) Check for known known *wildlife sensitive areas* (refer to WebGIS EL and look for any local signage).

c) Visually check for tree hollows, bush rock, nests and evidence of wildlife (animals that may be using our network as habitat eg 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 bush rock, tree hollows, wetlands, mangroves, nests, aquatic or other sensitive habitats.

d) Retain native ground cover vegetation.

e) No importing mulch from other sites.

f) 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 (ie no new clearance envelopes).

6.2.3. Wildlife on and around the network

Wildlife can use poles, substations, pits and other buildings and structures for roosting, nesting or seeking refuge from predators.

a) Inspect the worksite for animal occupation prior to starting works.

b) Where animals are present (such as birds, possums, snakes, bats) wait for the animal to relocate.

c) Cover trenches and pits if left overnight to prevent animals from getting trapped. Provide an escape route (eg log or stick) for animals if trenches or pits will be open for long periods.

d) Where animals (including eggs and nests) need to be physically relocated, rescued, or require care, contact a local wildlife rescue organisation, licensed wildlife handler or *NPWS*.



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.

For Ausgrid employees rescuing a deceased flying fox possibly carrying a live pup:

Flying fox pup rescued from powerline

a) Never attempt to rescue a live adult flying fox.

b) Contact a wildlife rescue organisation (refer to section 10) and obtain details of the rescuer.

c) Overhead crew must contact the rescuer within a reasonable time prior to attending the worksite to ensure they are present to collect the live pup.

d) For the safe removal of animals, follow HS000-W0127 Flying-Fox (Bat) Live Pup & Lifeless Adult removal from overhead mains.

e) Any live animals must be handled by a local wildlife rescuer.

f) Deceased animals should be placed in a plastic lined box or plastic bag and disposed as general solid waste at your nearest Ausgrid depot.

6.2.5. Bee swarms and hives

If a bee swarm or hive is encountered on electrical infrastructure:

a) Do not attempt to kill or interfere with the bees as it is likely to anger the bees and they may sting.

b) Contact a local beekeeper (refer to section 10) to remove the swarm and place it in a beehive. Many local beekeepers will collect re relocate swarms in their local area. There may be a small fee to cover their expenses.

Bee swarm on a 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 within a powerful owl breeding territory.

When working near powerful owl breeding territories:

Powerful owl

General conditions include (all year round):

b) All *workers* to be made aware of powerful owl breeding territories in the area.

c) Noisy works (chainsaw, mulching) must not be carried out an hour before sunset or an hour after sunrise OR within 100m of identified roost sites.

d) Contact *NPWS* Area Office if impacting large hollow-bearing trees (tree diameter > 80cm) and hollows > 30cm diameter.

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/river) 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 prior to works commencing (refer to section 10).

j) No works are to be undertaken within 100m of an identified nesting tree or recorded observation site during the breeding season without undertaking an inspection for nesting owls.

k) Only hand tools to be used within 50m of roost trees and 100m of nest trees if works are unavoidable during the breeding season.

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 the 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 transport 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.

A specialist assessment may be required.

Definitions

Biosecurity means preventing weeds, pests and pathogens threatening the economy and environment.

6.3.1. Pre-work checks

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

b) Check for national park estate (refer to WebGIS EL).

c) Check for the presence of weeds and pathogens (refer to weed identification tool, Figure 6.3-1 and look out for any *biosecurity* signage).

d) For agricultural properties, check with the landowner if there are any *biosecurity* requirements.

Plant and equipment need to be disinfected before entering bushland or leaving infested areas

6.3.2. Works in bushland 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 between properties.

b) Minimise the vehicle and equipment movements on the worksite.

c) Minimise the number of worksites visited in one day.

d) Establish entry and exit points away from infested areas, where practicable.

e) Program works from least to most infested areas, where practicable.

f) Schedule works for a day when the soil is dry and doesn't stick to footwear, equipment and tools, where practicable.

g) When in national park estate, comply with the National Parks protocol and consent (refer to section 6.1).

h) When in *ecologically sensitive areas*, do not import mulch from other sites.

At site entry and exit

i) Choose clean down sites:

- where soil and seed matter would be contained
- away from *waterways* and drains
- close to infested areas (if practicable).

Come clean, go clean

j) Prior to entering 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 before disinfecting with a solution of 70% methylated spirits and 30% water applied through a spray bottle.

k) Look for signage that may indicate *biosecurity* risks or practices that need to be followed. If in doubt, contact the landowner.

