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Preface

This standard was prepared by the Rail Corridor Management Development Group, overseen by the RISSB Infrastructure Standing Committee.

Objective

This document specifies the requirements for fire prevention and control and vegetation hazard management within the rail corridor to be undertaken by the Rail Infrastructure Managers (RIM).

The fire prevention and control requirements include:

(a) undertaking a suitable and sufficient assessment of the risks;

(b) carrying out proactive management of risks to prevent the occurrence of fire within the rail corridor;

(c) having in place appropriate equipment for the suppression of minor ignitions;

(d) fire suppression training and basic awareness

(e) undertaking the reactive management of incidents in coordination with the emergency services; and

(f) implementing a risk management approach based on AS 31000 or other suitable standard(s).

This document's management of vegetation hazards section specifies that risks to the infrastructure (such as obscuring sight lines for signals, signage, level crossings) are assessed and appropriate control measures implemented. This ensures that the risks to railway operations and activities are reduced so far as is reasonably practicable (SFAIRP).

These requirements aim to control the impacts of vegetation hazards on safety risks, rail operations and assets, including damage to electrification systems, damage to train control and communication systems, trespass and illegal clearance. This document provides risk based strategies for RIMs to manage hazards presented by noxious weeds, pests and pathogens, in order to limit their spread within the rail corridor and to surrounding areas.

RIMs have a legal requirement to adopt protections for biodiversity within the rail corridor. This Standard provides guidance for RIMs to undergo environmental assessments and to seek approvals and/or permits for activities impacting biodiversity.

Compliance

There are four types of provisions contained within Australian Standards developed by RISSB:

(a) Requirements.

(b) Recommendations.

(c) Permissions.

(d) Constraints.

Requirements – it is mandatory to follow all requirements to claim full compliance with the Standard. Requirements are identified within the text by the term 'shall'.

Recommendations – do not mention or exclude other possibilities but do offer the one that is preferred. Recommendations are identified within the text by the term 'should'.

Recommendations recognize that there could be limitations to the universal application of the control, i.e. the identified control is not able to be applied or other controls are more appropriate or better.

Permissions – conveys consent by providing an allowable option. Permissions are identified within the text by the term 'may'.

Constraints – provided by an external source such as legislation. Constraints are identified within the text by the term 'must'.

For compliance purposes, where a recommended control is not applied as written in the standard it could be incumbent on the adopter of the standard to demonstrate their actual method of controlling the risk as part of their WHS or Rail Safety National Law obligations. Similarly, it could also be incumbent on an adopter of the standard to demonstrate their method of controlling the risk to contracting entities or interfacing organisations where the risk may be shared.

RISSB Standards address known hazards within the railway industry. Hazards and clauses within this Standard that address those hazards, are listed in Appendix A.

Appendices in RISSB Standards may be designated either "normative" or "informative". A "normative" appendix is an integral part of a Standard and compliance with it is a requirement, whereas an "informative" appendix is only for information and guidance.

Commentary

Commentary *C Preface*

This Standard includes a commentary on some of the clauses. The commentary directly follows the relevant clause, is designated by 'C' preceding the clause number and is printed in italics in a box. The commentary is for information and guidance and does not form part of this document.

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Section 1 Scope and general

1.1 Scope

This document covers rail networks classified in AS 7630, *Railway Infrastructure – Track Classification*.

This document is not specifically intended to cover urban on-street tramway or light rail networks, cane railways or heritage railways operating on private reservation but items from this document may be applied to such systems as deemed appropriate by the relevant RIM.

This document includes requirements for:

(a) fire prevention and control;

(b) vegetation management;

(c) the control of noxious weeds, pests and pathogens; and

(d) biodiversity management within the rail corridor.

1.2 Normative references

The following documents are referred to in the text in such a way that *some* or all of their content constitutes requirements of this document:

- AS 4373, *Pruning of Amenity Trees*
- AS 7630, *Railway Infrastructure – Track Classification*
- AS/NZS ISO 31000, *Risk Management – Principles and Guidelines*
- ISO 14001, *Environmental Management*
- Environment Protection and Biodiversity Conservation (EPBC) Act, 1999

NOTE:

Documents for informative purposes are listed in a Bibliography at the back of this document.

1.3 Defined terms and abbreviations

For the purposes of this document, the following terms and definitions apply:

1.3.1

biodiversity site
physical area of land or water containing biological assets with attributes, such as the presence of rare or threatened flora, fauna or habitat required for their survival or threatened vegetation communities. Also, **rare flora** and **fauna reserve**

1.3.2
contractor
individual or organisation engaged under contract by the RIM or RTO to perform services which can require access to the rail corridor

1.3.3
combustible material
fuel sources that pose fire risks such as dead and dry vegetation, waste products and flammable liquids

1.3.4
control measures
systems, procedures, training and equipment intended to control identified risks

1.3.5
fire
unplanned event involving flame, smouldering or smoke

1.3.6
fire management plan
formal document including clear bushfire management policies, procedures, plans and operational policies, setting out the RIM's objectives, responsibilities and standards for fire mitigation, specifying management and control systems and identifying roles and responsibilities in relation to bushfire mitigation, which ensures outcomes are reported and reviewed

1.3.7
maintenance
maintaining the integrity of all rail infrastructure to standards acceptable to the RIM

1.3.8
noxious weed
plant species that has been designated by a country, state/territory or local statutory body as one that is injurious to agricultural or horticultural crops, natural habitats, ecosystems, humans or livestock.

Note 1 to entry: This definition includes declared weeds.

1.3.9
operations
operations of trains and stations and any other activity carried out on controlled infrastructure or at stations by RIMs, other RTOs or their contractors

1.3.10
pathogen
agent that causes disease, especially a living microorganism such as a bacterium or fungus

1.3.11
pests
vertebrate and invertebrate species designated by a country, state/territory or local statutory body as one that is injurious to agricultural or horticultural crops, natural habitats, ecosystems, humans or livestock

1.3.12
protected native animals
species or individual native animal that is protected by legislation

1.3.13
protected native vegetation
species or individual native vegetation that is protected by legislation

1.3.14
rail corridor
land between the boundary fences over which a railway line passes or, where there are no fences, the area that extends 15 metres from the outermost rail, leased or otherwise utilized by the RTO

1.3.15
rail infrastructure manager (RIM)
As defined in Rail Safety National Law.

General rail industry terms and definitions are maintained in the RISSB Glossary. Refer to: https://www.rissb.com.au/glossary/

Section 2 Fire prevention and control

2.1 General

The RIM shall ensure that fire prevention and control risks are managed with respect to the type and extent of fuel present. These prevention measures shall include the adoption of controls to ensure the safety of people, property and the environment.

The chance of a fire spreading throughout the corridor and potentially to neighbouring properties is influenced by the type, amount and arrangement of vegetative and other fuel types, as well as the prevailing weather conditions.

The RIM is responsible for the proactive management of risks and hazards to reduce the occurrence of fire within the rail corridor and shall have in place:

(a) appropriate processes to reduce the risk of fires; and

(b) suitable equipment to support the defined processes.

RIMs must comply with relevant Federal, State or Territory and local regulations such as the Environment Protection and Biodiversity Conservation (EPBC) Act, 1999 in regard to the mitigation and prevention of fires. This Act identifies activities that are likely to have environmental impacts and how these impacts are properly assessed and managed.

2.2 Principles for fire prevention and controls

The RIM shall undertake a suitable and sufficient assessment of the risks to the safety of the workforce, passengers and the public arising from a fire caused by, or affecting, their operations.

The RIM shall be responsible for:

(a) the proactive management of risks to prevent the occurrence of fire within the rail corridor;

(b) having in place appropriate equipment for suppressing small ignitions where appropriate; and

(c) the reactive management of incidents in coordination with the emergency services.