Note: Certain practices on agricultural properties may impact their agriculture accreditation and income.

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

During and after works

m) Use existing roadways or access tracks.

n) When disposing of weeds or pathogen infected plants:

- bag weeds and infested tree branches, where practicable
- cover loads to prevent seeds and other live plant material from dispersing
- contact the receiving facility prior to delivery.

o) Where off-site disposal cannot be undertaken, plants that are not in seed can be left where found.

p) Change and launder work clothes after working in areas containing known weeds, pests or pathogens.

Figure 6.3-1: 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

Within the *Bushfire Danger Period* and at the beginning of work shifts, *workers* should be alert for the possibilities of pending heatwaves and/or declarations of Total Fire Bans (TFB).

Hot works during a total fire ban need to comply with an exemption

Ausgrid's System Control is notified of *TFBs* by the NSW Rural Fire Services (RFS). System Control will send SMS alerts to key Ausgrid employees and email notifications to regional managers upon receiving the *RFS* notice. *TFB* details are also posted on the RFS website.

Workers should be mindful that works on those days may be postponed, require additional risk assessments, higher levels of bushfire risk mitigation and control measures, *Hot Works* Permits and/or notification to the local *RFS* or NSW Fire and Rescue command centre.

Definitions

Bushfire Danger Period typically runs from 1 October to 31 March but may vary.

Bushfire prone land means land identified by local council which can support a bushfire or is subject to bushfire attack. *Bushfire prone land* maps are certified by the Commissioner of the *RFS*.

Clause 6 exemption is a specific exemption relating to 'Services and utilities—construction, essential repairs or maintenance'. It must be gazetted by the *RFS* Commissioner on the day and contains certain conditions such as having adequate firefighting equipment and contacting *RFS* or NSW Fire and Rescue.

Hot works includes any mechanically assisted activity which requires the deliberate use or production of flames, fire, sparks or incandescent materials. *Hot works* include welding, oxy-cutting, brazing, grinding and heat treatment works.

Live works means works on exposed mains and apparatus that are energised.

Out in the open excludes enclosed areas which are devoid of bushland and/or natural fuel loads, such as inside buildings, workshops, basements, within pits and trenches, or within the confines of man-made structures.

RFS is the NSW Rural Fire Services.

TFB is Total Fire Ban.

6.4.1. Pre-work checks

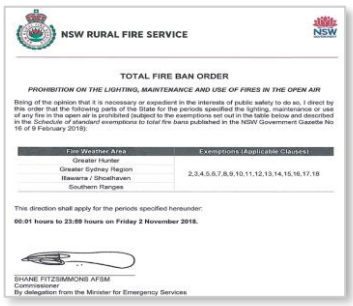
a) Check whether a *TFB* has been declared on the day and for the location of the works RFS website.

System Control will send SMS alerts to key Ausgrid employees.

If a *TFB* is declared:

b) Consider alternative work practices to avoid *hot works* or *live works out in the open*.

c) Check for *bushfire prone land* on the WebGIS EL.



NSW RURAL FIRE SERVICE

TOTAL FIRE BAN ORDER

PROHIBITION ON THE LIGHTING, MAINTENANCE AND USE OF FIRES IN THE OPEN AIR

Being of the opinion that it is necessary or expedient in the interests of public safety to do so, I direct by this order that the following parts of the State for the periods specified the lighting, maintenance or use of any fire in the open air is prohibited (subject to the exemptions set out in the table below and described in the Schedule of *standard exemptions to total fire bans* published in the NSW Government Gazette No 16 of 9 February 2018):

Fire Weather Area	Exemptions (Applicable Clauses)
Greater Hunter	
Greater Sydney Region	2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18
Illawarra / Shoalhaven	
Southern Ranges	

This direction shall apply for the periods specified hereunder:

00:01 hours to 23:59 hours on Friday 2 November 2018.

SHANE FITZSIMMONS AFSM
Commissioner
By delegation from the Minister for Emergency Services

Example of TFB order.

d) Check whether the *RFS* Commissioner provided a *Clause 6 exemption*.

e) Check the requirements of any applicable *RFS* or Fire or Rescue NSW approval**.**

f) Consider other activities that may start a fire and ensure controls are adequate to manage the risk (eg driving through long grass, discarding cigarette butts).