The RIM shall implement a risk management approach.

This approach should be based AS/NZS ISO 31000*,* Risk Management or other suitable standard(s).

The RIM shall implement measures to control those risks to SFAIRP.

The RIM shall provide sufficient training for employees and mandate competency requirements for rail corridor users (e.g., train crew, rail safety contractors) to implement the activities required by the identified measures.

Fire risk control measures shall address the following objectives:

(d) reduce the likelihood of a fire occurring;

(e) take steps to help reduce the spread and intensity of a fire; and

(f) mitigate the effects of fire on people, property and the environment.

2.3 Requirements

2.3.1 General

The RIM shall develop and implement a documented fire prevention and control plan that includes:

(a) clearly defined objectives;

(b) roles, responsibilities; and

(c) operational procedures for preventing, mitigating and responding to fire risks.

The fire prevention and control plan shall be risk-based and make allowance for seasonal, geographic and operational variables.

2.3.2 Fire risk identification and assessment

RIMs shall have processes in place to identify and assess fire risks within the rail corridor. The processes to identify and assess fire risks within the rail corridor shall include:

(a) the identification of ignition sources including maintenance activities, rolling stock and trespass;

(b) mapping of high-risk areas, vegetation fuel loads, climatic fire weather conditions and historical fire events; and

(c) the prioritisation of areas based on potential impact to critical infrastructure, operations and neighbouring properties.

See Appendix B for a detailed list of fire hazards within the rail corridor

2.3.3 Prevention and preparedness

Fire prevention and preparedness involves proactive measures to reduce the risk of fire and minimize its impact. RIMs shall ensure:

(a) vegetation and fuel management strategies have been identified and implemented, including:

  (i) asset protection zones (APZs);

  (ii) routine slashing or spraying;

  (iii) use of low-flammability vegetation or groundcover when installing new areas where applicable;

(b) scheduled corridor inspections have been conducted pre- and post-fire season;

(c) the effective management of rubbish, stored materials and combustible infrastructure components;

(d) the requirements for hot work, track grinding or mechanical slashing including fire watch and suppression readiness; and

(e) that seasonal fire bans and restrictions, including procedural controls are implemented.

2.3.4 Firefighting capability

RIMs should have the necessary capabilities to manage and extinguish fires where applicable in order to protect people, property and the environment. This should include:

(a) a list of firefighting tools, equipment and minimum specifications;

(b) locations and access to water sources or tanks in remote areas;

(c) access and egress mapping for emergency response vehicles and appliances; and

(d) guidelines for helicopter or aerial suppression coordination (if applicable).

2.3.5 Response and coordination

RIMs shall ensure effective fire response and coordination through the implementation of the following:

(a) fire detection, notification and escalation procedures;

(b) roles and responsibilities for on-site personnel and emergency liaisons;

(c) communication protocols with emergency services and internal control centres;

(d) site evacuation procedures, including protection of rail staff and passengers; and

(e) integration within the safety management system and emergency management plans.

Fire response and coordination involves a structured and efficient approach to managing fire incidents.

2.3.6 Environmental and regulatory requirements

RIMs shall ensure that environmental legislative requirements and other applicable laws are adhered to when implementing a fire prevention and control plan. Factors to take into account shall include:

(a) protection of sensitive environmental areas and biodiversity assets;

(b) compliance with federal and state legislation including state-based bushfire management codes and prescribed burn guidelines; and

(c) controlled burning plans and permits (where applicable).

2.3.7 Contractor and third-party requirements

RIMs shall ensure that contractors are managed effectively to ensure that they comply with site fire prevention and control plans. Prior to being engaged within the rail corridor, contractors undertaking work in a high risk bushfire environment shall ensure that their personnel have a clear understanding of the following:

(a) fire preparedness requirements for their staff members (e.g., equipment, training, permits);

(b) fire risk awareness inductions and mandatory fire safety toolbox talks; and

(c) compliance with state-based Fire and Emergency Services Acts and Regulations.