6.4.2. Works during Total Fire Ban days

If undertaking *live works* in *bushfire prone land* or *hot works* during a *TFB* follow the process in Figure 6.4-1:

a) Where possible use alternative methods to avoid *hot works* or *live works*.

b) A *Clause 6 exemption* needs to be gazetted on the day of the *TFB* or works must be cancelled.

c) Construction works will require approval from *RFS* or Fire and Rescue NSW.

d) To identify the nearest local fire authority contact either:

- *RFS* Information line on 1800 679 737
- NSW Fire and Rescue on 1800 422 281, 02 9265 2999 or 000/112 (emergency)

Ausgrid employees can find more information in NW000-T0107 Total Fire Bans.

6.4.3. General requirements for all hot works

a) Light and maintain fires in a manner which will prevent 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* to lower Fire Danger Rating periods (as declared by *RFS*), where practicable.

e) Keep *hot works* clear of combustible matter by at least 3m.

f) Isolate *hot works* using appropriate warning barriers and signage.

g) Keep adequate firefighting equipment immediately on hand.

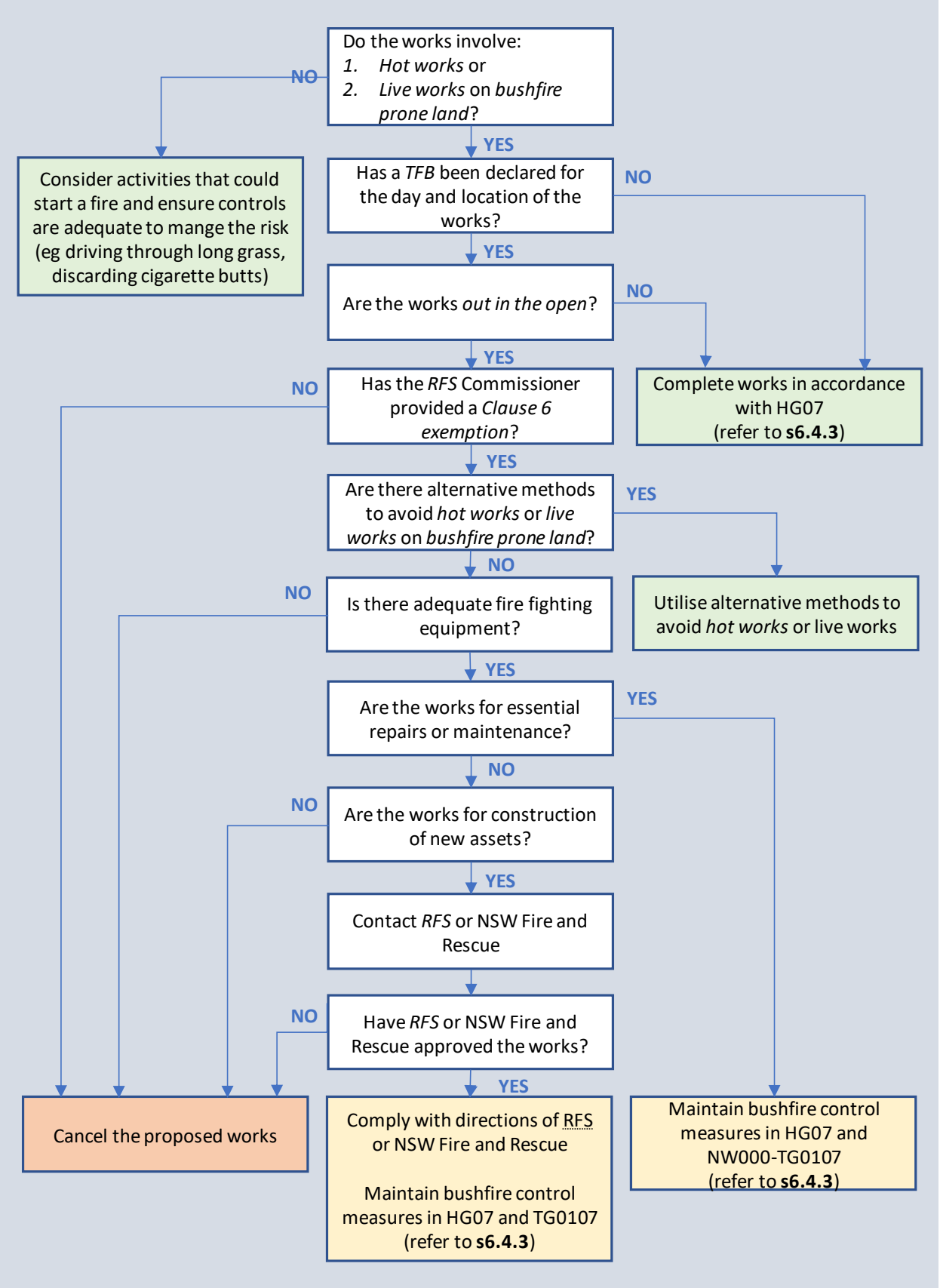
Ausgrid employees can find more information in NW000-T0107.

Comply with other requirements relating to *hot works* and bushfires. Processes for Ausgrid employees can be found in:

- *hot works* permits (HG-07)
- *hot works* near service stations (NW000-T0076)
- *hot works* near plastic gas pipes (DG 11)
- management of fire damaged *CCA* poles (NEG SE09).

Specific controls apply for handling burnt CCA poles

Figure 6.4-1: Process for managing works during a TFB



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 groundcover).

Potential impacts to *Aboriginal cultural heritage* must be assessed and managed in accordance with legal requirements. Specialist assessments, consultation, permits, approvals and restrictions apply.

When to contact Environmental Services
02 9394 6659

a) Incidents involving *Aboriginal cultural heritage*.

b) Works may 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 may be required.

Definitions

Aboriginal cultural heritage includes objects and places. Objects provide physical evidence of the use of an area by Aboriginal people (eg stone, wood and shell artefacts). Examples of Aboriginal objects are shown in Figure 7.1-4. Places are areas of land that have special significance to Aboriginal people (eg spiritual, historical, social, educational, and natural resource use).

Aboriginal cultural heritage sensitive areas include both areas with natural rock outcrops and *undisturbed land* which is either:

- 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 7.1-1 and Figure 7.1-2 for examples.

Figure 7.1-1: Examples of undisturbed

Figure 7.1-2: Examples of disturbed land

7.1.1. Pre-work checks

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

b) Figure 7.1-3 and WebGIS EL can be used to determine the requirements for *Aboriginal cultural heritage*.

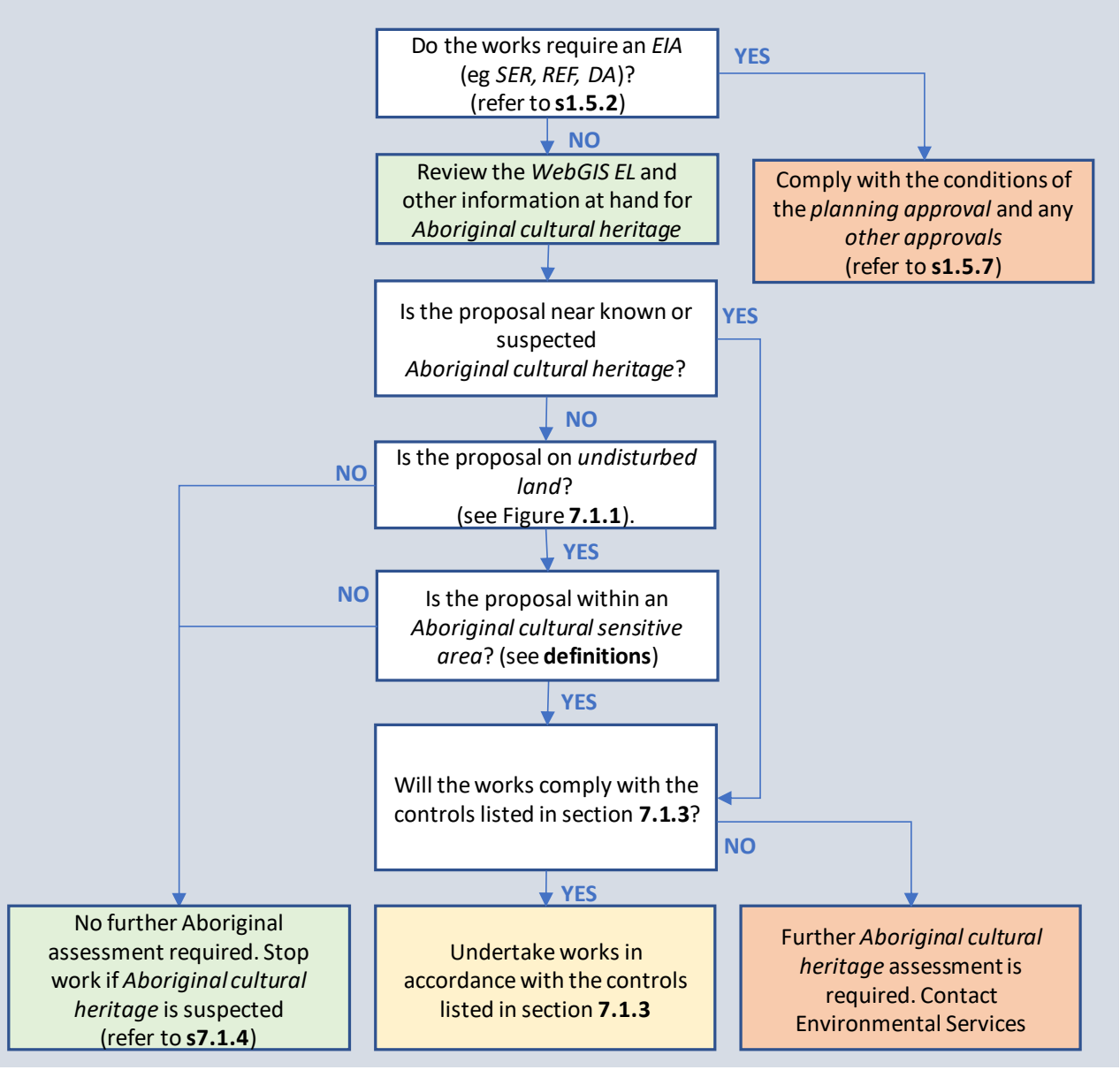
c) Visually check the work area for possible *Aboriginal cultural heritage* (refer to examples in Figure 7.1-4).