2.3.8 Training and competency

RIMs shall identify the skills and knowledge required for people that work in the rail corridor.

As part of these skill requirements, RIMs shall:

(a) determine the roles and responsibilities of staff that require fire prevention and control training;

(b) identify the minimum competency standards for staff and contractors in bushfire awareness and equipment use; and

(c) implement periodic training exercises including scenario-based drills with local emergency services where applicable.

2.3.9 Monitoring and review

A RIM shall review a fire prevention and control plan at planned intervals.

The review of the fire prevention and control plan shall involve:

(a) periodic reviews of fire prevention measures and field inspections;

(b) post-incident reviews and continuous improvement of fire management procedures; and

(c) updates triggered by significant environmental changes, asset upgrades or incident learnings.

2.4 Statutory reporting

Fires on or affecting a RIM's controlled infrastructure or at stations that are classified as notifiable must be reported to the following;

(a) Office of the National Rail Safety Regulator

(b) State based Work Health and Safety Regulators

Section 3 Vegetation hazard management

3.1 General

Disturbance to vegetation and soil on the rail corridor could promote invasion of weeds including noxious weeds, spread of pathogens and increase the risk of soil erosion and possible pollution of waterways. It could also contribute to loss of habitat for native animals. Re-vegetation with appropriate species indigenous to the location should be carried out as required.

According to standards such as ISO 14001, a RIM must have procedures in place to prevent the growth and spread of noxious weeds.

Commentary *C3.1*

Climate change can increase the pressure on biodiversity values by exacerbating existing threats and sometimes introducing new ones. Examples include increased frequency and severity of weather events, including bushfires and droughts, as well as changes in the distribution of native species.

Changes in climate can facilitate pest species invading new areas and out competing native species. This can lead to new weed invasions, shifts in existing weed populations and increased fire frequency and intensity.

3.2 Principles for vegetation hazard management

RIMs shall have processes in place to identify and assess vegetation management risks within the rail corridor. Risks within the rail corridor can include:

(a) obscuring sight lines for signals, signage, level crossings, etc.;

(b) reduction of clearances to overhead wiring;

(c) vegetation falling on assets causing damage to infrastructure

(d) clearance to trains;

(e) trees or other plants providing access for trespass;

(f) drainage;

(g) wheel slip or adhesion issues;

(h) fire; and

(i) access from excess biomass to operating equipment, maintenance and inspection areas.

3.3 Requirements

RIMs must comply with the numerous legislative requirements under state/territory, federal Parliament and local government agencies which influence the way in which vegetation hazards are managed and therefore could require approvals or exemptions to proceed with vegetation removal.

The RIM shall ensure that the staff who work in the rail corridor are aware of the key elements of legislative requirements.

The RIM shall ensure that processes are in place and personnel are able to adequately control the risks and hazards created from vegetation hazards. RIMs shall seek relevant permits and permissions, where required under law.

3.4 Risk management

A risk management plan shall be implemented for the management of vegetation hazards. This plan shall be reviewed at least once every five (5) years and updated accordingly.

This risk management plan shall detail the requirements for hazard identification processes, risk assessment and review procedures and indicate those locations which will be regularly inspected.

The risk management plan shall also detail those locations which have specific requirements. Records shall be kept detailing these requirements.

Local plans should be produced for sections of routes with significant risks. The local plans should include recommended frequency of intervention and methods of control. The local plans should also take into account the ecological and environmental impact of the intended vegetation control.

Where significant changes such as asset upgrades, climate events or increased land use for rail operations are identified, the associated risks shall be reassessed and where necessary revised measures implemented. Examples of changes include:

(a) electrification of route;
(b) installation of track circuits;
(c) introduction of new or different rolling stock;
(d) changes in vegetation including newly identified or newly listed species;
(e) growth rate and type of vegetation; and
(f) changes to adjacent land use, e.g., urban creep, increased traffic, new schools, etc.