7.1.2. General requirements

a) Use Figure 7.1-3 to determine the process for assessment of *Aboriginal cultural heritage*.

b) Works which may impact *Aboriginal cultural heritage* require an *AHIP*.

Figure 7.1-3: Process for assessing Aboriginal cultural heritage



7.1.3. Working near or within Aboriginal cultural heritage and sensitive areas

Works near *Aboriginal cultural heritage* or in *Aboriginal cultural heritage sensitive areas* will require further assessment and possible *AHIP* unless all the following controls are implemented:

a) All *workers* to be made aware of the presence of *Aboriginal cultural heritage* in the area and the need to avoid impacts.

b) No disturbance of the ground surface.

c) No disturbance of rock outcrops and native ground cover.

d) Where available keep to existing roadways or access tracks.

e) Use plant and equipment that would not disturb rock outcrops (eg rubber tyres).

f) 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 (ie no new clearance envelopes).

7.1.4. 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.

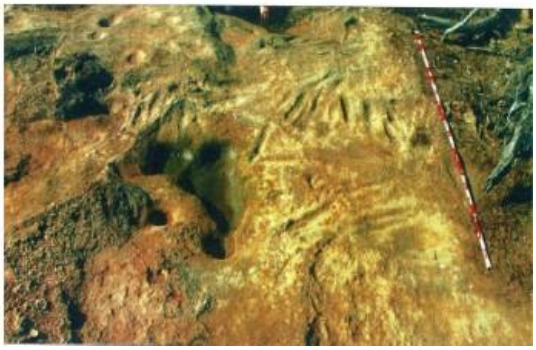
If human remains (or suspected remains) are found during the works, all works in the vicinity must cease. The worksite must be secured and the NSW Police and NPWS must be notified immediately.

Figure 7.1-4: Examples of Aboriginal cultural heritage

Stone flakes (product of tool making)

Shell midden (debris from eating shellfish and other food)

Scarred tree (once used for smoking ceremonies for burials or canoe making)



Grinding grooves (once used for making tools)

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.

Heritage can include buildings, cobblestone roads, sandstone gutters, trees, parks, electrical equipment and archaeological sites. Classes of heritage significance include Local, State, National and World.

Ausgrid owns around 200 heritage listed substations of either state or local heritage significance and maintains a register of 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 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 required *planning approval* or *other approvals* (refer to section 1.5).

b) Table 7.2-1 and WebGIS EL can be used 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:

- 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
- the requirements in Table 7.2-1 are complied with when working on or near *non-Aboriginal heritage.*

Note: Items may 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 require a heritage assessment and/or approval, unless works involve only minor repairs and maintenance to electrical infrastructure.
State	Impacts to State heritage items require a heritage assessment and/or approval, unless in accordance with an approved conservation management plan or in accordance with a S57 exemption or Ausgrid specific exemption.
Local	More than minor or inconsequential impacts to local heritage items require a statement of heritage impact, written notification to council and due consideration of council's response.
Where a relic may be discovered	Excavating any land which is likely to result in a *relic* being discovered, exposed, moved, damaged or destroyed requires an 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. Impacts to Ausgrid's movable heritage (Tier 2) require a Photographic Archival Recording in accordance with EF 17440. The movable heritage register and form are available to Ausgrid employees.
Ausgrid's S170 register	Demolition, removal or sale of heritage items on Ausgrid's S170 register (Ausgrid employees) require referral to the Heritage Council of NSW.
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 Ausgrid's 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 in archaeological areas. In some cases, these exemptions/exceptions require notification/agreement from the Heritage Council of NSW.

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 Council of NSW if required.

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 Heritage Council of NSW must be notified immediately.

Figure 7.2-1: Examples of different classes of non-Aboriginal heritage

Unexpected discovery of a relic.

Ausgrid movable heritage switchgear

Ausgrid S170 heritage substation. Also, Local heritage

Potential heritage – sandstone gutter

State heritage – Potts Hill Reservoirs

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.

Sustainable procurement aims to deliver positive social, environmental, governance and economic outcomes for the communities we work in.

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.

8.1.1. Pre-work checks

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

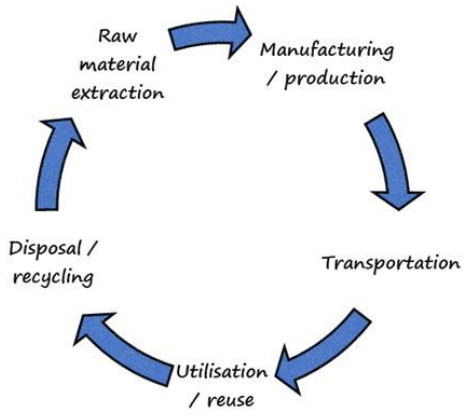
b) Ausgrid employees can check the requirements of our sustainable procurement process.

c) Consider all life cycle stages when procuring products and services (Ausgrid employees can use Be Safe Pro14.1F Risk Assessment Worksheet for Purchasing Goods).

8.1.2. Resource efficiency hierarchy

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 may need specific engineering, safety or environmental advice. However, some options to consider include:



A life cycle perspective

Avoid and reduce

- use recycled materials for construction and groundwork
- use timber from sustainable sources and avoid imported timber sourced from native or old growth forest
- 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 orders and exemptions (refer to section 5.4)
- reuse concrete, bricks, 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 may be suitable for other sites
- return excess building materials and *SF6* 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, and if so, whether a water use exemption applies to the works.

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 website below for the most up to date information:

- Sydney Water www.sydneywater.com.au
- Central Coast Council www.centralcoast.nsw.gov.au
- Hunter Water www.hunterwater.com.au (includes areas of Cessnock, Lake Macquarie, Maitland, Newcastle, Port Stephens, and small parts of Singleton)
- Singleton Council www.singleton.nsw.gov.au
- Muswellbrook Shire Council www.muswellbrook.nsw.gov.au
- Upper Hunter Shire Council www.upperhunter.nsw.gov.au.

8.2.3.When no water restrictions are in place

When there are no water restrictions, then water saving rules relevant to the water supply authority will apply (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) may 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 (eg no oil, hydraulic fluid or degreaser).

b) Use only ‘quick break’ detergents to allow any oil in the water to be quickly separated from the water (allows the oil to rise to the surface and form larger droplets allowing for better removal from the plate separator).

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 5.3.5).

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.

Definitions

IPART is Independent Pricing and Regulatory Tribunal NSW.

Sensitive areas include areas described in sections 3.3, 4.2, 6.1, 6.2, 7.1 and 7.2.

Certain incidents need to be immediately reported to the regulator

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.

d) Any leaks from underground infrastructure (eg tanks and cables).

e) Any oil or chemical spill of 20L or greater in any location (including in bunds, pits etc).

Other environmental incidents

a) Unauthorised exposure to 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) *SF6* leaks > 5kg.

m) Any other incidents with environmental regulator involvement.

In the case of an incident, Ausgrid 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.

Ausgrid employees should immediately 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*. *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 certain levels (testing may be required) must be reported to the *EPA*.
Breach of Planning Code	A breach of the Planning Code (eg 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 the Heritage Council of NSW.
Threatened species	Harm to Commonwealth threatened species must be reported to the Commonwealth Department of Agriculture, Water and the Environment.