The RIM shall maintain reports resulting from:

(g) planned inspections undertaken as part of the management system;
(h) periodic reports from staff, stakeholders, neighbours or statutory authorities.

See Appendix C for a detailed list of vegetation risks within the rail corridor

3.5 Vegetation management system

3.5.1 General

A vegetation management system should typically address the following items:

(a) notification and consultation;
(b) protection of infrastructure during vegetation hazard management;
(c) access for maintenance;
(d) training;
(e) soil management and erosion control;
(f) water course and drain management;
(g) the requirement for pre-work consents from Local Government Agencies
(h) waste management;

(i) management of work sites to preserve native and beneficial flora;

(j) biosecurity obligations to minimize the risk associated with invasive plants; and

(k) the requirements for obtaining permits regarding the movement of declared noxious weeds.

3.5.2 Vegetation control methods

Methods used to control vegetation can be grouped into four (4) general categories:

(a) mechanical control;

(b) controlled burning;

(c) chemical control; and

(d) other controls, as detailed below.

While developing control programs, the use of these methods or combination of these methods can be used.

3.5.3 Mechanical control

Mechanical control of vegetation involves the use of:

(a) mulchers/harvesters;

(b) hand tools such as saws; and

(c) power tools such as brush cutters, flails and mowers.

Rail mounted machinery/vehicles such as road rail vehicles can offer advantages where heavy equipment is required within the rail corridor.

The decision as to what mechanical control methods are used and where, should be based on the degree of control required, availability of resources and existing conditions.

The use of tools and machinery within the rail corridor can introduce additional risks. RIMs should identify and assess mechanical control risks such as:

(d) lack of hygiene controls for vehicles and machinery;

(e) the spread of plant material being lodged in vehicles and machinery;

(f) flying objects from cutting blades;

(g) overturning or falls from steep slopes;

(h) cuts from tools; and

(i) fire.

3.5.4 Controlled burning

Controlled burning to remove vegetation and fuel from the rail corridor is governed by state/territory and local regulations. Controlled burning may be conducted to mitigate fire risks and ecological management purposes. RIMs shall ensure that controlled burning plans comply with relevant legislative requirements.

The risk presented by fire varies with time of year and weather conditions and these factors shall be taken into account if controlled burning procedures are put in place. Some common risks introduced by controlled burning are:

(a) smoke obscuring train or road vehicle sight lines;

(b) damage to railway infrastructure;

(c) underground fires becoming established;

(d) spread of fire beyond intended boundaries;

(e) nuisance or damage to neighbours' interests and property; and

(f) off-target damage to protected areas.

3.5.5 Chemical control

Herbicide control of vegetation can offer economies in cost, labour and track occupancy as opposed to other methods of vegetation control.

Herbicides offer the ability to regulate the degree of control, species targeted control and duration of control. However, there should be appropriate control measures adopted prior to spraying weeds, with respect to the risks associated with chemical application.

The use of chemicals within the rail corridor can introduce additional risks. RIMs should identify and assess chemical control risks. Some common risks introduced by chemical control are:

(a) toxicity risk to humans and animals;

(b) herbicide resistance;

(c) spray drift causing damaging ecosystems outside the area to be controlled; and

(d) run off from rain causing contamination to land and waterways.

3.5.6 Other Controls

Other control methods can include:

(a) biological control using biological control agents e.g., rust fungus for blackberry;

(b) the protection of endangered species;

(c) use of livestock for grazing to control vegetation on steep slopes or uneven terrain;

(d) competitive planting, i.e. revegetation with desirable species; and

(e) cultivation, i.e. ploughing or hoeing to disrupt weed growth.

Section 4 Noxious weeds, pests and pathogens

4.1 General

Under relevant Federal, State or Territory and local regulations, linear infrastructure managers such as RIMs are responsible for managing noxious weeds, pests and pathogens to limit their spread within infrastructure corridors and from corridors to surrounding areas.

Native vegetation is resistant to colonisation and can create a barrier to weeds, however disturbance to soil and native vegetation from construction and maintenance activities can promotes the invasion of noxious weeds.

Commentary *C4.1*

Linear corridors such as railways can provide potential pathways within the landscape for the spread of invasive weeds, that can outcompete native flora, degrade ecosystems, increase bushfire risks and impact agricultural production.

Similarly operational and maintenance activities can also transport pathogens and pests which have the potential to impact on ecosystems, agriculture and landscaped areas.

4.2 Requirements

The RIM shall develop and implement processes to manage weeds, pest and pathogens to the extent required to:

(a) meet legal and statutory requirements;

(b) protect biodiversity values and control biosecurity risks arising from their activities; and

(c) control weeds to prevent an increase in bushfire risk on land under their management.

4.3 Recommendations

RIMs shall develop management practices to:

(a) manage occurrences of weeds, pests and pathogens on land under their management that include processes for:

(i) understanding the regional priories of Government;

(ii) identifying and recording occurrences of regional priority species;

(iii) determining management priorities and developing control programs; and

(iv) reviewing the effectiveness of control programs.

(b) control the risk of weed propagules, pests and pathogens being transported in materials and attached to vehicles including processes for:

(v) minimising soil and vegetation disturbance;

(vi) cleaning vehicles, machinery and clothing;

(vii) training applicable personnel to recognize weed and pest types; and

(viii) transport and disposal of material containing pathogen, pest and weeds.

4.4 Land management practices

To ensure the effective management of land within the rail corridor, RIMs should:

(a) understand regional priorities;

(b) identify and record incursions;

(c) undertake ecological surveys and inspections;

(d) determine weed management priorities;

(e) develop control programs; and

(f) review of the effectiveness of practices.

Land management techniques are a diverse set of practices used to maintain and improve the productivity of land whilst promoting sustainable use.

4.5 Environmental hygiene practices

RIMs shall adopt practical hygiene controls to improve environmental conditions by:

(a) minimising soil and vegetation disturbance;

(b) ensuring vehicle, machinery and clothing hygiene;

(c) providing staff and contractor training to recognize weed and pest types; and

(d) complying with transport and disposal requirements for material containing pathogen, pest and weed materials.

Environmental hygiene involves maintaining a clean and safe environment to minimize the risk of infection and disease.

4.6 Records

RIMs shall maintain records regarding the management of noxious weeds, pests and pathogens to ensure compliance with relevant laws and regulations.

Some examples of records include:

(a) environmental audits and assessments;
(b) regulatory notices and/or directions;
(c) risk assessments and treatment/control plans;
(d) environmental action plans;
(e) permit applications;
(f) environmental education and training data; and
(g) public complaints.

Section 5 Biodiversity

5.1 General

RIMs have a requirement to ensure that biodiversity is taken into account when conducting activities within the rail corridor. RIMs must comply with commonwealth and state legislation that includes protections for biodiversity and often requires environmental assessment, approvals or permits for activities impacting biodiversity.

Railway corridors often contain important biodiversity in the surrounding landscape and can provide the habitat connectivity needed to maintain viable populations of native species over time.

Railway operational and maintenance activities have the potential to impact on biodiversity through:

(a) vegetation clearing and habitat disturbance;
(b) introduction of weeds, pests and pathogens;
(c) changes to hydrology and drainage patterns;
(d) creation of barriers to wildlife movement;
(e) impacts of pesticide use; and
(f) erosion and sedimentation.

5.2 Principles

There is an expectation from regulators and the community that linear infrastructure managers will:

(a) carry out corridor management activities in a manner that minimizes impacts on biodiversity;
(b) manage corridors in a manner that seeks to maintain biodiversity values.

5.3 Requirements

The RIM shall develop and implement processes to manage biodiversity to the extent required to:

(a) meet legal and statutory requirements;
(b) minimize biodiversity impacts arising from their activities; and

(c) maintain biodiversity values of rail corridors they manage.