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. Ausgrid 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) Ausgrid 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*. Ausgrid and PLUS ES employees can check the PCB register or arrange tests with PLUS ES Chemical Testing Laboratory on 02 9410 5117.

k) For additional clean up material, Ausgrid employees can contact the nearest Ausgrid spill response trailer.

l) For pollution incidents, Ausgrid employees must immediately notify Environmental Services on 02 9394 6659 or 0412 070 574 (24 hours).

Note: If Environmental Services can't be reached, notify the EPA on 131 555 for spills caused harm or have the potential to cause harm to the environment.

m) Broom 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. Ausgrid employees can refer to EG 100 Oil Handling guidelines 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)
	NSW *RFS* (Bushfire Information Line)	1800 679 737
	State Emergency Services (SES) – Floods and storms	13 25 00
Reportable pollution incidents Ausgrid employees must contact Environmental Services in the first instance	1. EPA	131 555 (24 hours)
	2. SafeWork NSW	13 10 50
	3. NSW Fire and Rescue	1300 729 579 (000/112 for emergencies)
	4. Public Health Unit	1300 066 055
	5. Local council	Local government directory
Discovery of Aboriginal cultural heritage items *Ausgrid employees must contact Environmental Services in the first instance*	*NPWS*	*131 555* *02 9995 5555*
		1300 072 757 02 9995 6500
Discovery of Non-Aboriginal heritage items Ausgrid employees must contact Environmental Services in the first instance	Heritage Council of NSW	131 555 02 9995 5555
		02 9873 8500
Environmental issues	Ausgrid's Environmental Services	0412 070 574 (24 hours) 02 9394 6659 environmentalservices@ausgrid.com.au
Ausgrid		
Enquiries	Contact Centre	13 13 65
Emergencies	Contact Centre	13 13 88
Safety	On call Health and Safety team	02 9585 5850 (24 hours) health&safety@ausgrid.com.au
Building and grounds maintenance	Property OneCall	1300 306 541 propertyonecall@ausgrid.com.au
Hazardous materials Asbestos Register, newly identified asbestos, NS211 or HG 20 enquiries, training	Hazmat Hotline	02 9394 6961 Hazmat@ausgrid.com.au
Sampling, asbestos in soil, illegal dumping on Ausgrid property	Senior Project Officer – HAZMAT	0417 295 157
Media enquiries	Media	02 9966 7985 (24 hours) news@ausgrid.com.au

Issue	Contact	Contact details
Mercury waste		
For undamaged waste mercury vials or chambers	Supply Chain Coordinator	02 9160 6808
Non-scheduled PCB oil disposal	Homebush Workshop	02 9394 6801
Pumping water	Aqueous Waste Services	02 8569 6712.(24 hours)
PCB disposal	Environmental Services	02 9394 6659 environmentalservices@ausgrid.com.au
Security	Security Operations	02 9269 2266 security.operations@ausgrid.com.au
Waste disposal	Veolia	13 29 55
Other external contacts		
Agriculture, biosecurity, pests weeds and diseases	Local Land Services Department of Primary Industries	1300 795 299 02 6391 3100
Bee swarms and hives	Local beekeepers	www.beekeepers.asn.au/swarms
Injured native wildlife Sydney and Central Coast	*WIRES*	1300 094 737 (24 hours)
	Sydney Metropolitan Wildlife Service	02 9413 4300 (24 hours)
Gosford	Wildlife Animal Rescue Care	02 4325 0666
Lower Hunter	Native Animal Trust Fund	0418 628 483 (24 hours)
Upper Hunter west of Singleton	Wildlife Aid	0429 850 089
Local council issues	Local council directory	www.olg.nsw.gov.au/public/local-government-directory/
Local fire authority	*RFS* Information line NSW Fire and Rescue	1800 679 737 1800 422 281 | 02 9265 2999 (000/112 for emergencies)
PCB testing	PLUS ES Chemical Testing Laboratory	02 9410 5117
Ports authorities	Sydney Ports Corporation Newcastle Port	02 9296 4999 (24 hours) 02 4274 4571 (24 hours)
Powerful owls	Birdlife Australia	03 9347 0757 powerfulowl@birdlife.org.au
Traffic incidents and road conditions reporting	NSW Roads and Maritime Services (RMS)	131 700
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 6572 1400 (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 (eg stone, wood and shell artefacts). Examples of Aboriginal objects are shown in Figure 7.1-4. Places are areas of land that have special significance to Aboriginal people (eg 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
AHD	Australian height datum
AHIP	Aboriginal heritage impact permit
APVMA	Australian Pesticides and Veterinary Medicines Authority
ARPANSA	Australian Radiation Protection and Nuclear Safety Agency
Articles	Includes equipment (eg transformers, switchgear, relays, switches and tap-changers).
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 Network Standards.
Asbestos Register	An Ausgrid register that identifies work locations where asbestos may be present and details what may 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
ASS	acid sulfate soils
ASSMP	An acid sulfate soil management plan prepared in accordance with the NSW ASS Manual and ASS Assessment Guidelines.
Biosecurity	Preventing 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 may vary.
Bushfire prone land	Land identified by local council which can support a bushfire or is subject to bushfire attack. *Bushfire prone land* maps are certified by the Commissioner of the *RFS*.
CCA	Copper Chrome Arsenic (common wood preservative).
CEMP	Construction environmental management plan. These typically apply to projects requiring an *REF, SIS* or *EIS*. It details conditions of approval and procedures for compliance (eg 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 by the *RFS* Commissioner on the day and contains certain conditions such as having adequate firefighting equipment and contacting *RFS* or NSW Fire and Rescue.
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	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 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 7.1-1 and Figure 7.1-2 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
DPIE	NSW Department of Planning, Industry and Environment
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 have a significant effect on 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*.
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.
Environmental Handbook	NS174C Environmental Handbook for Construction and Maintenance (this Handbook).

Term	Definition
Environmentally sensitive area	Defined in the mulch RRO and include *ecologically sensitive areas* described in section 6.1.
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
EWP	elevated work platform
Exempt development	Development that does not require an *EIA* or *planning approval*, providing the works meet certain conditions.
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.
GHS	Globally Harmonised System of Classification and Labelling of Chemicals.
HAC	hazard assessment conversation
HAZCHEM	hazardous chemicals
HAZMAT	hazardous materials
High field work environments	Areas where *EMF* may 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 mechanically assisted activity which requires the deliberate use or production of flames, fire, sparks or incandescent materials. *Hot works* include welding, oxy-cutting, brazing, grinding and heat treatment works.
Hz	hertz
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	Licensed Asbestos Assessor
LAR	Licensed Asbestos Removalist
LCD	lead containing dust
Live works	Works on exposed mains and apparatus that are energised.
m	metre
MEPS	Minimum Energy Performance Standards

Term	Definition
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 may 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, hydro vacuum excavation, air excavation, air knifing or vacuum excavation.
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
NTU	Nephelometric turbidity units, which is the measurement unit 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 enclosed areas which are devoid of bushland and/or natural fuel loads, such as inside buildings, workshops, basements, within pits and trenches, or within the confines of man-made structures.
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 Ausgrid holds 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.
pH	Potential of hydrogen, which is the measure of the acidity or alkalinity of a solution and is a key indicator of water quality.
Planning approval	The approval of the *EIA* to undertake certain works under the EP&A Act.
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).
PVC	polyvinyl chloride

Term	Definition
RAP	remediation action plan
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.
Recovered fines	A soil or sand type material (particle size < 9.5mm) derived from the processing of mixed construction and demolition waste.
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
RF EME	Radiofrequency electromagnetic energy or electromagnetic radiation. *RF EME* continues to travel away from the source even after the source is turned off.
RFS	NSW Rural Fire Services
RMP	A site or project specific risk management protocol.
RMS	NSW Roads and Maritime Services
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 Ausgrid employees from ChemAlert.
Sensitive areas	Include areas described in sections 3.3, 4.2, 6.1, 6.2, 7.1 and 7.2.
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 may 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, prepared in accordance with Part 5 of the EP&A Act and approved by Ausgrid.
SF6	sulphur hexafluoride
SIS	A species impact statement that is prepared for proposals that are likely to have a significant effect on 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.
Standard operating hours	Monday to Friday – 7am to 6pm, Saturday – 8am to 1pm, and Sundays or public holidays - no work.
TFB	Total Fire Ban

Term	Definition
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.
TSMP	Ausgrid's Tree Safety Management Plan.
Turbidity	The cloudiness of a liquid from suspended particles and is a key indicator of water quality.
UST	underground storage tank
VENM	Virgin excavated natural material, which is natural material that comes from undisturbed areas that are not contaminated (refer to section 5.1).
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, lagoon or lake.
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 and areas with tree hollows, bush rock and nests.
WIRES	NSW Wildlife Information, Rescue & Education Service Inc.
Workers	Ausgrid 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.