5.4 Recommendations

RIMs should have processes in place in relation to biodiversity sites in their rail corridors that include:

(a) identifying Biodiversity Sites within rail corridor they manage and to make this information available to personnel involved in corridor and infrastructure management activities;

(b) monitoring the condition the environment;

(c) identifying, prioritising and carrying out management actions; and

(d) have a process for controlling the type and extent of works in locations identified as having significant biodiversity values.

Where activities have the potential to impact on biodiversity the following hierarchy shall be applied:

(e) avoidance – seek alternative sites, designs or technology to prevent or minimize habitat loss;

(f) mitigation – Implement actions during planning, implementation and post activities to minimize the extent and duration of impacts; and

(g) offset – undertake activities to compensate for impacts.

Appendix A Hazard Register (Informative)

Hazard number	Hazard
6.1	Harm to the environment
6.17	Fire
6.3	Pollution from plant and or personnel
6.3.1	Human Error, Design Failure and or Vandalism
6.3.1.4	Site establishment waste
6.8	Harm to Track & Civil infrastructure during construction
6.9	Harm to Track & Civil infrastructure during operation and maintenance

Appendix B Fire Management Controls within the Rail Corridor (informative)

The following provides a list of control measures that can be included in a fire prevention and control management plan:

(a) identification and prioritized reduction of fire hazards;

(b) vegetation hazard management (as required by Section 3 of this Standard);

(c) fuel hazards and the risks posed by the hazard;

(d) location of fuel (combustible material);

(e) rail corridor housekeeping measures e.g., disposal of illegally dumped rubbish, accumulation of rubbish or redundant material;

(f) asset location. This could include risk to asset and impact dependant on location and population density, e.g., metropolitan area or outback location;

(g) requirements for contractors or third parties accessing the rail corridor;

(h) firefighting tools and equipment required;

(i) historic and predicted high risk periods;

(j) environmental assessments which include the presence or proximity of bio sites or other environmentally sensitive areas;

(k) weed management (including using fire as a management tool);

(l) refuelling and fuel storage for locomotives and plant;

(m) access for emergency services vehicles;

(n) communications plan;

(o) liaison with relevant agencies and stakeholders;

(p) security of the rail corridor and reporting of trespass;

(q) emergency evacuation of trains; and

(r) prescribed and controlled burning.

Appendix C Vegetation Hazards within the Rail Corridor (informative)

The following provides a list of vegetation hazards that could exist within the rail corridor:

(a) those affecting/influencing railhead conditions including adhesion and track circuit conditions;

(b) those which could impede or prevent the proper inspection of the infrastructure;

(c) damage to drainage systems and water courses from intrusive growth;

(d) danger from falling trees or parts thereof;

(e) impairment of sight lines of rail traffic and road traffic to trackside workers;

(f) impairment of sight lines of rail traffic to road users and pedestrians using authorized crossings;

(g) short circuit of electric traction supplies and train control systems;

(h) tripping and slipping hazards;

(i) reduction of clearances;

(j) encroachment into and obstruction of positions of safety, safe refuges and safe walking routes;

(k) fires – spontaneous, accidental or maliciously started;

(l) legislative requirements and third-party liabilities including noxious and invasive weeds, pests, etc.;

(m) the consequences of adverse weather on the vegetation, such as strong winds, flood, ice, torrential rain, etc., which introduce further hazards to the operation of the railway;

(n) signal and lineside sign sighting by train drivers;

(o) instability of structures, embankments and cuttings;

(p) instability of neighbouring property;

(q) herbicide sensitive or protected vegetation (e.g., organic farms);

(r) settlement or heave of infrastructure as a result of seasonal changes on large trees;

(s) spray drift and weed incursion;

(t) environmental erosion;

(u) impact on protected native animal and plant species; and

(v) sediment issues.